CONCEPTIONS AND PRACTICE OF INFORMATION LITERACY

IN ACADEMIC LIBRARIES:

ESPOUSED THEORIES AND THEORIES-IN-USE

by

PAULETTE A. KERR

A Dissertation submitted to the
Graduate School - New Brunswick
Rutgers, The State University of New Jersey
in partial fulfillment of the requirements
for the degree of
Doctor of Philosophy

Graduate Program in Communication, Information and Library Studies

Written under the direction of
Ross J. Todd, Ph.D.

and approved by

____________________________________

____________________________________

____________________________________

____________________________________

New Brunswick, New Jersey
May, 2010
ABSTRACT OF THE DISSERTATION

Conceptions and Practice of Information Literacy in Academic Libraries:
Espoused Theories and Theories-in-Use

By PAULETTE A. KERR

Dissertation Advisor:
Dr. Ross J. Todd

This research was conducted to investigate the relationships between conceptions and practice of information literacy in academic libraries. To create a structure for the investigation, the research adopted the framework of Argyris and Schön (1974) in which professional practice is examined via theories of action, namely espoused theories and theories-in-use.

Espoused theories were examined by investigating understandings and beliefs of information literacy and learning as seen in a range of policy documents including mission and goal statements of eleven academic libraries as well as those of their parent universities. These libraries were recognized by the academic library community for exemplary instruction resources. Theories-in-use were identified by analyzing information literacy practice via online tutorials utilized by these libraries in instruction initiatives. These documents and representations of practice were augmented by semi-structured interviews conducted with practitioners of information literacy education in these libraries.

A constant comparison approach (Strauss & Corbin, 1998) was used to develop broad themes, subcategories and statements of claims from these multiple data sources.
Meta-claims developed provided rich descriptions towards a comprehensive, holistic picture of information literacy education.

The research findings establish that information literacy education in the selected academic libraries is multi-dimensional, complex, and contradictory. The analysis revealed 1) explicit espoused theories of information literacy which coalesce around themes of knowledge creation and lifelong learning; 2) varied, less explicit and sometimes conflicting theories-in-use which emphasize engagement with information sources; 3) ad hoc levels of congruence in the relationships between espoused theories and theories-in-use as indicated by the few successful attempts to realize goals and outcomes in instruction initiatives; 4) major contradictions and incongruence in the relationships between the espoused theories and theories-in-use as indicated by significant gaps in addressing goals and missions; 5) enablers and barriers to achieving effective practice; 6) emergent trends in information literacy practice.

Implications for practice include issues of pedagogy and instruction design towards consistency and congruence. The study suggests areas for future research.

The research process is presented as a model and tool for evaluating varied dimensions of information literacy practice including multiple online resources and classroom initiatives.
ACKNOWLEDGEMENTS

...Since we are surrounded by a great cloud of witnesses, let us put aside everything that hinders... and let us run with perseverance the race before us.
Hebrews 12:1

Throughout my Ph.D. journey at the School of Communication and Information, I was privileged and blessed to be “surrounded” by many persons who in different and multiple ways assisted me to begin, run and to finish this “race”. I am grateful to everyone who touched my life in some way and assisted in making this dissertation possible.

I was honored and very fortunate to be guided during the process by Dr. Ross J. Todd, the epitome of a great teacher who guided, modeled, always encouraged and allowed me to soar. Ross is generous with his deep knowledge, his time, and overall support. I am extremely grateful to him for his enthusiasm about my research project, his confidence in my ability to produce an excellent dissertation and his patience during those challenging times when I faltered and thought I would not make it.

I am also grateful to my committee members, Dr Jana Varlejs, Dr. Carol Gordon and Dr Elspeth Goodin for their time, on-going support and encouragement, and intellectual advice on different aspects of my research. I am particularly thankful to Dr. Varlejs, who with her wisdom and attention to details became my sounding board.

There are so many members of faculty and staff of the School of Communication and Information who provided advice, assistance and encouragement throughout the journey that it is impossible to name them all individually. I thank you all! However I was privileged to have been taught by Professor Tefko Saracevic, and advised by
Professor Harty Mokros in his role as Director of the Ph.D. program when I started at SC& I. Joan Chabrak was a tower of support and advice.

I could not have made it without the invaluable advice, support, encouragement and friendship of my fellow Ph.D. colleagues who played different and significant roles. It would be impossible to name all who helped. Thanks to Edith Beckett, Davida Scharf, Marianne Martens, Sung Un Kim, and Nicole Cooke. I am particularly grateful to Aleksandra Sarcevic, Cathy Smith, Jen deRichmond, and Susanna Sabolcsi who seemed to be always there when there was a need. They listened, gave suggestions and advice, assisted with drafts of papers and presentations and supported during the challenging times.

A Fulbright Faculty Development Fellowship from the US State Department through my home institution, the University of the West Indies, Mona and generous leave allowance from UWI, allowed me to begin and to complete this research project. I received invaluable support from the university community at Mona especially from my colleagues in the University Library including the Campus Librarian, Norma Amenu-Kpodo.

Sincere thanks are in order to twelve generous academic librarians who accepted my invitation to be interviewed for this research project. Their perspectives added an essential dimension to the study.

I was “surrounded” by many friends here in the US and in Jamaica who called, encouraged, listened, opened their homes, gave of their time and love, prayed with me and supported me in numerous ways throughout the entire Ph.D. journey. I am indebted to many and especially Carlene, Arlene, Jean, Dorreen, Valrie, Clyde, Pat, Leighton,
Audrey, Donna, Teddy and Joy and my friend Franklin Tulloch who died suddenly during the process. Thanks to my Bethany and NBUMC ‘families’.

How would I have survived this “race” without the undying support of my immediate and extended family in North America and Jamaica? I am grateful to my sisters and brother and their families for their love and support and prayers; to Nathan for his support especially in providing a home away from home. Thanks to my daughter-in-law Shani who understood, prayed and encouraged. Most of all I thank my son Nicholas, who shared the dream of a Ph.D. with me years before it became a reality and encouraged, loved and supported me in ways too numerous to mention through every step of the process.

This “race” was challenging but became possible since God promised to do exceeding abundantly and more! He was the wind beneath my wings!
DEDICATION

To my son Nicholas for believing in me

To the memory of my mother, who sacrificed so much, and gave so much, so that her children would be...come.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABSTRACT OF THE DISSERTATION</td>
<td>ii</td>
</tr>
<tr>
<td>ACKNOWLEDGEMENTS</td>
<td>iv</td>
</tr>
<tr>
<td>DEDICATION</td>
<td>vii</td>
</tr>
<tr>
<td>TABLE OF CONTENTS</td>
<td>viii</td>
</tr>
<tr>
<td>LIST OF TABLES</td>
<td>xiii</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>xv</td>
</tr>
<tr>
<td>CHAPTER 1: Introduction</td>
<td></td>
</tr>
<tr>
<td>1.0 Research Approach and Chapter Overview</td>
<td>1</td>
</tr>
<tr>
<td>1.1 Importance of Information Literacy</td>
<td>2</td>
</tr>
<tr>
<td>1.2 Statement of the Problem</td>
<td>6</td>
</tr>
<tr>
<td>1.3 Background to the Problem</td>
<td>7</td>
</tr>
<tr>
<td>1.4 Approaches to Studying the Problem</td>
<td>11</td>
</tr>
<tr>
<td>Theoretical Lens: Theory of Action</td>
<td>11</td>
</tr>
<tr>
<td>Brief Overview of Methodological Framework</td>
<td>12</td>
</tr>
<tr>
<td>1.5 Research Questions</td>
<td>12</td>
</tr>
<tr>
<td>1.6 Definitions and Terminology</td>
<td>14</td>
</tr>
<tr>
<td>1.7 Contribution and Significance of Research Theory of action</td>
<td>16</td>
</tr>
<tr>
<td>CHAPTER 2: Literature review</td>
<td></td>
</tr>
<tr>
<td>2.0 Chapter Overview</td>
<td>18</td>
</tr>
<tr>
<td>2.1 Information Literacy: Definitions, Paradigms, Theoretical Frameworks and Beliefs</td>
<td>19</td>
</tr>
<tr>
<td>Competing Definitions and Underpinning Framework</td>
<td>21</td>
</tr>
</tbody>
</table>
Behaviorist Tradition .............................................................................................................22
Critiques and alternative definitions to the Behaviorist approach ..................................26
Constructivist Traditions ........................................................................................................27
Derivatives of Major Paradigms ..........................................................................................35
Other Definitions and Theoretical Frameworks .................................................................35
Foundational Beliefs about Practice ....................................................................................40
Summary .................................................................................................................................43

2.2 Theory of Action: Espoused Theories and Theories-in-use .......................................44
Overview .................................................................................................................................44
Research guided by Theory of Action ................................................................................47
Summary .................................................................................................................................52

2.3. Mission Statements as Sources of Espoused Theories ..............................................53

2.4. Information Literacy Practice .......................................................................................60
The Online Tutorial as Representation of IL Practice .........................................................60
The Online Tutorial as Effective IL Instruction: Criteria and Characteristics ................63

2.5 Chapter Summary .............................................................................................................73

CHAPTER 3: Methods

3.0 Chapter Overview ...........................................................................................................75

3.1 Methodological Approaches .........................................................................................75
Grounded approach .............................................................................................................76
Document analysis ..............................................................................................................77

3.2 Study Population: Process of and Rationale for Selection of Cases .........................78

3.3 Data Sources: Justification and Collection ....................................................................81
3.4 Pilot Study..........................................................................................................................86

3.5 Data Analysis .....................................................................................................................93

Overview................................................................................................................................92

Phases......................................................................................................................................94

3.6 Chapter Summary ..............................................................................................................99

CHAPTER 4: Findings: Information Literacy Profiles: Eleven Cases

4.0 Chapter Overview .............................................................................................................100

4.1 Case1:Lib01 .....................................................................................................................103

4.2 Case 2:Lib02 ...................................................................................................................115

4.3 Case 3:Lib03 ...................................................................................................................128

4.4 Case 4:Lib04 ...................................................................................................................140

4.5 Case5: Lib05 ...................................................................................................................149

4.6 Case6:Lib06 ...................................................................................................................161

4.7 Case7:Lib07 ...................................................................................................................176

4.8 Case8:Lib08 ...................................................................................................................189

4.9 Case9:Lib09 ...................................................................................................................199

4.10 Case10:Lib10 ...............................................................................................................213

4.11 Case11:Lib11 ...............................................................................................................221

4.12 Chapter Summary ..........................................................................................................231

CHAPTER 5: Findings: Meta Analysis: Answering Research Questions

5.0 Chapter Overview .............................................................................................................232

5.1 Conceptions of Information Literacy: Espoused Theories .............................................233

Meta-claims developed..........................................................................................................234
5.1.1 Relationships between teaching missions of Libraries and Universities........235
5.1.2 Learning goals/objectives in IL mission statements .................................238
5.1.3 Definitions or explanations of information literacy ..................................247
5.1.4 Assumptions and claims regarding information literacy .........................251
5.1.5 Summary: Conceptions of information literacy: Espoused theories.........252
5.2 Practice of IL as demonstrated in online tutorials: Theories-in-Use ..........253
 Meta-claims developed ....................................................................................254
5.2.1 Explicit and implicit learning outcomes and goals of the tutorials ..........255
5.2.2 Indicators of the continuum from access to use of information, critical thinking,
 information use and knowledge construction/change .....................................275
5.2.3 Teaching learning strategies/approaches ..................................................278
5.2.4 Theoretical frameworks reflected in tutorials .........................................279
5.2.5 Strategies and specific tasks for assessing learning .................................280
5.3 Relationships between conceptions and practice of information literacy: Holistic
 understandings of information literacy instruction .........................................282
5.3.1 Congruence and incongruence between espoused theories and theories-in-use of
 information literacy .........................................................................................284
5.3.2 Explanations offered for incongruence and congruence ..........................287
5.3.3. Common characteristics of IL programs ..............................................296
5.3.4 Emerging trends in information literacy education .................................298
5.3.5 Model of an effective Information Literacy program ...............................298
5.4 Chapter Summary .......................................................................................300

CHAPTER 6: Discussion and Conclusions

xi
List of Tables

Table 3.1: Institutional details and codes for sample academic libraries .................81
Table 3.2.: Types of official and instruction documents identified from websites of academic libraries ...........................................................................................................86
Table 4.1: Assigned codes of online tutorials of 11 academic libraries .....................101
Table 4.2: Lib01: Concepts from mission documents and online tutorials ................104
Table 4.3: Lib01: Claims from policy documents and online tutorials ....................111
Table 4.4: Lib02: Concepts from mission documents and online tutorials .............115
Table 4.5: Lib02: Information literacy outcomes in online tutorials .......................123
Table 4.6: Lib02: Claims from policy documents and online tutorials ...................124
Table 4.7: Lib03: Concepts from mission documents and online tutorials .............129
Table 4.8: Lib04: Concepts from mission documents and online tutorials .............140
Table 4.9: Lib05: Concepts from mission documents and online tutorials .............149
Table 4.10: Lib05: Claims from policy documents and online tutorials ................157
Table 4.11: Lib06: Concepts from mission documents and online tutorials ...........161
Table 4.12: Lib06: IL competencies identified in tutorials ....................................168
Table 4.13: Lib06: Claims from policy documents and online tutorials .................170
Table 4.14: Lib07: Concepts from mission documents and online tutorials ..........176
Table 4.15: Lib07: Claims from policy documents and online tutorials .................184
Table 4.16: Lib08: Concepts from mission documents and online tutorials ..........189
Table 4.17: Lib08: Claims from policy documents and online tutorials .................195
Table 4.18: Lib09: Concepts from mission documents and online tutorials ..........200
Table 4.19: Lib09: Claims from mission documents and online tutorials ...............207
Table 4.20: Lib10: Concepts from mission documents and online tutorials ...............213
Table 4.21: Lib10: Claims from policy documents and online tutorials ..................218
Table 4.22: Lib11: Concepts from mission documents and online tutorials ...............222
Table 4.23: Lib11: Claims from policy documents and online tutorials ..................228
Table 5.1: Categories of concepts from mission statements of academic libraries ......237
Table 5.2: Explicit references to critical thinking outcomes in library missions.........242
Table 5.3: Outcomes relating to accessing and using information sources ...............244
Table 5.4: ACRL Standards linked to definitions of IL and learning outcomes ...........248
Table 5.5: Definitions of Information Literacy .........................................................250
Table 5.6: Types of tutorials by libraries .................................................................256
Table 5.7: Meta-claims of espoused theories and theories-in-use .........................300
Table D1: Verbatim Statements labeled and categorized ........................................338
Table D2: Categories of verbatim statements .........................................................339
Table D3: Claims of espoused theories and theories-in-use ....................................340
List of Figures

Figure 1.1 Overview of the Study .................................................................2

Figure 2.1 Model of the Information Search Process .....................................30

Figure 2.2 Seven Experiences of Information Literacy ....................................36

Figure 2.3 Select information literacy definitions with theoretical underpinnings ....41

Figure 4.1 Lib05: Short tutorials on finding information sources ....................154

Figure 4.2 Lib05: Writing module in Research Tutorial .................................156

Figure 4.3 Lib08: Grouping of tutorials ...........................................................194

Figure 4.4 Lib09: Tutorials on finding sources ...............................................205

Figure 5.1 Spread of types of online tutorials .................................................264

Figure 6.1 Information literacy: Evaluation and Reflection Model ....................325
CHAPTER 1
Introduction

1.0 Research Approach and Overview

The focus of this research is in the field of information literacy in academic libraries. The study investigated the relationships between philosophical and conceptual understandings of information literacy (IL) and concurrent professional practice. The purpose was to provide a richer understanding of the relationships between the espoused theories and theories-in-use of information literacy. The research was guided by the theoretical framework of Argyris and Schön (1974) in which theories of action, namely espoused theories and theories-in-use are employed to explain professional practice.

Information literacy is defined and generally understood as the ability to access, evaluate and use information towards a specific purpose (American Library Association, 1989). The underlying assumption in this definition is that information literacy is positioned on a continuum from information access to the effective use of information. This definition has guided conceptual and philosophical discussions of information literacy. How is this definition realized in the practice of information literacy education? What guides the implementation of information literacy practice? Kuhn (1996) posits that professional practice is underpinned and shaped by a received set of beliefs, values and models. This shared paradigm according to Kuhn is reflected in the language of practice. Todd (1995) reiterates this when he says practice provides the opportunity to test principles and theories. The question asked here is whether the conceptual understandings, the foundational beliefs and values of information literacy as expressed in official mission documents, guide the practice of the academic library community.
Figure 1.1 presents an overview of the study showing the theoretical framework, the research questions and the artifacts investigated. The chapter details the research problem and provides a brief overview of the theoretical framework, research questions which guided the study as well as definitions of key terminology.

1.1 Importance of Information Literacy

As a concept and professional practice, information literacy is considered critical in a growing number of social and academic contexts. The importance of the concept in society has implications for the quality of IL instruction in academic institutions. An understanding of how information literacy is implemented in practice becomes essential.
since how library-centered instruction is delivered is critical for today’s students (Watson, 2007).

Information literacy is widely recognized as foundational for effective engagement with information in academia, the workplace, for citizenship and for daily living. Information literacy has a profound impact on education, employment and quality of life in today’s information-driven and information-rich environment (Watson, 2007). The widespread acknowledgement of the essential role of information literacy is substantially documented in government, learning institutions and a range of policy documents (Horton, 2008; Horton & Keiser, 2008; Middle States Commission on Higher Education, 2003; UNESCO, 2008; Wallis, 2005). In academic institutions information literacy is considered a desirable component of liberal education. Rapid and widespread acceptance of the concept since the release of the American Library Association’s * Presidential Committee on Information Literacy Final Report* (1989), has led to emphasis on information literacy in all education sectors. Bruce (1997b) claims that the importance of information literacy to life long learning has captured the imagination of higher educators all over the world in a way that earlier concepts of “user education” and “information skills” did not. In the United States regional accreditation standards have revised their expectations for higher education institutions to reflect the important influence of information literacy in all aspects of the educational experience (Watson, 2007). The Middle States Commission on Higher Education is one of a number of higher education accreditation agencies that has mandated that institutions it accredits, include information literacy in the curriculum across disciplines as “many aspects of information literacy are essential components of general education” (Middle States
Commission, 2003). In fact it may be difficult to separate information literacy from the
goals of a good undergraduate education (ALA, 2006). Other curricula statements from
around the world emphasize the integral role of information literacy. Rader (2002) notes
that New Zealand has had a national curriculum framework for information literacy since
the early 1990s and Virkus’ review of information literacy in Europe (2003) establishes
the early integration of information literacy within elementary schools curriculum in
Sweden.

Yet information literacy has significance way beyond the doors of academia as it is
recognized for “real world” value. In the present information/knowledge society,
information literacy is perceived as a tool for personal empowerment and an instrument
of economic progress. In the workplace, it is seen as an aid to personal professional
development and a strategy for constructing new knowledge and information (Bruce &
Crawford (2008), Kirk (2004), and Lloyd (2003, 2004, 2007) address the relationships
between workplace competencies and information literacy. Bawden and Robinson (2002)
also present preliminary findings of research on information literacy needs of information
professionals in Europe and the United States.

Essential elements of information literacy are embedded in national and
international political agendas as it is recognized globally as central to the practice of
democracy (ALA, 1989). Various countries have formally embraced information literacy
in national policy documents (Menou, 2002).
A recent endorsement by the President of the United States in establishing a National Information Literacy Awareness Month in October 2009 (U.S. President, 2009) confirmed the significance of information literacy.

The National Forum on Information Literacy (NFIL), established in 1989 by the American Library Association, represents over 90 national and international institutions and organizations all aimed at promoting the importance of information literacy in all areas of society (National Forum, 2008). Further, the international reach of information literacy is also confirmed by a number of events which have defined its role beyond educational remit by linking it with the development of an “Information Society” (Andretta, 2007a). In the *Prague Declaration* (2003), information literacy is firmly embedded in the process of life long learning and valued as a human right. Its social roles were reiterated by the United Nations Educational Scientific and Cultural Organization (UNESCO) in the *Alexandria Proclamation on Information Literacy and Lifelong Learning*

Information Literacy lies at the core of lifelong learning. It empowers people in all walks of life to seek, evaluate, use and create information effectively to achieve their personal, social, occupational and educational goals. It is a basic human right in a digital world and promotes social inclusion of all nations (UNESCO, IFLA, & NFIL, 2005).

In another seemingly far reaching move, the International Federation of Library Associations and Institutions (IFLA), changed the name of its User Education Round Table to become the Information Literacy Section aimed at fostering international cooperation of information literacy education in all types of libraries and produced Information Literacy Guidelines for the international library community (IFLA, 2006).
The global reach of information literacy is underscored by the work of UNESCO which aims at fostering information literacy worldwide by assisting in the development of national information literacy policies. Currently, the organization provides national and regional information literacy programs and projects in areas including, the Caribbean and Latin America, India, Africa, and Europe to equip people “to seek, evaluate, use and create information effectively to achieve their personal, social, occupational and educational goals” (UNESCO, 2008). Further, the IFLA/UNESCO School Library Manifesto (2006) which documents information literacy as a key goal in education has been translated into over 30 languages.

Information literacy has become a global issue and its initiatives in all spheres of life including education and workplace are documented throughout the world (Horton, 2008; Rader, 2002; Virkus, 2003). This research assumed the importance of information literacy and aimed to investigate how it is implemented in practice in one kind of educational sphere.

1.2 Statement of the Problem

Complexity and contradictions in information literacy

Despite the growth of the concept and its professional practice, information literacy remains complex and contradictory. The complexity results primarily from the multiple often competing views and understandings, and these differences may predict varying approaches to practice. Lupton (2004) documents the existence of a plethora of understandings, definitions, descriptions and models of information literacy. Definitions range from being equipped with generic skills, a process of knowing, a process of acquiring new meaning and understanding, and enabling the effective utilization of information for a purpose. Competing conceptual understandings also add to the
complexity of information literacy. These include a behaviorist framework, a constructivist, knowledge building approach, a process approach and a relational understanding. These conceptual frameworks are espoused as being essential to developing information literate persons or enabling information literacy. The contradiction however is that although there is a rich and varied conceptual foundation, there is little evidence that this foundation is linked to the development of instruction programs in information literacy. The vibrancy of information literacy that is evidenced in its conceptual approaches and definitions did not seem to be actualized in professional practice. It appears that most professional practice is influenced by one dominant paradigm which promotes a skills approach to learning (Bruce, 1997a). However, there is little empirical research on how, and whether professional practice in academic institutions is linked to these varying conceptual understandings. This research attempted to fill this research gap by conducting in-depth analysis of artifacts representing both conceptual understandings and practice in information literacy, mission and goal statements and exemplary online tutorials of academic libraries. Documented contradictions in information literacy necessitate this type of analysis since Argyris and Schön (1974) advocate for critical examination of theories of action, i.e. espoused theories and theories-in-use during periods of dilemmas and conflicts.

1.3 Background to the Problem

As Coordinator of Information Literacy and as reference and instruction librarian at a research university in Jamaica for almost twenty years, I faced a number of dilemmas in the practice of information literacy education. Firstly there was an apparent disconnect in the teaching-learning process as the expectations of what information literacy
instruction would achieve were not always realized in practice. Students emerged from information literacy instruction sessions with a seeming inability to effectively access and use information in other academic endeavors, i.e. transfer learning from one situation to another. There was little evidence of transfer of the knowledge for other academic pursuits and to other information needs. Yet information literacy is understood and promoted as enabling deep learning and the effective use of information in all formats.

Although information literacy evolved from library and bibliographic instruction, as a concept it was known as facilitating more than tool use by enabling critical engagement with information and the construction of new knowledge. It would contribute to lifelong learning and was seen as essential for constructing understanding. If information literacy as taught did not allow for developing thinking abilities to build and transfer knowledge to novel academic situations how would students adjust to challenging everyday information situations? Without transfer, the work of information literacy is in vain (Reece, 2007).

Initially, my questions focused on possible external influences on the learning process. I searched for answers to the dilemma in information literacy instruction in cultural and social contexts. However these did not provide all the answers. Maybe it was possible that problems of effective information use and transfer of learning were not external to but were intrinsic to the concept of information literacy and how it was taught. There was an apparent gap between the ideal and the practical. It is what Johnston and Webber (2003) call the gap between implied information literacy curriculum and actual practices of teaching, learning, and assessment. I began to think that maybe the focus on
skills development rather than what Bruner (1960) calls attitude change would not allow for understanding and construction of new knowledge.

I found further contradictions when I searched the burgeoning literature on information literacy. Contradictions were evident in areas deemed foundational to the concept. One essential criterion of information literacy is the development of critical thinking which should enable the transfer of critical competencies to novel and varied situations. It is generally agreed that one of the main goals of education is to enhance thinking skills and one of the aims of information literacy is to support educational goals. In addition critical thinking is essential for everyday life decisions and an underlying assumption of information literacy is developing the ability to transfer abilities to non academic situations. Behrens’s (1994) historical overview of information literacy details the changing focus of information literacy from tools-based skills to the realm of critical thinking. Yet there were contradictions between the concept of information literacy and its practice in relation to the role of critical thinking. The guiding conceptual framework for understanding information literacy, the ACRL Information Literacy Standards for Higher Education, declares “critical discernment and reasoning” as essential components of information literacy (ALA, 2000, p.3). Yet according to Herro (2000), not all librarians agree on the value of critical thinking in library instruction and so it is not always addressed or encouraged as an outcome of instruction. Secondly where critical thinking is valued, there appears to be a naïve and limited understanding of what constitutes critical thinking. A check list of evaluation criteria therefore has become the primary means by which critical thinking is encouraged yet this may reduce the instruction to a technical-know-how rather than critical engagement with various forms and kinds of information
and a way of thinking through the everyday problems that students encounter (Reed & Stavreva, 2006).

More contradictions were identified. Should learning theories form an essential aspect of the theoretical framework of information literacy education and should this guide both practice and research? Markless and Streatfield’s (2007) review of research and practice in information literacy in the United Kingdom, found that information literacy models and programs were not linked to any learning theory and process, and ignored reflection and different learning strategies. Models were grounded primarily in the mechanics of information literacy instruction.

There was also an apparent conundrum between research findings and professional practice. The collective findings of research by Bruce (1997b), Edwards (2006), Heinström (2006a, 2006b), Limberg (1999), Lupton (2004), Maybee (2006, 2007), Todd (1999, 2006) suggest different and competing approaches to information use. These varying understandings of information literacy need to be addressed in instructional interventions (Lupton, 2004). Yet Markless and Streatfield’s (2007) analysis of U.K. academic institutions indicates that many information literacy programs continue to use a single skills-based process and a linear process to teaching information literacy.

Although not seemingly related, these issues were at the core of my quest to further understand the relationship between espoused theories and theories-in-use in information literacy. How is information literacy understood by academic librarians and how is it implemented? The research addressed some of these questions in an attempt to
develop further rich understanding of the theoretical and in-practice approaches to the complex concept of information literacy.

1.4 Approaches to Studying the Problem

Theoretical lens: Theory of action.

The overall aim of the study was to understand whether the conceptual positionings of information literacy are realized in professional implementation. Guiding this investigation of information literacy was the theoretical framework of Argyris and Schön (1974) in which contrasting theories of action are explicated, namely theories-in-use and espoused theories.

When someone is asked how he would behave under certain circumstances, the answer he usually gives is his espoused theory of action for that situation. This is the theory of action to which he gives allegiance, and which, upon request, he communicates to others. However, the theory that governs his actions is this theory-in-use (p.6-7).

These theories therefore provided a framework for comparing the conceptualization and operationalization of information literacy. Argyris, Putnam and Smith state “espoused theories are those that an individual claims to follow. Theories-in-use are those than can be inferred from action” (1985, p.82). This is further clarified by Argyris and Schön (1974) who posit that people have mental maps about their actions and these mental maps guide actions rather than the theories they explicitly espouse. This distinction between espoused theories and theories-in-use allowed for the framing of questions about the conceptions and philosophies which guide information literacy education and whether these are demonstrated in the professional practice. Theory of action advocates for the public testing of knowledge claims of communities of practice (Argyris, Putnam &
Smith, 1985). It therefore provided one avenue to gain an understanding of the conceptions which guide academic librarians’ information literacy instruction.

**Brief Overview of Methodological Framework**

The aims of the research were achieved through a rigorous qualitative constant comparative analysis (Strauss & Corbin, 1998) of concepts as expressed in mission statements [espoused theories] and exemplar online tutorials [theories-in-use] of eleven academic libraries as well as transcripts from interviews with key information literacy educators. The mission and goals statements typically espouse values and beliefs and are an institution’s public declaration of its purposes and vision of excellence (Meacham & Gaff, 2006). As the review of the literature indicates, the online tutorial has emerged as a primary vehicle of practice in information literacy. It is presented as both a reflection of the philosophy of information literacy, and an ideal representation of good professional practice. Accordingly, mission statements and online tutorials were examined to identify statements and concepts of espoused theories and theories-in-use.

The instructional online tutorials were those of eleven institutions that were recognized in two databases documenting information literacy best practice, Peer Reviewed Instructional Material Online, referred to as PRIMO (ALA, 2008a) and the LOEX Clearinghouse of Instructional Material (LOEX, 2008).

**1.5 Research Questions**

The following research questions were developed to achieve the overall purpose of the study.

The principal research question

**How is information literacy (IL) conceptualized and practiced in academic libraries?**
More specifically and implicit in this are three questions:

**Research Question 1** aimed at understanding espoused theories of information literacy:

**What are the predominant conceptions/understandings of IL as seen in instructional mission statements/statements of purpose etc of academic libraries?**

To arrive at this understanding the following were examined:

1. Relationships between missions of the library and university.
2. Learning goals and objectives in information literacy mission statements.
3. Definitions or explanations of information literacy.
4. Assumptions and claims regarding information literacy.

**Research Question 2** aimed at understanding theories-in-use:

**How is information literacy practiced as demonstrated in online tutorials of academic libraries?**

To arrive at this the following were explored:

1. Explicit and implicit learning outcomes and goals of online tutorials.
2. Indicators of the continuum of information literacy from access to use of information, critical thinking, information use and knowledge construction/change.
3. Teaching/learning strategies and approaches employed in tutorials to facilitate deep learning.
4. Theoretical frameworks reflected in tutorials
5. Strategies and specific tasks for assessing learning
Research Question 3 aimed at developing a holistic picture of information literacy instruction in academic library settings in higher education by an analysis of relationships between the espoused theories and theories-in-use as identified in RQ1 and R2:

What are the relationships, if any between conceptions and practice of information literacy?

To arrive at this the following questions were asked of the data:

1. What are, (if any) the consistencies /congruence and contradictions between espoused theories and theories-in-use of information literacy?
2. What are some possible explanations from information literacy educators for the consistencies and contradictions?
3. What are the common characteristics in IL programs?
4. What are the emerging trends in information literacy practice?
5. What might constitute an effective IL program?

1.6 Definitions and Terminology

This section includes definitions of key concepts and terms used throughout this study.

Information literacy

The multiple approaches to information literacy make it difficult and challenging to use a single definition to capture this complex concept. For this study information literacy (IL) was discussed from two approaches. The first approach recognizes the pervasive and much used definition of the American Library Association which promotes information literacy as a set of skills and abilities on a continuum of access to use of information. “To be information literate a person must be able to recognize when information is needed and have the ability to locate, evaluate and use effectively the
needed information” (ALA 1989). The working definition for this study however was derived from other approaches which are more inclusive and encompassing of the complex and varied nature of the concept. Information literacy is defined as a process of enabling the effective engagement with and use of information to construct new knowledge for a specific purpose in various contexts.

**Theory of action**

Developed by Argyris and Schön (1974) as a framework for explaining professional practice in various organizations, theories of action are explanations arising from unconsciously or consciously held beliefs, values, theories, concepts, rules policies, norms or skills which are utilized to describe or predict action. Contrasting theories of action are theories-in-use and espoused theories. The theory provides a detailed framework for explaining relationships between what can be observed in people’s actions and their beliefs about those actions. Foundational to the framework of Argyris and Schön is that congruence between theories-in-use and espoused theories will increase professional effectiveness.

**Espoused theories**

“Espoused theories are those that an individual claims to follow” (Argyris, Putnam, & Smith, 1985 p.82). In this study espoused theories relate to values, beliefs and rules of information literacy education and instruction which academic libraries and librarians say underpin their action.

**Theories-in-use**

Theories-in-use are those than can be inferred from action (Argyris, Putnam & Smith, 1985). In this study theories-in-use relate to concepts, indicators and outcomes of
information literacy which are explicit and implicit in online tutorials of academic libraries.

1.7 Contribution and Significance of Research

The study makes a significant contribution to the burgeoning discourses on the complex concept of information literacy and its realization through professional practice. Specifically, the research provides empirical data on the relationships between espoused and in-use-theories of information literacy in academic institutions. In the process it has added to the growing body of research that examines theories of action of different communities of practice. Kane, Sandretto and Heath’s (2002) review of research in this area draws attention to the need for more research examining both espoused beliefs and practice. They posit that this type of research is important since practice in disciplines and professions is grounded in conceptions and assumptions. Substantial research exists that has examined conceptual frameworks in information literacy. A comparable body of work has developed models for professional practice. However as shown in chapter 2, gaps remain in our understanding of the complexity of relationships between conceptions and concurrent practice of information literacy. This study is important as no significant research was identified in library and information science that conducted a ‘public testing’ of espoused theories in relation to theories-in-use of information literacy practitioners. This is an in-depth study which examined conceptual understandings and values as well as manifestations of practice.

The findings of the research provide new understandings in different aspects of information literacy practice. The research has clarified what are the driving theoretical frameworks and assumptions in information literacy education as well as highlighted
traditional and emerging trends in practice. In addition, with the convergence of data from mission documents, online tutorials and voices of librarians intimately involved in the practice of information literacy, the research provides a holistic model of information literacy education in academic libraries. The further implications of the research are linked to the proposition of Argyris, Putnam and Smith (1985) that implicit in an investigation of theories of action, is the theory of learning. Public reflection on practice is done in the interest of learning towards bringing theories-in-use in line with espoused theories. The findings from this research are towards bringing about effectiveness in information literacy practice. At a broader level therefore this study informs information literacy practitioners. It provides an empirical basis for dialog to examine and evaluate information literacy practice. In addition, the study provides a framework for instruction librarians to mesh values and beliefs about information literacy with its implementation. It offers a new model and framework for the evaluation of information literacy instruction tools, as well as posits guidelines for both policy design and instructional design.
CHAPTER 2
Literature Review

2.0 Chapter Overview

In this chapter, important concepts and theoretical foundations underlying the study are explored in four sections. These are information literacy, action theory, mission statement and the online tutorial. Section 1 investigates conceptual understandings of information literacy through select literature on definitions, theoretical frameworks and research findings. This section highlights the multiple frameworks that may guide professional practice and confirms the tensions and conundrum in information literacy referred to in chapter 1. Since this study explored the relationship between conceptual understandings and professional practice through the lens of espoused theories and theories-in-use, section 2 of the chapter sets the context for understanding this relationship by detailing the theoretical framework of Argyris and Schön (1974) on espoused theories and theories-in-use. The section also highlights key issues from select research studies that have employed this framework to investigate relationships between theory and professional practice. The chapter then focuses on artifacts to be studied, the mission statement and the online tutorial. Section 3 examines select research and conceptual papers on the role of mission statements in organizations including academic institutions. Research studies and discussion papers on the online tutorial as representative of information literacy practice are examined in Section 4. Although the scope of the review of the literature in the chapter is selective rather than comprehensive, it provided the context for the problem to be investigated.
2.1 Information Literacy: Definitions, Paradigms, Theoretical Frameworks and Beliefs

Overview

Although information literacy had its beginnings in academic environments, multiple and sometimes competing perspectives and understandings have emerged from varying empirical and conceptual contexts resulting in a complex phenomenon. Lupton (2004) confirms the existence of a plethora of understandings, definitions, descriptions and models of information literacy. Kaptizke (2003a) reports that the literature shows that meanings and definitions of information literacy have never been fixed. The literature examined confirms the breadth of papers detailing the shifts in meanings and understandings of IL. In his investigation of IL, Marcum (2002) asserts that as a concept information literacy is too wide and encompasses too much. Yet Johnston and Webber (2006) declare that information literacy must be wide since they propose it as a discipline and field of study. Multi-dimensional definitions also emerged to capture Definitions of the concept range from being equipped with discrete generic skills, constructing knowledge, critical thinking, enabling life long learning, a process of knowing, a process of acquiring new meaning and understanding, enabling the effective utilization of information for a purpose and a complex of ways of experiencing information use. The literature abounds with reflections and discourses on these varying definitions with both arguments justifying and suggestions for alternatives (Behrens, 1994; Bruce, 1997a, 1997b, 1998; Lloyd, 2003; McAdoo, 2008; Owusu-Ansah, 2003; Snavely and Cooper, 1997; Webber & Johnston, 2000).
It appears that most of these definitions are rooted in broad theoretical and conceptual traditions. These include a behaviorist framework, a constructivist, knowledge building approach, a process approach and a relational understanding which are employed as platforms for explaining information literacy. These frameworks are explicated later in the chapter. These conceptual frameworks are sometimes competing and this adds to the complexity of information literacy.

In addition there are other paradigms that drive understandings of information literacy. Pawley (2003) suggests that the contradiction in understandings is unavoidable since the coupling of ‘information’ and ‘literacy’ invites opposing perspectives since they emerge from different paradigms. The literacy conceptualization which is linked to education emphasizes pedagogical theories and situates information literacy at the intersection of teaching and learning. Todd (2000b) views this as the literacy/learning lens. A number of definitions and conceptual understandings coalesce around this paradigm and these will be detailed in the chapter. Writers including Marcum (2002) believe that information literacy should address learning rather than information and posit that this is an appropriate paradigm for the concept and for practice. Researchers including Limberg (1999) are guided by this paradigm.

The literacy paradigm of information literacy is however challenged and contested by other broad approaches which focus on issues concerning the use of information within social contexts. Kaptizke (2003b) asserts that concepts which are focused purely on learning “fall short of adequately explaining and providing for present social, cultural and economic conditions” (p.53). She states further that without explicit recognition of the sociopolitical and ideological dimensions of information and
knowledge consumption and production, understandings of information literacy are potentially insidious (2003a). Kaptizke is one of many proponents (Andersen, 2006; Johnston and Webber, 2006; Todd, 2000b; Tuominen, Savolainen, & Talja, 2005) of an ‘information’ approach who call for repositioning understandings of information literacy within social, information environments. Pawley (2003) suggests that questions for understanding information literacy should focus on the social and institutional circumstances in which the concept works. Lloyd (2005) reiterates this when she calls for explorations and discourses of information literacy to be positioned in new social contexts which would extend students’ understanding and lead to lifelong learning. It is within this context that Marcum (2002) calls for a move away from literacy approaches to workplace competencies. Todd (2000b) argues that this move is not to deny the literacy paradigm but to acknowledge that information has relevance in people’s everyday lives. Socio-technical approaches to information literacy including workplace and everyday life understandings have therefore emerged.

**Competing definitions and underpinning frameworks**

Definitions of information literacy provide a useful entry point in understanding the multiple conceptions and espoused theories. Information literacy is generally understood by librarians as the development and acquisition of skills and attributes by the individual, which underpin effective learning in educational settings. This view according to Lloyd (2005) has been derived from librarians’ discourses of empowering and facilitating lifelong learning skills. Yet there are a range of other definitions and understandings of information literacy which contest this conception and which constitute
foundational espoused theories. The literature is indeed rich with a multiplicity of papers detailing this variation in understandings (Bawden, 2001).

**Behaviorist Tradition**

*IL as a set of skills and attributes*

The most pervasive definition of information literacy relates to the acquisition of skills. Librarians’ preoccupation with a skills approach to information literacy has its roots in the evolution of the concept of information literacy. While the evolution of a term is not important in and of itself, it often gives fuller meaning to the concept (Doyle, 1994). Information literacy cannot be understood without examining its evolution from library skills instruction and ideas of teaching and learning in libraries. A number of key events shaped the beginning of the process. Although the term information literacy was first used in 1974 by Zurkowski, it is the publication of the *American Library Association Presidential Committee on Information Literacy: Final Report* (1989) which gave rise to the pervasive and much quoted definition of information literacy

“To be information literate, a person must be able to recognize when information is needed and have the ability to locate, evaluate and use effectively the information needed. Ultimately information literate people are those who have learned how to learn” (p.1).

Another milestone in the foundation of information literacy was the publication of *Outcome measures for information literacy* (Doyle, 1992). This resulted from extensive research using the Delphi technique in which a group of representatives from 46 national organizations contributed to a comprehensive definition of information literacy as well as outcome measures for the concept. This research resulted in an expanded definition and the information literate individual is described via a “list” of discrete attributes.

An information literate person is one who:
- Recognizes the need for information
- Recognizes that accurate and complete information is the basis for intelligent decision making
- Formulates questions based on information needs
- Identifies potential sources of information
- Develops successful search strategies
- Access sources of information including computer based and other technologies
- Evaluates information
- Organizes information for practical application
- Integrates new information into an existing body of knowledge
- Uses information in critical thinking and problem solving (Doyle, 1992 p.2)

The behaviorist paradigm became formalized in approaches to information literacy as Doyle’s work also focused on the acquisition of skills as predominant outcomes. “The information user, to be described as information literate, must exhibit behaviors that demonstrate these abilities” (Bruce, 1997b).

Arising from the research and expanded definition by Doyle (1992), the American Library Association developed Information Literacy Standards for schools (AASL & AECT, 1998) and higher education (ALA, 2000). The Standards propose identifiable outcomes for information literacy instruction. Although intended as guidelines for practice, the ALA definition and the Standards (AASL, 1998; ALA 2000) have become manifestos in information literacy practice without being fully applied. While the ALA definition is clear that information literacy should be understood on a continuum from information access to effective use of the information, there has been a tendency to focus and highlight only some aspects of this. Locating and evaluating information have been emphasized to the almost exclusion of the use of the found information in constructing new knowledge. There is a corresponding focus on the behavioral skills and attributes identified in the Standards. In a survey of 356 academic libraries in the United States,
Coulter, Clarke & Draper (2007) found that 70% of respondents base their information literacy programs on the *Information Literacy Standards* (ALA, 2000). Unfortunately, most of the programs were developing only lower-order location skills in students. There was a focus on finding information and mastery of skills to the detriment of students’ engagement with information. Only between 20 and 40% of programs focused on higher order skills of synthesizing and intellectual application in information use. This skills approach reflects a surface approach rather than a deep approach where students make sense of information and develop personal understandings (Johnston and Webber, 2003). Limberg (1999) and Lupton (2002, 2004) point out that the less complex conceptions revealed in their studies are supported by the ‘list of skills’ approach to providing information literacy instruction. The authors suggest that rather than enhancing learning, the current efforts of information literacy programs limit the potential for student learning.

The focus on skills has contributed to what is referred to as the behavioral approach to information literacy. The behaviorist tradition posits that learning is the result of observable changed behavior with the learner displaying sequential skills and competencies.

Policy initiatives of information literacy in the United States showed parallel developments in Australia (Fafeita, 2006; Rader, 2002) and New Zealand (Kaptizke, 2003a) and the United Kingdom (Johnston and Webber, 2003). Information literacy is understood and explained as the process of equipping individuals with discrete competencies and skills and is defined by objectives and outcomes. This understanding has dominated the literature and is widely espoused.
Attempts at broadening this pervasive skills approach have led to information literacy being defined as an umbrella or meta-competency (Lloyd, 2003, 2005).

Information literacy is understood as the overarching term to describe the skills needed to use information and communication technologies (ICTs) effectively, and to access appropriate digital information resources (Wallis, 2005).

There are also current moves to redefine information literacy as *information fluency* (Gibson, 2007; Mackey & Ho, 2005; Mani, 2004; Sharkey, 2005; Stripling, 2007) in an effort to widen the definition to bring to the fore the blended nature of the concept to include information technology competencies and web literacy. Information fluency however, as a term is disputed since there are differing understandings. According to the Associated Colleges of the South (ACS), information fluency may be envisioned as the optimal outcome when critical thinking skills are combined with information literacy and relevant computing skills (2006). Mani (2004) claims that information literacy as a term is insulting and information fluency is more positive since the term suggests learning as a process. Stripling (2007) says that the term is accepted as a replacement for information literacy since students should not only know information skills but apply these skills.

Inherent limitations of this approach have been documented by Churchill (2003) and Harris and Millet (2006).

Information fluency seems at its most sophisticated in assisting learners to cross the transition between data and information. But the discussions do not reach to the further stages at which higher education surely must do its work, the development of understanding and wisdom (Churchill, p.216).

Harris and Millet (2006) further explained that the focus in fluency discussions might impede student learning. “Hierarchical, linear constructions of learning set forth by fluency advocates, demand static beginning and end points that focus more on evaluative
measures than student learning. The authors ask important questions which are particularly helpful in bringing closure to the discussions: What makes information fluency different when compared to information literacy? Responses from a survey by Harris and Millet suggest minimal differences in definitions and major problems of information fluency on conceptual and practical levels.

Further, the views of information fluency retain the approach of information literacy as a prescribed set of skills linked to a behavioral understanding.

**Critiques of and alternative definitions to the behaviorist, skills approach**

The traditional behaviorist, ‘list’ approach to information literacy has come under much criticism for a number of reasons which coalesce around it being “reductionist” in nature. Information literacy is operationalized as mastery of generic skills relating to information sources. The approach encourages a mechanistic approach to learning (Meola, 2004); reduces information literacy to a set of discrete skills (Swanson, 2004), is built on a deficit model (Green & Macauley, 2007; Kaptizke, 2003a, 2003b; Norgaard, 2003, Todd, 2000a, 2001), it lacks a critical element in which assumptions of information are called into practice as it reduces information literacy to mere ‘performative’ or functional skills (Simmons, 2005) as well as “a shopping list of transferable skills” and reflects a surface learning approach which fails to engage the students at anything but the most superficial level, rather than deep learning (Webber & Johnston, 2000). Bruce (1997b) asserts that the skills approach describes characteristics of individuals rather than the relations between people and their information environments.

Other writers including Andersen, (2006), Kuhlthau, (2004), Lloyd, (2005), Norgaard, (2003) and Todd, (2000b) are representative of a growing cadre of researchers and practitioners who challenge this dominant skills-oriented behavioral view as it
reduces meanings and understandings of information literacy. The literature examined also confirms that there is an outpouring of articles discussing alternative ways of defining and understanding information literacy. A number of these definitions are grounded in theoretical frameworks employed via research studies. These are also depicted in Figure 4 for example, IL as effective utilization of information is linked to the theoretical framework of Information Intents by Todd (2005) and IL as a complex array of experiences emerges from the relational framework and research of Bruce (1997a, 1997b).

**Constructivist traditions**

*IL as knowledge construction*

The constructivist/ knowledge building view of information literacy, challenges the behavioral approach. This view of information literacy is guided by a constructivist theoretical framework and drives much of the conceptual literature (Allen, 2008; Marcum, 2002; Swanson, 2006; Thompson and Cronje, 2001). A constructivist approach to teaching and learning holds that the learner, through interaction and experience with an object or process, creates knowledge (Allen, 2008). Rather than equipping persons with abilities, information literacy is explained and defined as a process of individuals engaging effectively with information to construct knowledge for specific purposes in various contexts. Individuals are seen as making sense of their information world and constructing new knowledge with found information. The definition has been tested and confirmed by a growing number of research studies in information literacy and student learning environments that have applied constructivist theoretical frameworks. Kuhlthau’s research (1988, 1990, 1993) is guided by constructivist theoretical approaches
and the Information Search Process, ISP is developed within this framework. Researchers (Gordon, 2000a; Harada, 2002; Hyldegard, 2006; Kuhlthau & Tama, 2001; Limberg, 1999; Todd, 2006; Todd & Kuhlthau, 2004a, 2004b) using the ISP as a model, draw on constructivist approaches. Interventions are understood not simply as strategies for assisting with developing skills but as enabling the construction of new knowledge and understanding.

**IL as a process of seeking meaning**

Utilizing a constructivist framework, Kuhlthau (2004) proposes a process approach to explaining and understanding information literacy. She says that information literacy instruction should be structured around a process approach to teaching rather than the transmission approach of the model.

Students should be actively involved in the process of constructing meaning in an information rich environment. [They] should engage in issues and projects that involve them raising questions, seeking information from a wide variety of sources, changing their questions as they learn, identifying what they need to know more about, demonstrating what they have learned, sharing their new understanding with a community of users (2004, p.163).

For Kuhlthau (2004), information literacy should involve a process of knowledge construction. Norgaard (2003) confers that a process approach is needed to dispel the misconception that information literacy manifests itself in the way citations are used in a final paper. Information literacy should be conceived of as a recursive process to negotiate meaning. Kuhlthau developed the Information Search Process (ISP) from empirical qualitative and quantitative research over a long period as a theoretical framework for explaining the process of information use. Further, Kuhlthau’s seminal research (1988, 1990, 1991, 1993, 1994a, 1995) in the search process in libraries and the
information seeking behavior of students was foundational in advancing the concept of information literacy and pointed directly to the connection between students’ success and information literacy instruction. The ISP depicts information seeking as a process of construction. Cognitive, affective and physical tasks are described in six stages: initiation, selection, exploration, formulation, collection and presentation. The model emphasizes knowledge construction, meaning making, collaborative behavior and critical thinking which are foundational to information literacy. Kuhlthau (2004) says that students should be involved in creating what Bruner (1960) calls products of the mind.

Kuhlthau’s approach to information literacy is also rooted in the socio cultural learning theories of Vygotsky (1978) which coalesce around major themes of social interaction and collaboration. For Vygotsky, real learning is situated only in specific cultural environments where there is interaction with cultural artifacts and with other humans. Meaning is constructed through this social interaction and meaning is fundamental to constructing new knowledge. According to Mahn, (1999) Vygotsky used the concept of Zones of Proximal Development (ZPD) to differentiate between two levels of learning and development and this has implications for how teachers support students learning needs. The concept of the ZPD generally exemplifies Vygotsky’s concern with assistance during instruction. Kuhlthau (2004) extends the ZPD concept to what she calls “zones of intervention” which are areas in which a learner can do with guidance and assistance what he or she could not do alone” (p.129). Kuhlthau postulates that uncertainty in the information search process indicates a zone of intervention for librarians, information professionals and information system designers. Through information literacy instruction, librarians can guide students in the zones of intervention.
Recent work in Guided Inquiry (Kuhlthau, Caspari, & Maniotes, 2007) builds on the Information Search Process model and provides an instructional framework within a knowledge-based environment that is applicable to information literacy interventions.

![Figure 2.1 Model of the Information Search Process (Kuhlthau, 2004, p. 82)](image)

**IL as enabling learning via instructional strategies**

The constructivist paradigm of learning and Vygotsky’s sociocultural learning theories impact other educational perspectives of information literacy. There is a focus in the literature on educational strategies, which should assist students to construct knowledge. Bruce and Candy (2000) posit that if information literacy can be considered a way of learning about ways of using information, then it becomes a way of working with information that can be encouraged or discouraged by particular learning activities. Information literacy is therefore understood and explained as enabling student learning via theory-based strategies and interventions which enable students to construct new knowledge. Some strategies put forward as enabling this include the use of concept maps.
as scaffolds (Gordon, 2000a), critical pedagogy (Elmborg, 2006; Simmons, 2005); evidence-based teaching (Todd, 2001) and guided inquiry (Kuhlthau, Caspari, & Maniotes, 2007; Todd & Kuhlthau, 2004a, 2004b). Information literacy should be about scaffolding learning. Within these environments information literacy is defined as “the intellectual scaffolds for effective utilization of information in all its forms (electronic, print, popular culture) and for constructing sense, understanding and new knowledge” (Todd, 2004, slide 40).

**Critical theories**

*IL as enabling critical thinking*

Other educational understandings of information literacy which permeate the literature are tied to this broad espoused understanding of information literacy. Information literacy is defined as developing critical thinking and enabling change in mental models.

Critical thinking is a foundational value in information literacy. The guiding conceptual framework used in information literacy practice in academic institutions, the ACRL *Information Literacy Competency Standards for Higher Education*, declares “critical discernment and reasoning” as essential components of information literacy (ALA 2000, p.3). There are multiple views on what is entailed in critical thinking but the discourses challenging the traditional view call for critical ways of both conceptualizing and practicing information literacy and propose for repositioning IL as critical information literacy (Doherty & Ketchner, 2005; Elmborg, 2006; Reed & Stavreva, 2006; Reece, 2007; Simmons, 2005; Swanson, 2004). Critical information literacy according to Kaptizke (2003a) would broaden analysis to sociopolitical ideologies.
These views are rooted both in critical thinking theories (Ennis, 1985, 1996; Facione, 2007; Paul, 1990) and in critical pedagogy. Albitz, (2007); Elmborg (2006) and Reece (2002) advocate for new critical approaches and methodologies for information literacy education. Instructional strategies suggested include source analysis which employs the use of questions that allow students to reach their own conclusions about the validity of a source, reasoning and argumentation, problem based learning, concept teaching, critical information pedagogy, student centered approaches including collaborative learning, inquiry learning, and scaffolding strategies which assist students to reflect on and regulate their own learning. Whitmire (2001) and Johnston and Webber (2003), propose that definitions of information literacy should reflect the critical approach to interrogating with information.

Research studies by Strege, (1996) and Whitmire (2001) confirm the relationship between information literacy and critical theories. Works by Gordon (2000b), Grassian (2001), Burkhardt (2003), and Thomas (2004) include practical guides with lesson plans for enhancing critical thinking in information literacy instruction. Andretta (2005) also explores information literacy from the practitioners’ perspective and speaks to the need to move IL beyond the generic skills development to critical thinking.

**IL as social construction**

Also operating within the constructivist paradigm are definitions and views of information literacy that are guided by socio-constructivist theories. Some of these understandings explain information literacy in social contexts beyond classroom settings but impact educational understandings of IL. Social construction emphasizes the importance of context in the construction of knowledge. Learning is seen as a social
process. Vygotsky (1978) laid the foundation for understanding learning and knowledge construction within social contexts with his theory of the Zone of Proximal Development. However, other applications of social construction theories have sought to explain information literacy. Andersen (2006) applied the theory of the public sphere to her discussions of information literacy as sociopolitical skills. “Information literacy is to have knowledge about information sources and that searching and using them is determined by an insight into how knowledge is socially organized in society” (p.213). It is an understanding of society and its textual mediation. Tuominen, Savolainen and Talja (2005) situate their discussions on information literacy as sociotechnical practice within a constructivist framework that advocates for learning in social and cultural contexts. For them, “knowledge and meanings are built through dialogue and debate” (p.337). The authors suggest that information literacy understandings should move beyond information seeking and using skills and “account for how individuals interact with other people and technical artifacts” (p.329). The traditional view of information literacy is replaced by information literacy as sociotechnical skills which involve a complex interplay of social relationships, sociotechnical configurations and work organizations. Tuominen, Savolainen and Talja (2005), advocate that the practice of information literacy education cannot be seen outside of knowledge domains and organizations in which skills are used.

Lloyd (2006, 2007) also uses a social constructivist theoretical framework for her research on the information literacy of firefighters. She explains information literacy as a way of “knowing”, that is more than just the acquisition of skills and attributes.

It is a process of becoming embodied within the specific discourses that characterize context. The process is facilitated by the discursive practices of the
experienced members of the community of practice, who have a vested interest in ensuring that newcomers come to develop an understanding and meaning about practice in similar ways” (Lloyd, 2007, p.197).

These views and understandings of information literacy challenge the traditional skills approaches and underscore the complexity of the concept and the need for varied approaches to practice.

**IL as making sense of varied information needs: Sense-making**

The Sense-Making methodology and theoretical framework of Dervin (1992, 1999), also rooted in a constructivist tradition, has also guided understandings of information literacy. Sense-Making challenges the deficiency approach of information, as it assumes that there is a human need to create meaning and that knowledge is constructed rather than received. Information use is seen as construction. Sense-Making suggests that it’s more useful to speak of gaps (rather than deficiencies) that people have and the need to bridge these gaps to make sense of their situations. Dervin (1999) posits that Sense-Making focuses on the “hows” and less on the “whats” of how people bridge gaps in their information need and knowledge building and suggests a variety of ways. Cheuk (1998a, 1998b, 2000) employed Sense Making as a theoretical framework and as a methodology to guide her research and found that the traditional view of information literacy as linear and homogenous was confronted with workers seeking to make sense of their information needs in a variety of ways. Common and vastly different strategies were identified. Information literacy was seen not only as critical evaluation of sources and systems, but as collaborative competence and an iterative process rather than a rigid step by step approach. This means that there may be multiple outcomes; even contradictory ones to the process of information use. Cheuk redefined information literacy as going
through an information seeking and use process to acquire new meaning and understanding (2000).

**Derivatives of the major paradigms**

**IL as effective use of information for a purpose**

The process view of information literacy drives other definitions identified. These definitions coalesce around information literacy having individual meaning based on real needs and different contexts. There is a concurrent move to rethink what Todd (2000b) calls the “one-size-fits-all approach” to information literacy where individual meaning and contexts are compromised with the prescriptive behavioral approach. Information literacy is understood as the meaningful use of information within context and within this approach, Todd, (2000b) declared information literacy as enabling the purposeful utilization of information to some effect. In essence it means that it may no longer be useful to consider information literacy as a “characteristic of learners” (Bruce & Candy, 2000, p.7). Information literacy is also understood as the relationship between an individual and his construction (or understanding) of the information task at hand (Candy, 2000).

**Other definitions and theoretical frameworks**

**Relational paradigm: IL as a complex array of experiences**

Many research studies exploring the varying ways people use information, have applied the relational model derived from Bruce’s seminal research (1997b) and subsequent papers, (1997a, 1999). Bruce (1997b) used phenomenographic methods to identify different ways in which people experience information literacy. The relational view places users of information within their environments. “Studying information
literacy from the viewpoint of people…is the first step towards a relational view of information literacy” (1997b, p.39). Bruce’s initial research proposed different experiences of information literacy through seven lenses of information technology, information sources, information process, information control, knowledge construction, knowledge extension and wisdom (Figure 3). Descriptions of these conceptions or experiences reveal variations in how people interact with information and the meaning of information literacy is derived from these varying interactions. The relational approach therefore offers an alternative understanding of information literacy as a complex array of experiences. It rejects the notion that information literacy means a single approach as highlighted in the behavioral, skills approach. It therefore promotes varying approaches to enabling information literacy. A conceptual paper introducing six frames of information literacy education underscored the need for varying approaches to teaching (Bruce, Edwards & Lupton, 2006). Bruce sought to develop a framework for the implementation of the relational approach to information literacy.

Figure 2.2. Seven experiences of information literacy (Bruce, 2007)
The phenomenographic method of research employed by Bruce (1997b) has been used in a number of extensive and small research studies which confirmed that there are varied ways of viewing information literacy. Using aspects of the Bruce model, Catts (2005) identified varying conceptions to information literacy among college students. Statistical analysis confirmed that information literacy is a coherent concept and there were identifiable and distinguished understandings. Limberg’s (1999) extensive research investigated variations in the ways students experienced information seeking and use. Her research indicated that people’s ways of using information is directly related to the content of the information. Maybee’s (2006, 2007) research investigated the conceptions of information literacy held by graduate students and found varying conceptions of information use including building a knowledge base for various purposes and initiating a process. Maybee built on earlier research by Limberg (1999), Bruce (1997b) and Lupton (2004) and found similarities in findings which supported the phenomenographic premise of limited variations in the way people experience a phenomenon. Within the workplace, McMahon and Bruce (2002) found five related yet different understandings of information literacy needs among workers on cross cultural development projects. Boon, Johnston, and Webber (2007) identified varying conceptions of information literacy among English faculty in the United Kingdom.

Andretta (2007b) believes that the phenomenographic and relational perspectives are appropriate conceptual frameworks for information literacy since they move understandings of IL education from “what” to “how”, a focus on process rather than content. Webber and Johnston (2000) posit that the findings of their research using a
A relational approach should result in educators adopting teaching methods that allowed students to experience information literacy in more complex ways.

**Information seeking and use research findings**

Research findings of studies on information use also add to the varied conceptual understandings of information literacy. Research aimed at understanding the varying ways people seek for and use information have direct implications for guiding frameworks for information literacy instruction.

**Multiple approaches to information use**

Studies not using a relational approach have also identified the different and sometimes competing approaches to information use. As early as 1995, Pitts found that a “learning experience is composed of a variety of intertwined learning strands” (p.177). Students learn in various ways and learning is impacted by the subject matter being taught and their prior knowledge.

Todd’s pioneering work (1999) using a cognitivist approach, found that adolescents had varying ways of engaging with information about a drug, heroin. He identified five types of cognitive information use, namely ‘get a complete picture’, ‘get a changed picture’, ‘get a clearer picture’, ‘get a verified picture’ and ‘get a position in the picture’. In a later research study with middle and high school students, Todd (2006) also established that students had different ways of constructing knowledge. Two distinct changes in knowledge were identified, an additive approach to knowledge construction and an integrative approach in which students manipulated the information to build positional statements. He called for fundamental shifts in instruction, moving beyond helping students to find information to helping them engage in critical ways to build
knowledge. It is this research that enabled Todd (2000b) to offer alternate approaches and a reframing of the definition of information literacy as effective utilization of information for a purpose. Information literacy is seen as making a difference in people’s everyday life experiences, enabling them to solve real world problems. Guiding this definition is Todd’s theoretical model, Information Intents which builds on information utilization and assumes the active creative role of the user for knowledge conversion, adaptation, reformulation or invention (2005). The model focuses on what people in a range of situations do with the information they seek and rests on the assumption that information has the potential to influence, to make a difference to thoughts, actions and emotions. Research by Todd and Kuhlthau (2004a, 2004b) applied the theory and the critical role of the school library and the librarian were portrayed in how students utilized information for knowledge construction. Todd’s research and conceptual understanding of information literacy confirmed that information literacy instruction must focus on both the locating and subsequent use of information.

Heinström’s (2006b) research found three dominant approaches to Internet information seeking: fast surfers, broad scanners and deep divers. The author states that these three typical information seeking styles “could be depicted along a dimension of exploration versus specificity” (2006a p.1448). Information literacy education aspires to create a universe of only deep divers. Yet Heinstrom’s research suggests that it is more important to be sufficiently flexible to allow all three types of searchers to develop and enhance their skills (Markless & Streatfield, 2007). Edwards (2006) qualitative research with university students also identified four distinct ways of information searching and learning.
Figure 2.3 represents this researcher’s understanding of the diversity of definitions of information literacy and some of the theoretical frameworks that appear to underpin these conceptualizations.

**Foundational Beliefs about Practice**

Definitions, corresponding theoretical and methodological frameworks of information literacy are sometimes intermingled with foundational beliefs and principles of practice. These add to the complexity of the concept and its implementation in practice. Part of the challenge for information literacy practice in academic institutions is a focus on the meeting of standards and varying approaches to the integration of
information literacy education within academic curricula. This section will address these issues.

**Information literacy standards and guidelines**

**IL as defined outcomes**

Standards assist in clarifying aims behind a concept but they become more important since like definitions, they are guides to practice, rules of conduct, in a field. Professional guidelines and standards also offer conceptual understandings of information literacy. The *Information Literacy Competency Standards for Higher Education* (2000) is sometimes viewed by practitioners as a mantra for effective information literacy instruction. In a survey of 356 academic libraries in the United States, Coulter, Clarke and Draper (2007) found that 70% of respondents based their information literacy programs on the *Standards* (2000). Johnson and Jent’s (2004) review of library instruction and information literacy in 2003, noted the prominence of the ACRL standards and the American Association of School Libraries, (AASL) *Information Power* standards in studies and research papers. In a conceptual paper on a model for federated searching and information literacy, Labelle (2007) presented the Standards as providing a framework for developing an integrative instructional model. This is echoed by MacDonald, Izenstark, Gallagher, Kinnie and Larsen (2006) who state that the ACRL *Standards* are “the gold standard for academic libraries who teach information literacy” (p.472). Moniz (2007) refers to the Standards as the blueprint for higher education’s integration of information literacy. For Aydelott (2007) the *Standards* “provide a means to negotiate the universe of information by presenting broad standards and performance outcomes by which to manage our desire to present all we know to our audiences” (p.22).
**Characteristics of programs of information literacy that illustrate best practices:**

*A guideline* (ALA, 2003a) is another publication which identifies and describes features notable in information literacy programs of excellence. Hunt and Birks (2004) state that based on their experience, information literacy program developers and practitioners need to be cognizant of the publication to ensure success in developing programs. Best practice features include having a mission, articulated objectives, articulation with the curriculum and collaboration among teaching faculty, librarians and other program staff.

**IL as collaborative instruction and curriculum integration**

The basis of critical thinking in information literacy instruction rests on the premise of another value of information literacy, that of collaboration between librarians and academic faculty for the goals of curriculum integration and disciplinary teaching. “Achieving competency in information literacy requires an understanding that this cluster of abilities is not extraneous to the curriculum but is woven into the curriculum’s content, structure and sequence.” (ALA 2000, p.5). To be effective therefore and particularly in enhancing critical thinking, information literacy instruction cannot be done in isolation but must be integrated in academic courses. Collaboration between faculty and librarians is therefore foundational for effective information literacy and the transfer of critical thinking (Macklin & Fosmire, 2004).

Differences in understandings among subject disciplines are also at the heart of discussions on instructional collaboration in information literacy and developing critical thinking. Disciplines have different epistemological structures, and therefore the research process is not identical across disciplines. In his seminal work on the role of meaning in human nature and understanding, Phenix (1986) posited that an understanding of the
patterns or structures in the disciplines is essential for the guidance of teaching and learning. Grafstein (2002) says that the way in which knowledge is organized in different disciplines including the scope of research questions, the kind of criteria that can be used to evaluate claims critically, and the sources researchers consult calls for discipline-based approaches and collaborative endeavors. Critical thinking therefore does not happen in a vacuum. Monteil-Overall (2005) suggests that an underlying assumption of collaboration between librarian and faculty is the co-construction of meaning and knowledge.

The *ACRL Information Literacy Competency Standards for Higher Education* (ALA, 2000) confirms that the goals of information literacy would be accomplished through collaboration. According to Iannuzzi, “Information literacy incorporates conceptual, technical and critical thinking skills. Information literacy is more than library instruction, and requires an additional involvement that extends far beyond the library” (1999, p.304).

**Summary: Conceptualizations of information literacy**

The review of the conceptual and research literature of information literacy indicate that multiple and competing definitions, varied theoretical approaches, and research findings, intermingled with foundational values and principles of practice result in contradictory and complexity in understandings of information literacy. These differences in understandings were highlighted as a means of determining whether they predicted the varying approaches to professional practice. The research asked if and how this range of understandings is reflected in professional implementation of information literacy. According to Bruce (2000) theoretical positions determine learning strategies employed. She asserts
If we believe learning is about seeing the world in particular ways, then one important aspect of learning to be information literate is coming to see information literacy in particular ways. If on the other hand, we believe that learning is about being able to demonstrate a particular skill set, then learning to be information literate is about being able to demonstrate a particular skill set and that is what will be assessed” (p.100). Theory of action (Argyris and Schön, 1974) provides an appropriate framework for understanding possible relationships between these conceptions and practice.

2.2 Theory of Action: Espoused Theories and Theories-in-use

Overview

The theory of Argyris and Schön (1974) provided a guiding framework for the research in information literacy. In theory of action, contrasting theories of action are explicated, namely theories-in-use and espoused theories. The authors explain that when someone is asked about their behavior in a particular situation, the person usually responds with an espoused theory of action for that situation. This theory involves intentions and is communicated to others. However what determines people’s actions are their theories-in-use. Argyris and Schön conclude that persons should not simply be asked about their theories-in-use. Theories in use must be inferred from an examination of behavior and representations of action. Action theory provides a detailed framework for explaining relationships between what can be observed in people’s actions and their beliefs about those actions. “Theories of action are the master programs, governing variables, values, theories, beliefs, concepts, rules, routines, policies, practices, norms or skills that underlie actions (Action Science, 2007). Argyris and Schön use the term theories, not in the sense of physical theories or general principles but as “vehicles for explanation, prediction or control” (p.5). These types of theories are explained.

An explanatory theory explains events by setting forth propositions from which these events may be inferred, a predictive theory sets forth propositions from
which inferences about future events may be made, and a theory of control describes the conditions under which events of a certain kind may be made to occur. In each case the theory has an “if…then…” form (1974, p.5).

In evaluating theories of action, Argyris and Schön (1974) propose questions which are useful in interrogating espoused theories and theories-in-use. These questions were found to be appropriate also in guiding the research on information literacy: Are the theories internally consistent? Is there congruence between espoused theories and theories-in-use? Are the theories effective? Internal consistency relates to the governing variables or essential aspects of a theory. Congruence means that one’s espoused theory matches one’s theory-in-use, i.e. one’s behavior fits the espoused theory of action. A theory-in-use is effective when action according to the theory tends to achieve its governing variables, i.e. what it sets out to do. Smith (2001) notes that a person’s or organization’s theories of action are subject to a variety of dilemmas that relate to the gap between espoused and in-use theories. He identifies the potential for incongruities between espoused and in-use theories and the potential for inconsistencies among the actions that comprise one’s theory-in-use.

Initial research by Argyris and Schön (1974) used case studies in a range of educational settings to test effectiveness of theories-in use as well as the relationship between espoused theories and theories-in-use. Various methods were used to analyze the cases and an emerging model of theories-in-use was developed. All comments that provided information about governing variables of theories including participants’ beliefs, goals, concepts, and action strategies used, were recorded. Transcripts of tape recorded group discussions, comments from, and dialogues with participants as well as action strategies, were also analyzed. Generalizations were developed from the analysis
of the case studies. Findings emerging from the research conducted suggested among other things that “…most of the inferences about participants’ theories-in-use run counter to their espoused theories” (Argyris & Schön, p.66). The authors proposed corrective reflective action as a possible measure to address this dilemma, not only to amend specific behaviors associated with theories-in-use, but to also adjust the theory-in-use, perhaps to bring it more in line with the corresponding espoused theory. Such reflective action is referred to as “double looping” which entails reflecting not only on whether the theory-in-use is effective (as in accomplishing goals), but also whether theory-in-use is compartmentalized from espoused theory when there are inconsistencies (Federman, 2006). Reflective learning is promoted by Argyris and Schön (1974) as a means of understanding both internal and external dimensions of professional practice. Detection and correction of dilemmas between espoused and in-use-theories is foundational to theory of action and the work of Argyris and Schön. In double-loop learning, governing variables, policies, goals, plans and action strategies should be questioned and subjected to critical scrutiny to achieve overall effectiveness in practice. Single-loop learning in contrast is present when values and goals are taken for granted and the emphasis is on techniques and making techniques more efficient (Usher & Bryant, as cited in Smith, 2001).

Argyris and Schön (1974) created models of theories-in-use to “describe the complex range of micro theories-in-use by members of society” (p.37). Theories-in-use, the authors say, are complex and these models are general characterizations of how theory applies to human interactions. Model I reflects the behavior of many professionals studied by Argyris and Schön. The theories-in-use of these individuals are considered
self-sealing. These individuals are adept at defining goals and are focused on achieving them without developing definitions of purpose of these goals with others. These participants believe that public testing of assumptions is risky and that changing goals would be a sign of weakness. Single loop learning is evident in Model 1. Argyris and Schon found that most professionals in their study employed single loop learning. An alternate theories-in-use framework, Model II is presented by Argyris and Schön to counteract the negative effects of Model 1. Participants in this Model tend to test publicly the assumptions of their theories-in-use and tend to be open to possibilities for change in behavior that may result from that testing. Constant reflection on and monitoring of practice is an important aspect of Model 2. The aim is to identify valid information which makes “dilemmas recognizable and which creates tension to resolve them” (Argyris & Schön, 1974, p.97). Double loop learning forms the basis of Model 2 theories-in-use Tagg (2007) posits that the first step toward double-loop learning is to shine a light on what matters, the values built into an institution’s operations.

This study on information literacy was guided by this foundational premise of the framework of Argyris and Schön (1974), that is, that deep reflection on institutional values may address challenges and dilemmas in institutional practice. Theory of action also advocates for the public testing of knowledge claims of communities of practice (Argyris, Putnam, & Smith, 1985). This research addressed the challenges identified in information literacy practice through an investigation of institutional practice.

**Research guided by Theory of Action**

The theoretical frameworks of Argyris and Schön (1974) have guided research studies and discussion literature in a range of disciplines and professional fields. The
pervasive theme in these studies relates to the dilemmas and tensions between philosophy or guiding principles and professional practice in these fields. This section examines studies from varied professions and fields of study, with an emphasis on research in educational environments and explores the tradition of espoused theories and theories-in-use. These studies provided insights and directions for the research on information literacy conceptions and practice.

A landmark detailed meta-analysis by Kane, Sandretto and Heath (2002) critically reviewed research studies on teaching beliefs and practices of university academics in relation to espoused theories and theories-in-use. The research examined “the relationship between what teachers say they wish to achieve and what they do in the university classroom” (p.184). In an analysis of over 50 research studies, the authors identified effective research methodologies for investigating relationships between beliefs and practice, theoretical frameworks employed highlighted effective studies as well as strengths and weaknesses of individual studies and offered suggestions for future research. The analysis compared methodologies used by researchers to gain access to espoused theories of action and theories-in-use including, concept maps, interviews, think aloud protocols, direct observation, recall interviews and document analysis.

The study by Kane, Sandretto and Heath (2002) was very important in guiding the process of this research as it revealed that as a result of ineffective methods employed in some research studies, espoused theories of academics were not distinguished from the theories-in-use. A few studies included several unsupported claims about university academics’ teaching practice as these claims were based primarily on espoused values of the academics, i.e. what these academics say about their practice. Kane et al. contend
that without observation of what constitutes practice, these research studies are at risk of “telling half the story” (p.177). The full story of theory of action involves both listening to and observing what constitutes practice. The authors highlighted ineffective design features of some studies; the potential problem with the use of surveys, questionnaires and multiple choice type inventories as methods to gather data about conceptions and beliefs as these fall prey to a “self-fulfilling prophecy” (p.197); and the failure of researchers to make explicit the epistemological and theoretical frameworks that guide their research. The study also detailed effective research strategies including the use of multiple data sources and research methods which enhance trustworthiness in qualitative research. The authors concluded that theory of action offers an avenue to gain understanding of professional practice among teachers. The study also reinforced the need for research that enables teachers and other professionals to make explicit their own theories-in-use and to interrogate these in light of espoused theories and intentions. The complexity of teaching was underscored and the need to explore both espoused conceptions and actual teaching practices.

Theory of action was also applied to the important issue of assessment in education in studies by Willis (1993) and Orrell (2006). Research by Willis sought to “identify inconsistencies between espoused theories of learning expressed in many policy statements and the theory that actually informs assessment practice” (p.383). The author argued that the rhetoric of curriculum reform in education and references to lifelong learning is meaningless unless assessment in practice reflects similar theoretical principles. In a detailed analysis of theoretical frameworks of learning and assessment, Willis (1993) identified and presented a holistic view of learning as espoused by teachers.
These views of learning were juxtaposed with assessment methods used by teachers and inconsistencies were found. Willis concluded that “technicist” assessment models are at variance with the espoused theory of learning. The author called for a compatible theory to allow for more congruence between theory and practice.

Addressing the issue of feedback on performance assessment, Orrell’s (2006) comprehensive research study reports on academics’ written feedback on students’ papers, and compares this with the same academics’ personal, practical espoused theories and practice about feedback. Very little congruence was identified between behavior and beliefs regarding the importance of responding to students. The author concludes that glaring contrasts between espoused beliefs and practice may have resulted from practices learnt on the job. Orrell concluded that

Teacher behavior is influenced by the necessity to grade students’ learning outcomes. Justification of the behavior, however sound, become reified over time and steeped in tradition if not subjected to critical scrutiny. While assessment is significantly influenced by political and economic agendas as well as entrenched and powerful social expectations, ultimately it is teachers’ actions which determine its practice (2006, p. 455)

Using the framework of the reflective practitioner advocated by Argyris and Schön (1974), Quinn (2003), reported on a program in a South African university in which academics were encouraged to reflect on their espoused beliefs and values on teaching and learning in their disciplines. These academics were asked to think critically about what they did and why they did it, evaluate what they did and ways of improving their practice. According to Quinn, the program was developed on the premise that the process of examining theories underlying practice could make more explicit the links between disciplinary research and the teaching of the disciplines. The author felt however that the social changes that were taking place in South Africa at the time might mitigate
the development of theoretical and philosophical understandings of learning. He identified contradictions between what may result in practice because of the social context and what was espoused as important to teaching and learning.

Gall’s (2001) conceptual paper on the implications of theory of action for teacher education states that the theory provides a good conceptual framework for understanding and improving teacher education and classroom instruction. The author confirmed the need to examine beliefs about performance as these beliefs may lead to ineffective practice. On the other hand the beliefs might be sound but not realized in their practice. Without reflective skills for improving practice, teachers could get stuck in self-sealing theories and mediocre performance. Beliefs and performance of teachers come from a variety of sources. To improve beliefs and performance, there is a need to understand their sources.

Of particular note is a sharp critique of Argyris and Schön’s theory of action in guiding reflective practice in nursing (Greenwood, 1993). The author noted that there is evidence to suggest that nurses’ espoused theories and theories-in-use may be discrepant. However she advocated that espoused theories and theories-in-use may differ but be compatible since

…theories-in-use of real-world situations are constructed in and through repeated exposure to such real world situations. Their [theories-in-use] function is to render subsequent experience of the same or similar situations meaningful and manageable (p.1184).

The author further noted that “names and frames which are learned in practicum situations, i.e. those clinical situations which are relatively free of pressures, distractions and risks, in order to structure similar practicum situations may be less than adequate
when real situations are encountered” (p.1186). In nursing therefore both types of theories of action i.e. theories-in-use and espoused theories are triggered and deployed by particular environmental cues and these should be accounted for in discussions.

The paper by Greenwood (1993) confirmed the importance of context and the complexity inherent in studying espoused theories and theories-in-use. According to Greenwood, manipulation of theories-in-use and subsequent reflective actions should take place within the appropriate context. The paper suggests a potential inadequacy of one aspect of the theoretical framework of Argyris and Schön (1974) in evaluating practice in nursing, that of congruence and compatibility between espoused theories and theories-in-use. However, according to Argyris and Schön, “there is no particular virtue in congruence alone. An espoused theory that is congruent with an otherwise inadequate theory-in-use is less valuable than an adequate espoused theory that is incongruent with the inadequate theory-in-use, because then the incongruence can be discovered and provide a stimulus for change” (p.23). Argyris and Schön underscore the complex range of theories-in-use and propose that different models should be put in place to accommodate this complexity. Although presenting merit in understanding the value of what the author calls real-world theories-in-use, the paper by Greenwood does not undermine the worth of the theoretical framework of espoused theories and theories-in-use in addressing issues of philosophy and practice.

**Summary: Theory of action**

The composite findings of the research in these professional environments confirm initial findings of Argyris and Schön (1974) that there are inherent dilemmas between espoused theories and in-use-theories in professional practice. The dilemmas identified in
the research review include: (a) contradictions between practices learned on the job by professionals and the espoused beliefs of the community, (b) inconsistencies between widely accepted theories and policies and actual practice associated with the theories, (c) social and contextual conditions and traditions influence practice rather than accepted beliefs, and d) practice of professionals ran counter to their own espoused beliefs.

Methodological approaches used and artifacts studied also influenced methods used in this research. These include indepth analysis of documents representing both policy and practice and the utilization of qualitative approaches.

The relevance of theory of action as a theoretical and methodological framework for the research on information literacy in academic institutions was consistently demonstrated throughout this research.

2.3 Mission Statements as Sources of Espoused Theories

An exemplar of espoused theories is the organizational mission statement. The mission statement is an institution’s formal, public declaration of its purposes and its vision of excellence (Meacham & Gaff, 2006; Stober, 1997). Research by Hardesty, Hastreiter and Henderson (1988) suggested that much importance is assigned to mission statements by professional associations, accreditation agencies and the literature on higher education. The authors found that although several terms such as mission, purpose and goals are used interchangeably, the “mission communicates the overarching fundamental purpose of an organization” (p.12).

This research on information literacy focused on the mission statement as the main conveyor of values. Stober (1997) suggested that the importance of missions may relate to the idea of a mission statement defining one institution from another. Mission
statements and other similar documents frequently articulate the long term philosophy and aspirations of an organization and define the future direction (Begum, 2006). While a number of research studies and discussion papers confirm that mission statements are primary conveyers of espoused values and beliefs, there is little consensus among the studies on the relationships between mission statements and organizational practice and performance. Despite this seeming inadequacy in the literature, this section examines research studies and discussion papers which explore the role of the mission statement in different organizations particularly academic institutions including the academic library.

The review of the literature also identified varying research methodologies used in these research studies ranging from surveys, questionnaires to detailed content analysis which support methodological approaches used in this research on information literacy in academic libraries.

In a meta-analysis of methodologies used in mission statement research, Desmidt and Heene (2006) found that the mission statement had become one of the most popular and widespread management tools. Content analysis of 63 research articles covering 20 years of mission statement research indicated that the academic literature supported the claim that mission statements produce organizational benefits and contribute to the overall performance of the organization. In addition the authors found mission statements equally important in a variety of organizational types from small and large and profit and non-profit. Survey instruments dominated the research field and most of the articles were descriptive rather than developing or testing theories. Desmidt and Heene urged for more focus on developing conceptual frameworks and a broadening of the scope of the research on mission statements.
This research on information literacy expanded the research on mission statements as it explored the mission statements of academic libraries as conveyors of espoused theories. No similar research on the academic library community was identified.

A similar, yet less ambitious study than the Desmidt and Heene (2006) study was conducted by Smith, Heady, Carson and Carson (2001) to provide a comprehensive review of published empirical studies on mission statements and to explore relationship between mission statement content and organizational longevity. The research identified seven unique streams of mission statement research including those examining the relationship between performance of firms and mission statement content. The evidence was generally inconclusive and the authors could not confirm any positive link between espoused values in mission statements and theories-in-use as seen in organizational performance levels. Research by Bart and Baetz, (1998) which was analyzed in the Smith et al. (2001) analysis, categorically stated that there was no evidence to support the claim that mission statements are essential for superior organizational performance results.

In a comprehensive study not covered in the meta-analysis of Desmidt and Heene (2006), Stober (1997) examined the content of 120 mission statements of colleges and universities accredited by the Middle States Association. The research addressed the role of the mission statement in articulating values. The study explored clarity and content items of the statements including philosophy, target groups and principal services. The findings indicated that there was not much difference in the content of mission statements across different categories of colleges and universities. Similar findings emerged from a study of mission statements of 57 large companies in relation to how these statements
were used. Peyrefitte and David (2006) found comparable use of mission components across and within four industry environments suggesting that firms respond to stakeholders in similar ways. In both studies the mission statement articulated values and beliefs of the institutions.

Glaring incongruence was identified between stated espoused theories and theories-in-use in academic institutions in research by Meacham and Gaff (2006). The authors examined 312 mission statements of universities and colleges to identify the driving learning outcomes articulated by these institutions. Since the mission statement is an institution’s formal public declaration of its purpose and vision of excellence, the authors examined mission statements as espoused theories of the learning goals of educational institutions. The findings suggested disconnects between what was expected of these institutions and the goals articulated in mission statements. In addition, the research found little consensus among the sample regarding the primary goals of undergraduate education. Educational goals identified in a national report on education which were valued among faculty, parents and employees, were missing from these mission statements.

**Summary: Mission Statement**

Findings from the research literature supported and validated an assumption made in this study on conceptions and practice of information literacy, that mission statements and other public documents are conveyors of institutional values and beliefs and are useful for establishing espoused theories. This assumption was confirmed by the findings of the research review. The research literature also indicated a range of relationships between values articulated in mission statements and organizational performance.
**Academic library mission statement**

Hardesty, Hastreiter and Henderson (1988) concluded from their seminal research that the mission statement is particularly crucial for academic libraries as it helps to define the conceptual role of the library within the university. The authors suggested that one driving force behind academic library mission statements is that accreditation agencies and professional associations like the Association of College and Research Libraries, (ACRL) have placed responsibility on the library to articulate its mission. The study of the development of mission statements in 132 academic libraries (Hardesty et al.) found that although mission statements were articulated as important, less than half of the respondents had mission statements and a few library directors did not support their developments as they felt a written mission statement would not help in clarifying the library’s mission. The results also indicated that some academic libraries related the purpose of their libraries to the objectives of the teaching faculty.

Hastreiter, Cornelius, and Henderson (1999) examined mission statements of college libraries to ascertain the impact of technology on the creation or modifications of mission statements. Using a survey method, the study gathered examples of documentation relevant to the mission of the library and included statements of purpose and goal statements. The results suggested that despite the range of documentation used, libraries felt that there was a need to define purpose in a meaningful way as over fifty-two percent of the respondents indicated that mission statements were important.

Kuchi (2006) conducted exploratory content analysis of web sites of 111 members of the Association of Research Libraries (ARL) to gain insights into practices of communicating library mission. The study examined available websites of the
institutions and found that 78% of libraries had a mission statement on their website. Despite this growing number the study found that most libraries did not communicate their mission effectively since links to mission statements were not visible on web pages. The author questioned the importance of the mission statement to stakeholders of the library and the overall culture of libraries in relation to the use of mission statements.

In a fairly extensive study, content analysis of language in mission statements of 58 California academic libraries revealed that support of the curriculum of the parent institution remains a “fundamental element of library mission” (Bangert, 1997). This study of mission statements was considered important by the author since “the mission statement appears to offer the most succinct summary of mission and future forecasting for libraries” (p. 2). The findings indicated that language in mission statements stresses program-based connection to the educational environment i.e. supporting curriculum and learning outcomes, rather than resources-based connection, i.e. developing collections. The study revealed the multifaceted nature of the mission and goal statements of academic libraries yet found emphases on active participation in the intellectual life of the institution, explicit contribution to student education, increased connection to successful learning outcomes as well as development of programs consistent with institutional and professional values.

Downing’s (2003) conceptual paper and case study report of Baruch College Library, examined the role of the academic library in supporting the educational goals of the institution. This case study reported on the alignment of values and goals with practice. Congruence was identified between the library’s mission and the mission of the parent institution. The paper further detailed programs developed by the library which
suggest internal congruence between mission and practice as many programs were
developed around meeting the research and information needs of faculty and students.
However, the information presented was not extensive to give a full picture of what
obtains in academic institutions. This research on information literacy attempted to fill
this gap by examining a wider sample of academic libraries.

A seeming contending voice on the use of missions was that of Hartzell (2002),
who stated that mission statements are potentially dangerous since they are taken
seriously and used to evaluate libraries, and librarians do not have the power to do what
they claim they will do in these statements. Hartzell’s paper makes explicit references to
information literacy objectives in library mission statements and cautions librarians about
including grandiose statements in missions. The author stated “librarians do not have the
power to create effective researchers or to produce lifelong learners” (p.31). He proposed
that librarians can only provide opportunities for students to become information literate
and so missions should reflect realistic ways of students applying knowledge. Underlying
Hartzell’s suggestion however, is the belief that there should be a positive relationship
between espoused values in missions and the implementation of these values in practice.
“…Your mission…statement should describe only what your library has to offer” (p31).
These strong admonitions were seen as important in driving the research conducted. It
reflected the need for empirical evidence on the relationships between mission statements
and the practice of information literacy. This research moved the speculation of Hartzell
(2002) to another level by an indepth interrogation of both missions and theories in use
and so provides rich evidence.
The verdict out on the role and importance of mission statements in academic libraries seems unequivocal. Researchers including Hardesty, Hastreiter and Henderson (1988) posited that mission statements are important for defining institutions and are useful for guiding practice. The American Library Association deems the mission statement as an essential criterion of best practice information literacy programs (ALA, 2006). This is further explicated in *Guidelines for Instruction Programs in Academic Libraries* (2003a) with the mission required as foundational to instruction programs. The premise is that the mission statement should articulate the purpose and guide the programs of the library.

The research and conceptual literature on mission statements in academic libraries indicate that no comprehensive empirical work has been done to investigate the role of the mission statement in guiding information literacy programs in academic libraries. This research provided evidence that not only indicated the role of mission document in articulating purpose in information literacy programs, but the findings also indicated varying levels of consistency and inconsistency in missions guiding these programs.

### 2.4 Information Literacy Practice

**Observing practice: The online tutorial as representation of IL practice**

According to Kane, Sandretto and Heath (2002), effectively documenting theories of action requires examination of both philosophy and practice. Section 1 of this review explored the literature on conceptions and philosophy of information literacy. This section provides a brief overview of approaches to practice of information literacy by focusing on one selected mode of practice. Academic library instruction programs currently employ a range of curricula items including stand alone credit bearing courses,
integrated instruction with faculty, subject resource guides for specific courses and
disciplines, open subject/topic workshops in areas including, copyright and intellectual
property; plagiarism, using catalogs and databases. Along with these are a host of online
instruction tools including wikis, weblogs, gaming software, social networking tools and
web-based tutorials. Smith (2006) details a range of web-based instructional tools and
resources. However the online tutorial remains the primary means of reaching large
numbers of students and enjoys widespread use in information literacy instruction
(Johnson, Jent, & Reynolds, 2007; Knievel, 2008). Types of online tutorials include
general library orientation, research oriented tutorials, subject and disciplinary specific
tutorials, use of specific databases, use of online catalogs, and topic oriented tutorials,
e.g. plagiarism and internet use. Mirroring the focus of the proposed research in which
online tutorials will be assessed, the focus in the section is on the online tutorial as
representative of information literacy practice.

**Online tutorial as one approach to information literacy instruction**

In establishing the online tutorial as accepted information literacy instruction, a
number of research studies were identified which compared the online tutorial with
traditional face-to-face instruction. Although there are divergent views on the impact on
students’ learning outcomes when compared to other pedagogies, the effectiveness of the
online tutorial as an instructional method has been proven. The results from these studies
suggested that tutorials are as effective as librarian-led instruction (Viggiano, 2004). A
2003 study found 78% of librarians who were surveyed felt that the online tutorial was
effective at teaching library skills (Hollister & Coe, 2003).
In quantitative research done on the impact of different teaching methodologies on learning outcomes, Schilling (2002) compared traditional instructor led information literacy training with identical instruction via a web-based tutorial. Both post-tests and a three month follow-up survey indicated that the intervention group using the online tutorial scored higher on searches. Churkovich and Oughtred’s research (2002) found higher posttest means among university students in face-to-face instruction than those participating in an online tutorial as their prime method of instruction. The authors contend that the limitation of the tutorial resulted primarily from it being a commercially available tutorial, which had not been tailored to meet the subject needs of the students and so students were not motivated. Silver and Nickel (2006) found “no significant difference in the learning outcomes between in-person and online library instruction” (p.389). They noted however that the majority of students indicated a preference for the online instruction over classroom instruction.

In a comparison of three instructional methods, online instruction, face-to-face and a hybrid combination of online tutorial and live instruction, Kraemer, Lombardo and Lepkowski (2007) found “all students completed identical pre and post tests”. Michel’s (2001) extensive quantitative research which assessed the perspectives of students and faculty, found an overwhelming majority of students preferred to use the online tutorial, *Highlander* rather than attend traditional library instruction. Although faculty responded positively to the tutorial, they were strongly against it as a substitute for traditional instruction. The author concluded however that the “online tutorial can be an effective supplement to, and possible replacement for traditional library instruction” (p.330).

Parang, Raine, and Stevenson (2000) reviewed varied online alternatives to face-to-face
instruction, including virtual tours, and posited that online tutorials offered a flexibility to “teach all necessary skills to the Freshman Seminar” (p.273).

**Online Tutorial as Effective Information Literacy Instruction: Criteria and Characteristics**

Conceptual papers and research on the online tutorial highlighted characteristics and features of effective information literacy instruction including good pedagogy, critical thinking, knowledge construction, concepts and skills teaching, integrated instruction interactivity and being guided by theoretical frameworks. An emerging trend of using tutorials in blended environments was also identified in a few reports on the development of individual tutorials. These represent principles of good practice.

**Good pedagogy, concepts, critical thinking, knowledge construction**

In seminal research, Dewald (1999a) applied what she considered characteristics of good instruction to the online tutorial. The research aimed at understanding whether online tutorials exhibit best practices of traditional effective library instruction. Criteria include: course related content, active learning strategies, inclusion of objectives, collaborative learning strategies, teaching of both concepts and mechanics, and providing follow-up. The research examined 20 web-based tutorials previously selected by the Research Committee of the Library Instruction Round Table (LIRT, 2008).

Smith’s (2006) extensive work on web-based library instruction expanded Dewald’s criteria yet focused on techniques for including active learning, collaborative learning and the use of multiple media in tutorials. Tancheva (2003) also suggested essential features for the effective online information literacy tutorial which includes preliminary assessment of user’s needs, problem-based learning strategies and concept-based
teaching. The author stressed that the teaching of concepts provide students with the ability to transfer information taught.

A range of discussion pieces and empirical research studies, explored content and pedagogies used in online tutorials for effecting changes in learning, for conceptual change, critical thinking and knowledge construction. Dewald (1999b) posited that successful learning of complex knowledge requires the student to engage in the production of new knowledge, self evaluation, reflection and application of that knowledge.

Reece (2007) in a conceptual paper also identified characteristics of online tutorials that define effective information literacy. She highlighted design features that are geared towards varying learning styles, interactivity, features that provide substitutes for the dynamics of face-to-face including a written manual. The broader perspectives of Reece’s discussion however, lie in the cognitive domain of information literacy. The author stated that definitions of information literacy make it clear that the concept is concerned with higher order thinking skills as these are important for understanding, making sense and application to new situations. The importance of critical thinking is emphasized and the paper reviewed strategies for enhancing critical thinking in instruction and posited that these methods should be included in online tutorials. These strategies include concept-based teaching; choice of controversial topics that relate to life; provision of exercises which scaffold learning as well as follow-up for the students.

**Conceptual change strategies**

The role of concepts in an online tutorial is also addressed in a research study by Fox, (2005) in which traditional and emerging strategies for concept instruction were
compared. Strategies include concept mapping, and teaching with analogies which were demonstrated as useful in enhancing conceptual understanding or correcting misconceptions.

The use of concept mapping as an effective strategy in online information literacy instruction is also presented as effecting cognitive change and mental models revision, in the description of a tutorial development by Chau (2006). The tutorial was designed to integrate students’ learning styles and intelligences and a number of strategies were proposed which would facilitate this integration. Concept mapping is included in a number of sequenced strategies as a means of encouraging higher-order thinking and activating students’ prior knowledge. Other strategies included in this tutorial are mental imagery and talk-alouds. These strategies are considered enablers to students making meaning, refining information need, evaluating information, and synthesizing to build new knowledge structures. Research by Gordon (2000) found that concept mapping used as a scaffolding strategy in teaching, affects the information searching of students.

**Active learning strategies**

Active learning is a recurring theme in discourses and research on online tutorials. Just as active learning has become a vital element in all facets of face-to-face instruction it is also recognized as important in online instruction. However understandings of what constitutes active learning were diverse and sometimes not based on theoretical frameworks or research findings. In some instances active learning was reduced to interactivity. A meta-analysis of online tutorials by Hrycaj (2005) examined elements of active learning in tutorials of members of the Association of Research Libraries (ARL). Active learning techniques identified ranged from feedback from exercises, advancing in
the tutorial, questions integrated within the tutorial modules, quizzes that required the use of a separate browser window and options to send quiz results to an instructor. Stansberry (2006) reported that interactivity, which is a powerful instructional strategy, is enhanced in the web environment. Dewald, Scholz-Crane, Booth and Levine (2000) confer that interactivity of web tutorials is the key to active learning. They propose criteria of online exercises, collaborative work, and open-ended questions and guidance to foster evaluation and reflection by the student. For the authors, the goal of active learning strategies is to “require the production of new knowledge and application of the knowledge to the student’s personal situation. Active learning then is more than mechanics but is active engagement by students with the material and contributes to learner motivation by providing opportunities to practice skills and allows for assessment of student understanding (Dewald, 1999a).

**Assessing learning outcomes**

Reports on authentic assessment of learning outcomes in online tutorials are scant in the discussion and research literature. Although there is an increase in attempts at assessing authentic student output through portfolios and products of the mind (Scharf, Elliot, Huey, Briller, & Joshi, 2007) for face-to-face instruction, this is not fully realized in the online environment. “The literature relating to assessment of online library instruction studies the tool itself and not the measurement of learning outcomes” (Watson, 2007 p.8). A few individual tutorials have incorporated strategies for formative assessment including log-keeping in the WISPR, Workshop on the Information Search Process for Research (Rutherford, Hayden & Pival, 2006), questioning areas in the LIS,
Learning Information System (Hauschke & Ullmann, 2006), and feedback in the TILT, Texas Information Literacy Tutorial (Fowler & Dupuis, 2000).

**Indicators of excellence**

Exemplars of best practice emulate criteria and qualities identified in the research and constitute effective information literacy practice. Guidelines developed by the PRIMO Database and ACRL Standards are explored.

**PRIMO guidelines**

The PRIMO Database (Peer Reviewed Instructional Materials Online), (ALA, 2008a), the flagship collection of exemplary online tutorials evaluated and selected by the Association of College and Research Libraries, gives criteria for tutorials to be selected for inclusion in the database. Incorporated in the first criterion of effective pedagogy is that the tutorial offers opportunities to utilize higher order thinking skills (think, reflect, discuss, hypothesize) and compare. Effective pedagogical practices also relate to having clear objectives for the tutorial. Other criteria include technology use which enhances the learning experience, clear instructional language, and accurate information.

**ACRL Information Literacy Competency Standards as guidelines**

A number of tutorials are developed using the ACRL Information Literacy Competency Standards for Higher Education (ALA, 2000) as guidelines. Aydelott (2007) reported on the development of what the author referred to as a critical-thinking-based
online tutorial which used the ACRL *Information Literacy Standards for Science and Technology* as a framework. Holliday, Ericksen, Fagerheim, Morrison and Shrode (2006) indicated that outcomes included in the ACRL Standards were addressed for developing an online tutorial. However a broader framework was established in which Bloom’s Taxonomy was also applied with a focus on higher-order thinking skills of analysis and synthesis. Learning outcomes included students’ understanding of the recursive nature of the research process and ability to synthesize information by constructing a product. A problem based approach was used for students to identify research questions.

**Theoretical approaches and frameworks in tutorials**

There is a marked dearth in the literature on the theoretical approaches to the development of online information literacy tutorials. The expectation that instruction methods would be grounded in learning and information theories is not fully met. A conceptual paper by Dewald (1999b) identified educational learning theories which focus on the learner’s mental state rather than behavior as important considerations for information literacy instruction. The paper highlighted the theoretical frameworks of Piaget, Ausubel and Malone (as cited in Dewald, 1999b) and their application to web instruction. Based on these theories, Dewald suggested strategies to enhance learner motivation, reflection, to ensure deep learning as students engage with new material to build on existing knowledge structures as well as levels of interactivity that should be included in web based instruction. The paper identified two exemplary online tutorials which provided “opportunities for students’ exploration, creativity and application of new understanding of difficult concepts to their own assignments” (p.5).
ISP/ Constructivist framework

Reports on the process of developing tutorials indicated the use of constructivist framework. Blaabjerg (2005) reports on the development of SWIM (Streaming Web-based Information Modules) aimed at taking the user’s perspective by designing reflection areas to facilitate the creation of new knowledge. The basis of the pedagogy used in the development of the tutorial is that learning is a process of construction. Information is seen as a means of bridging a gap between existing knowledge and a problem to be solved. The tutorial employs a problem-oriented pedagogy in which students work in groups “defining and working through problems they explore in the learning process”. Using Kuhlthau’s ISP as the basis for the narrative in the tutorial, the uncertainty principle is used as a framework for guiding problem solving. The user reflects on and makes decisions on information searching strategies for solving different dilemmas. This process according to Blaabjerg, matches the demands of the information society.

Also based on Kuhlthau’s ISP framework, the WISPR (Workshop on the Information Search Process for Research) aims at moving information literacy instruction from mere mechanics to providing competence in “topic selection or developing a researchable question”. Like the SWIM tutorial, central to the development of the WISPR tutorial is the understanding of research as a process with identifiable components that are iterative. The WISPR encapsulates the complexity and recursive nature of the ISP. One guiding principle of the WISPR is that it would be meaningful to students encountering it in their subject classes. The tutorial therefore includes course specific activities that provided opportunity for faculty and librarians to include new content and
activities. Of note in the report on the tutorial by Rutherford, Hayden and Pival (2006) is the “deliverable” of the WISPR, a log book and a reflection chart in which students develop critical thinking capabilities and metacognition as they reflect on their learning. The authors noted that WISPR has been tested satisfactorily in a number of disciplines.

**Other learning theories**

Chau (2006) applied learning theories as a framework for developing an online tutorial for library instruction. The theories guided the attempt to integrate students’ learning styles and unique intelligences in the library research process. Prior knowledge is tapped and new meaning discovered throughout the learning process. The tutorial aimed at promoting information literacy through the engagement of higher-order thinking skills.

Learning Information System, LIS, (Hauschke & Ullmann, 2006) was developed as a strategy to improve information literacy among German students in all academic disciplines. The tutorial features self determined learning theory, and is based on the premise that prior knowledge is transformed through learning into a new state of knowledge. The tutorial addresses the necessity to consider the learner and previous levels of information or knowledge.

Tancheva (2003) suggested a number of principles for effective online tutorials, based on effective teaching-learning theory, which include problem-based learning and the teaching of concepts rather than skill as well as assignment or discipline-based instruction. Tancheva juxtaposes these principles against findings in the analysis of 45 online tutorials as well the author’s experience in developing online tutorials. Serious contradictions are identified. Despite previous studies demonstrating a positive
correlation between discipline specific tutorials and learning, the majority of the tutorials were standalone. This finding is corroborated by a survey of 368 information literacy programs in academic libraries, by Coulter et al. (2007) which found that 95.8 % of these programs had stand-alone online tutorials as primary instructional tools. Other contradictions between theoretical considerations and practice, identified in the study by Tancheva (2003), relate to interactivity. The author found that the requirements for effective online instruction were not satisfied by the tutorials examined. Of the 45 tutorials examined, 16 had no quizzes or exercises and 5 of those with quizzes did not provide immediate feedback. Only a few tutorials employed different knowledge assessment tools.

**Meta theoretical framework**

Sundin’s (2005) analysis of 31 web-based Scandinavian information literacy tutorials, revealed conflicting approaches to teaching which mirrors the varying conceptions of information literacy identified in the literature earlier in this chapter. Content analysis of the tutorials was done to identify different approaches to academic librarians’ expertise as this is evidenced in user information seeking education. Central to this study is an understanding of the professional practice of academic librarians. Findings from the study (Sundin, 2005) revealed four, sometimes conflicting approaches to user information seeking and instruction in the tutorials, a source approach, a process approach, a behavior approach and a communication approach. These approaches revealed different ways of defining concepts. Sundin related the approaches also to varying theoretical frameworks that drive the development of these tutorials. These
include Kuhlthau’s ISP, constructivist and cognitive learning theories, and sociocultural theory.

**Blended learning**

The blended learning environment is suggested as preferable to stand alone instruction. Williams (2006) stated there are many ways to understand and define blended learning such as combining delivery media or instructional modalities, combining instructional methods, and combining online and face-to-face instruction. A characteristic of these flexible and blended learning approaches is that instruction within a discipline converges with accompanying information resources provision (Middleton, 2006).

Within the library environment, blended learning approaches sometimes include collaborative initiatives in which an online tutorial or instructional method is used in conjunction with face-to-face disciplinary instruction. Research by Mackey and Ho (2005) suggested that the blended approach with the use of online tutorials is effective in developing information literacy competencies since in many instances these competencies are taught in the context of a specific discipline. Critical thinking and reasoning are enhanced in this collaborative environment. The previously mentioned WISPR, SWIM, and LIS tutorials support the value of the blended approach to instruction.

The Texas Information Literacy Tutorial, TILT, the flagship of information literacy tutorials, although used extensively as a stand-alone product, was designed to supplement classroom instruction (Dupuis, 2001; Fowler & Dupuis, 2000; Gilbert, Liu, Matoush, & Whitlatch, 2006; Viggiano, 2004). The global success of TILT has been the
flexibility of the tutorial to be integrated into classroom instruction using the various modules (Fowler & Dupuis, 2000; Orme, 2004).

**Summary: Online tutorials**

The empirical and conceptual literature on online tutorials presents a range of findings which have implications for the proposed study. The range of criteria identified for evaluating tutorials focus on effective information literacy practice. These criteria were however varied and there were differences in how these are distributed in tutorials discussed. Findings from the research by Sundin (2005) on online tutorials indicate a lack of clarity in the teaching and information seeking approaches of academic librarians. This mirrors the contradictory nature of understandings of information literacy.

**2.5 Chapter Summary**

The review of the literature began with an examination of the multiple and sometimes competing definitions of and theoretical approaches to information literacy. The literature suggests that this range of definitions and understandings constitute a set of values and beliefs and that these may impact professional practice. Bruce (1997b), Elmborg, (2006); Gordon, (2000a); Limberg, (1999); Lupton (2004) and Todd (2006) are some of the writers who posit that different understandings of information literacy will result in different teaching/learning approaches. The variations in the conceptualizations of information literacy imply that to propose the use of a single set of criteria to evaluate practice would provide a limited understanding of the possible relationships between these conceptualizations and practice. This is supported by the review of the literature on online tutorials as representative of information literacy practice. Criteria for effective information literacy education are many and varied. The seeming ‘messiness’ identified
clears the way for the methodological approaches proposed for this research, that of a grounded qualitative document analysis. This choice is supported also by the review of the research literature on theory of action and the work of Argyris and Schön (1974) which detail approaches to the study of relationships between espoused theories and theories-in-use in different communities of practice. A range of methodological approaches including interviews, direct observation, and in-depth document analysis, suggest that examining espoused theories and theories-in-use is best suited to qualitative methodologies. Chapter 3 details the methods and designs employed in the study.
CHAPTER 3
Methods

3.0 Chapter Overview

This chapter describes and discusses the methods employed to achieve the purposes of the study. It discusses the choice of methodological approaches, research design and the appropriateness of these for answering the research questions. Also discussed are the rationale and process for the selection of the purposive sample and data sources. The procedures involved in the pilot study are documented as these served as a basis for the methods and research designs chosen for the research. The section on data analysis describes the procedures utilized for analyzing the data collected during the study.

This research explored both the philosophical understandings and practice of information literacy. Philosophical understandings of information literacy are rooted in its concepts, definitions, theoretical frameworks and research findings. For this research “practice” was defined as teaching activities to implement information literacy in academic libraries.

3.1 Methodological Approaches

Guiding this investigation of information literacy was the theoretical framework of Argyris and Schön (1974) in which contrasting theories of action are explicated, namely theories-in-use and espoused theories. Meta-analysis of research investigating relationships between espoused theories and practice of teachers (Kane, Sandretto, & Heath, 2002), indicated that a majority of researchers used qualitative methods ranging from semi-structured interview, document analysis, observation, phenomenographic
analysis and questionnaire. Bruce (2000) described the research agenda of information literacy as fairly wide and documented varied research methods which have been employed to investigate different aspects of information literacy. These methodologies comprise qualitative, quantitative and mixed methods approaches including action research, case study, interviews, quasi experimental, longitudinal research, phenomenography, and sense-making. However, the predominant methods identified in information literacy investigations are qualitative in nature. Qualitative methods allow for richness and holism with strong potential for revealing complexity (Miles & Huberman, 1994). Krathwohl (1998) posited that qualitative methods are useful to provide a holistic perspective of a phenomenon when detailed indepth information is sought.

**Grounded approach: Constant comparison**

This research study continued the tradition of qualitative methodology to investigate information literacy, using a rigorous grounded constant comparison approach (Strauss & Corbin, 1998) to in-depth document analysis and transcription of semi-structured interviews. A qualitative grounded approach was selected since the goal of the research was to develop richer and deeper understandings of the relationships between the philosophy and practice of information literacy in academic libraries. The research did not set out to test existing claims or hypotheses rater, it aimed at providing richer understandings of a complex phenomenon. Guba and Lincoln (1994) assert that qualitative research provides contextual data, rich insight into human behavior and is useful for uncovering insider’s views. Further, the grounded approach to qualitative research is particularly appropriate for investigating “complex, messy issues that involve a range of stakeholders with different concerns and perceptions” (Skinner, Tagg, & Holloway, 2000, p. 163). The nature of information literacy demands the use of such
methodologies in research studies. The grounded approach according to Bruce (2007) uses a systematic approach to arrive at understandings about the phenomena and provides structure often lacking in other qualitative approaches. The efficacy of the method was tested in the pilot study which is detailed later in the chapter.

The research, which focused on information literacy education in academic libraries, employed a systematic ordering of concepts and themes in the data to develop understandings of relationships between espoused theories and theories-in-use.

**Document analysis**

Document analysis was particularly suited to the research questions and the overall aim of the study. Documents as unobtrusive sources of information allow access to data that are thoughtfully compiled by participants (Cresswell, 2003). The collection and examination of documents are often an integral part of qualitative research and as mechanisms are particularly important for checking validity of information derived from different sources (Mandava & Knowles, 2004). In addition, analysis of documents sometimes produces information that can generate ideas and questions which may be used in interviews or for further analysis. This was confirmed in this study as during the analysis of mission documents and online tutorials, questions and issues emerged which guided the development of the interview protocols for the coordinators of information literacy at eleven academic libraries. Further justification for document analysis is that the collection of the data is not filtered through the perceptions of individuals. It is an ideal methodology therefore for identifying theories of action. This research aimed at developing a more rigorously researched picture of the practice of information literacy and how this relates to established conceptions and values by thorough unpacking of official documents of academic institutions, such as libraries’ mission statements,
statements of purpose, instruction outcomes as well as online tutorials. Although information literacy is an established phenomenon, the review of the literature indicated that little research had been conducted which explored the relationships between espoused theories and theories-in-use of information literacy. Research was needed to fill this gap since practice in disciplines and professions is grounded in conceptions and assumptions (Kane, Sandretto & Heath, 2002).

3.2 Study Population: Process of and Rationale for Selection of Cases

The process of identifying samples for the study was challenging. Since the aim of this research was to develop further rich understanding of the theoretical and in-practice approaches to the complex concept of information literacy, it was important to include a range of academic institutions which would give access to a corresponding spread of instructional materials. Initial questions centered on identifying a universe of institutions from which to draw a sample. What population of academic institutions would provide as diverse a sample as possible of professional practice in information literacy education? Should there be a focus on four-year and community colleges, where there is an apparent greater emphasis on undergraduate education? Would these reveal a closer alignment between the practice and philosophy of information literacy education? On the other hand, if the sample was drawn from a wider range of academic institutions and included large research universities, the findings would probably represent a more holistic picture of information literacy education, since ideally research universities would offer a variety of instruction modules to their different constituents. The member institutions of the American Research Libraries (ARL) were a possible population to include. Still, a greater range of tutorials might result from a random sample of academic
institutions drawn from the Carnegie *Classification of Institutions of Higher Education* (Carnegie Foundation, 2006) which would ensure the possible inclusion of a range of institutions including research, doctoral, and master’s universities; four year undergraduate; community colleges; specialized institutions and Tribal colleges.

After much deliberation, another approach was identified, i.e. the use of a database of online tutorials deemed to represent best practice of information literacy. Academic institutions developing these tutorials became the universe for the research. The PRIMO (Peer-Reviewed Instructional Materials Online) database (ALA, 2008a) was considered ideal for a number of reasons. Developed by the Association of College and Research Libraries (ACRL), and the Coalition for Networked Information, the database includes “peer reviewed exemplary online instruction material” covering a range of types of online tutorials, developed by a fairly wide cross-section of academic institutions. The PRIMO committee selects, promotes and shares the “peer-reviewed material created by librarians to teach people about discovering, accessing and evaluating information” (ALA, 2008b). Twice per year committee members review projects that are submitted or nominated for review, and projects meeting the selection criteria are added to the database. Included in the criteria are effective pedagogy, e.g. the tutorial offers opportunity to utilize higher order skills, clear and easy-to-use organization, accuracy of material, effective use of language, innovative use of technology, and is relevant outside the developer’s institution as it presents a model. Each month a committee member interviews the creator of one of the highest scoring PRIMO projects, selected as site-of-the-month.
At the time of the selection of sources approximately 96 institutions were represented in the PRIMO database which included over one hundred and thirty tutorials selected as best practice for the academic library community. At the time of selecting the sample, 51 tutorials had been designated as site-of-the-month since December 2003. Twenty-seven of those may be considered general research tutorials, which include “modules on planning research, using the online catalog, locating books and articles, using the web for research, evaluating information, citing sources and differentiating between various resource types” (Smith, 2006). Other types of tutorials included in the database are online catalog skills, database-specific, discipline or course specific, general library orientation and tours and special topics like plagiarism and intellectual property.

The LOEX Clearinghouse for Library Instruction (LOEX, 2004) presented another option of a database of “exemplary” online tutorials developed by various institutions including four year and community colleges and large research universities. At the time of selection the database included 35 online tutorials developed by 28 institutions.

Together these two databases document best practice for information literacy educators and include a sufficient scope of tutorials. At the time of selection, 14 institutions were recognized in both databases as providing exemplary information literacy instructional material. An initial assessment of these institutions indicated that they all offered a full spectrum of instructional methods including online guides, face-to-face instruction, and online tutorials. These 14 institutions comprised the initial purposive sample. After closer examination of the available resources for these libraries it was decided that three institutions would not provide sufficient data to address the research
questions and these were eliminated reducing the sample to 11 academic libraries. One of the 11 was also included in the pilot study of 4 libraries, three of which did not have tutorials featured in both the PRIMO and LOEX databases. These libraries represent a range of higher education institutions as designated by the *Carnegie Classification of Higher Education* (Carnegie Foundation, 2006). Each library was assigned a unique identifier (e.g. Lib01, Lib02) for the purposes of analysis. Table 3.1 provides institutional (university) details including student enrollment as at fall 2009.

Table 3.1

*Institutional data and codes for sample of 11 academic libraries*

<table>
<thead>
<tr>
<th>Institution</th>
<th>Carnegie Classification</th>
<th>Student Enrollment</th>
<th># of Libraries</th>
<th>Library Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Doctoral Research Intensive</td>
<td>18,900</td>
<td>3</td>
<td>Lib01</td>
</tr>
<tr>
<td>2</td>
<td>Master’s L</td>
<td>19,000</td>
<td>1</td>
<td>Lib02</td>
</tr>
<tr>
<td>3</td>
<td>Master’s L</td>
<td>5,000</td>
<td>1</td>
<td>Lib03</td>
</tr>
<tr>
<td>4</td>
<td>Doctoral Research Extensive</td>
<td>60,000</td>
<td>14</td>
<td>Lib04</td>
</tr>
<tr>
<td>5</td>
<td>Doctoral Research Intensive</td>
<td>15,300</td>
<td>2</td>
<td>Lib05</td>
</tr>
<tr>
<td>6</td>
<td>Doctoral Research Extensive</td>
<td>87,000</td>
<td>26</td>
<td>Lib06</td>
</tr>
<tr>
<td>7</td>
<td>Doctoral Research Extensive</td>
<td>51,000</td>
<td>26</td>
<td>Lib07</td>
</tr>
<tr>
<td>7</td>
<td>Master’s L</td>
<td>28,800</td>
<td>1</td>
<td>Lib08</td>
</tr>
<tr>
<td>8</td>
<td>Doctoral Research Extensive</td>
<td>50,300</td>
<td>17</td>
<td>Lib09</td>
</tr>
<tr>
<td>10</td>
<td>Doctoral Research Extensive</td>
<td>27,829</td>
<td>5</td>
<td>Lib10</td>
</tr>
<tr>
<td>11</td>
<td>Doctoral Research Extensive</td>
<td>42,000</td>
<td>40</td>
<td>Lib11</td>
</tr>
</tbody>
</table>

3.3 Data Sources: Justification and Collection

The research literature on theory of action provided evidence of consistent approaches for developing institutional espoused theories and theories-in-use. The
detailed meta-analysis of research studies by Kane, Sandretto, and Heath (2002) indicated that many researchers employed the use of interviews and document analysis to successfully gather data on espoused theories and theories-in-use. This research on information literacy followed this pattern. The following sources provided the data used to address research questions for developing espoused theories, theories-in-use and a holistic picture of the relationships between these:

a) Public, official documents relating to mission, goals and learning outcomes of academic institutions, including mission statements, instructional goals and information literacy/learning outcomes of libraries associated with these institutions,
b) Instructional curricula of academic libraries as realized through a range of online tutorials,
c) Semi-structured telephone interviews with individuals with designated responsibility for instruction and information literacy in these academic libraries.

The convergence of these data sources provided richness to the understanding of the complexity of information literacy and added to the credibility of the findings.

**Mission statements**

Mission documents of libraries, universities and information literacy programs, accessed via websites of the selected academic libraries provided the data to address research question 1 (RQ1) which addressed the conceptions of information literacy in academic libraries. It was decided to use mission statements for the following reason. Meacham and Gaff (2006) believe the mission statement is the most enduring, respected, and public of documents which support an [academic] institution’s vision of educational excellence. The academic library’s overall and instruction mission statements demonstrated not only the intended support to the mission of the university, but
explicated a philosophy for teaching and learning. However, since statements of instructional purposes and values were included in other policy documents, the research examined additional mission documents including learning goals, strategic plans and information literacy policies to provide the detailed evidence of the espoused theories of information literacy in academic libraries. Definitions of information literacy were also key documents in building espoused understandings of information literacy. Together these documents represented the contextual framework for understanding the espoused theories of information literacy programs and provided data for answering sub-questions relating to assumptions, explanations, and teaching learning goals of information literacy programs. Verbatim statements and key concepts from these documents were recorded using the Excel software program.

**Online tutorials**

The online tutorial is one of many possible documents representing practice of information literacy. Academic library instruction programs employ a range of curricula items including credit bearing courses, integrated instruction with faculty, subject resource guides for specific courses, database guides, workshops, LibGuides, varied online tutorials and learning objects. Tutorials therefore do not provide all the answers of effective information literacy instruction (Edwards, 2000). The selection of the online tutorial as representative of information literacy practice in academic libraries was based on different reasons. The online tutorial is a visible and semi permanent record of the theories-in-use of information literacy. In addition, the use of tutorials in library instruction programs has increased significantly. The online tutorial is presented as both a reflection of the philosophy of information literacy and an ideal representation of good professional practice. It therefore represents a viable alternative to onsite observation of
information literacy program content. Preliminary analysis of web sites of over fifty academic libraries by the researcher of this study prior to conducting this research revealed the online tutorial as the most frequently occurring mode of online instruction. In many instances the online tutorial was developed as the single stand-alone mode of instruction.

Initial identification points for online tutorials were the PRIMO (Peer-Reviewed Instructional Materials Online) database (ALA, 2008a) and the LOEX Clearinghouse for Library Instruction (LOEX, 2008). Other sources of online library instructional materials providing access to tutorials include ANTS (Animated Tutorial Sharing Project). The ANTS project, initially developed by the Council of Prairie and Pacific University Libraries, COPPUL, is a “critical mass of open source tutorials” (ANTS, 2008). The Multimedia Educational Resource for Learning and Online Teaching (MERLOT, n.d.), a database of instruction resources for varied disciplines, also includes select peer reviewed library tutorials. In addition, youtube.com gives access to an expanding number and array of information literacy tutorials and videos. However the PRIMO and LOEX databases represent exemplary, best practice of information literacy instruction resources selected and reviewed by the academic library community. Online tutorials from institutions recognized in these databases provided data for RQ 2 and sub-questions relating to processes, outcomes, theoretical frameworks and teaching strategies of information literacy practice. Tutorials were examined as they existed at the time of the data collection on the websites of libraries rather than as they first appeared in PRIMO and LOEX. During the data collection period, a few tutorials originally recognized in both databases were retired from the web pages of libraries. Other tutorials developed by the
libraries were analyzed in addition to those previously analyzed. Verbatim statements clarifying the tutorials’ objectives and pedagogical approaches and key concepts were recorded.

**Interviews**

Semi structured in-depth telephone interviews with designated coordinators of information literacy and instruction programs provided the third data source. Names and titles of coordinators were accessed from web pages of libraries. All librarians were contacted via email (see Appendix B for Email Recruitment Notice) and invited to participate in the research study and all agreed. Interviews were conducted between July and October 2009. Twelve interviews were conducted. During the data collection period a designated coordinator of information literacy relocated to a different library but agreed to be interviewed along with the librarian who currently holds the position.

Interview protocol for each interview was developed during the data collection/analysis of online sources when themes and categories of concepts were emerging. These themes and patterns guided the development of the questions. The Interview Protocol (Appendix C) represents some of the major questions asked in all interviews. However since many questions were data driven, each protocol included unique questions that were institution specific especially in relation to intended outcomes of online tutorials.

Patterns which emerged from the document analysis assisted in providing a context for the formulation of interview questions. Bruce (2007) asserts that interviews typically add both depth and breadth to data. Interviews provided a richer context to the official documents and online tutorial and assisted in developing a clearer picture of information literacy practice, and filled gaps in information not found online.
3.4 Pilot Study

Purpose

Over a four-month period, February to May 2008, analysis was done of information literacy programs and institution missions of a convenience sample of four academic institutions. The analysis was designed to aid the selection of an appropriate research methodology as well as to determine types of institutional policy documents and instructional material to be studied for the research on the relationships between conceptual understandings of information literacy and professional practice.

Initial identification of sources

Prior to this analysis, a sample of 86 academic institutions was identified for preliminary data collection. These included 57 whose institutions housed MLIS programs accredited by the American Library Association (ALA); a number of best practice sites named by the Association of College and Research Libraries (ACRL) and others that were identified through serendipity. A scan was done of websites of 66 of these to determine types of policy and instruction documents. As shown in Table 3.2, there was 1) a range of types of mission documents including university /library mission/goal statements, information literacy/instruction goals and mission, 2) a range of online instructional resources including the online tutorial.

Table 3.2

Types of mission documents and instruction resources identified on websites of academic institutions

<table>
<thead>
<tr>
<th>Official Mission Documents</th>
<th>Information Literacy Instruction Tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>• University Mission</td>
<td>• Tutorials</td>
</tr>
<tr>
<td>• University learning goals</td>
<td>o Self-paced research</td>
</tr>
<tr>
<td>• Library Mission/goals</td>
<td>o Guide to library</td>
</tr>
</tbody>
</table>
Initial selection of four institutions for analysis

From the larger sample of 66 institutions that were scanned, a sample of 4 was selected for further deep analysis:

- University 1: Doctoral Research Extensive (Carnegie Classification of Institutions of Higher Education)
- University 2: Doctoral Research Extensive
- University 3: Doctoral Research Extensive
- University 4: Doctoral Research Extensive

These institutions were selected from lists of institutions with information literacy resources including online tutorials, and mission statements deemed successful and useful models by ACRL (ALA, 2003c)

Analysis: ACRL Standards and grounded approach

An initial analysis was done of the instruction program of University 3 using the *ACRL Information Literacy Competency Standards for Higher Education* (ALA, 2000) as evaluation criteria. The ACRL Standards was selected as the leading document guiding
information literacy practice, from a plethora of possible frameworks for analyzing information literacy including critical thinking rubrics, criteria for assessing online tutorials, and Bloom’s Taxonomy.

Concurrent with this analysis using determined criteria, a qualitative grounded approach (Strauss & Corbin, 1998) was used to analyze the library instruction program at University 1. Based on the processes of analysis used in these two institutions and the preliminary results obtained, it was decided to analyze the information literacy program tools and official documents of the remaining institutions using the grounded approach.

**Selecting the grounded constant comparison approach**

The constant comparison grounded approach of Strauss and Corbin (1998) was chosen as it offered a greater flexibility for developing and analyzing the official documents and the tutorials than the approach that involved an a priori set of criteria. Rigorous analysis was done of all relevant policy documents identified as well as a range of instruction materials. Official documents identified at University 2 and analyzed, included institution/library mission, library instruction outcomes and IL goals and objectives. In-depth analysis was also conducted of instructional materials including research guides, online course material and online research tutorials. The online research tutorial was presented as both an alternative to and as complementary to face-to-face instruction in instruction programs at both University 2 and University 4. Two comprehensive research tutorials were rigorously unpacked during the process of analysis. As the process of analysis was extremely time consuming, it was decided to restrict the further analysis to University 4 as it offered the most diverse range of documents. Results of the complete analysis of the instruction program at University 4 and the research tutorial are detailed in Appendix D.
Overview of step-by-step pilot study procedures

1. Identification of initial sample of academic institutions.

2. Identification of official and instruction documents for analysis (See Table 3.2)

3. Developing initial criteria for evaluation of instruction programs from a variety of frameworks which guide information literacy instruction.

4. Selection of initial sample of 4 institutions.

5. Preliminary analysis of one instruction program using the ACRL Standards as criteria for evaluation.

6. Simultaneous grounded theory using constant comparison approach to one instruction program.

7. Confirmed and finalized the workability of the grounded approach as it afforded a deeper, more flexible evaluation.

8. In-depth constant comparative analysis of online policy documents and instructional programs including online tutorials of University 2 and University 4.

9. Selecting University 4 for complete analysis.
   a. Identifying statements and concepts relating to learning, information use, information literacy instruction in a range of policy documents and instructional curricula items.
   b. Listing statements and concepts verbatim from the documents and tutorials e.g. statement “partnering with faculty” was identified in the Library’s Strategic Plan 2006-2011.
   c. Categorizing statements from ‘espoused’ and ‘in use’ documents and grouping accordingly (See D1 Appendix D).
d. Creating a list of indicators of skills and concepts approach to IL instruction based on information literacy literature.

e. Labeling statements as instructional ‘process’ or instructional ‘outcome’  
   (Table D1 Appendix D)

f. Comparing and contrasting process and outcomes statements to identify sub-categories e.g. skills outcomes or knowledge outcomes (Table D1).

g. Comparing and contrasting labeled statements to group into broad categories of declarative/conceptual and procedural/skills statements (See Table D2 Appendix D)

h. Assigning additional labels of procedural and declarative knowledge statements.

i. Developing sub-categories of outcomes-based statements (Table D2) and process based statements e.g. research processes and research outcomes.

   Using verbatim statements and concepts from the documents. Broad categories were established by two researchers (academic advisor and graduate student researcher) and constructed from patterns observed in the data and previous knowledge of the information literacy literature. These categories were refined through discussion.

j. Asking questions of the data and developing broad claims from the statements

k. Describing the data with statements of claims.[See Table D3 Appendix D]

l. Developing narratives for select statements of claims.

The full findings and discussion of the pilot study are detailed in Appendix D.
Post pilot study decisions

The process and results of the Pilot Study facilitated the following decisions:

1. Final selection of policy documents and instruction material to be used for dissertation research. During the pilot study a range of instruction tools including online tutorials were analyzed. Based on the time used to conduct the analysis, it was decided that not all instruction tools would be used in the research. However it was decided to use a range of policy documents including mission statements and goals for teaching and instruction.

2. Confirming the use of the online tutorial as a reliable indicator of information literacy practice. Preliminary analysis of 66 institutions (identified at step 1) indicated the online tutorial as the most frequently occurring learning object and the pilot study confirmed the tool as representative of practice.

3. Identification and selection of two information literacy best practice databases which provide online tutorials as detailed earlier in this chapter.

4. Selecting the purposive sample of institutions recognized in both databases.

Outcomes of and reflection on pilot study

The pilot study was conducted primarily to aid the selection of appropriate research methodology as well as to determine types of institutional policy documents and instructional material to be studied for the research. These aims were successfully achieved. Firstly it assisted in putting further boundaries on the documents which were included for study in the research. Since the pilot study indicated that the research process was extremely time-consuming and it was decided that it would be impossible to study the range of curricula material for all institutions in the research sample as was
done for University 4. The decision to adopt the online tutorial was partly based on the work done during the pilot study.

The process also tested the workability of the methodological approaches used. It clarified a qualitative methodology with a grounded comparative approach as appropriate and sound to provide answers on the relationships between espoused theories and theories-in-use of the complex phenomenon of information literacy. Rich thick data emerged from the process concerning information literacy practice in the library. The research objectives were therefore met. Since the main purpose of the research procedure was to provide richer understandings rather than test an existing claim, this approach provided a clearer picture of the alignment of philosophy and theory with practice. Rigorous in-depth analysis of concepts in official policy documents and online tutorials of two academic institutions provided partial answers to a number of research questions. Major conceptions of the institution regarding information literacy were identified. The practice of information literacy as realized in the online tutorial was also clarified.

The pilot study was also useful for shaping questions used to develop the interview protocol. Patterns which emerged from the analysis of documents and instruction resources provided the basis for possible questions aimed at clarifying these patterns.

The methodological approaches and data analysis techniques employed were confirmed as applicable to the research questions and the nature of the study which examined relationships between espoused theories and theories-in-use of information literacy. The result was a body of rich descriptions of information literacy education in one library.
3.5 Data Analysis

Overview

This section discusses the techniques employed to analyze the rich data derived from the main data sources. The research aimed at developing richer understandings of the beliefs and values which underpin the practice of information literacy in academic libraries. Assessment of mission documents, online tutorials and transcripts of semi-structured interviews was done through descriptive document analysis and was guided by the constant comparison approach of Strauss and Corbin (1998). The choice of this approach was clarified and confirmed during the pilot study. This method of analysis was also used in research on espoused theories and theories-in-use (Kane Sandretto, & Heath, 2002).

Central to any research investigation using the grounded theory approach is the asking of questions with the pursuit of their answers (Strauss & Corbin, 1998). During the pilot study for this research the analysis of data from one academic library was guided by different types of questions that helped to unpack dimensions and themes in documents and tutorials. Questions were asked of the meaning of statements and concepts and questions about the relationships between concepts allowed for systematic categorization. This questioning approach was maintained to analyze the research data.

Comparative analysis is also essential to the qualitative grounded methodology. This approach involves an iterative process in which data collected are analyzed through comparative assessment and then categorized through a series of coding procedures. This allows for the emergence of the essence of the concept being studied. Strauss and Corbin, assert that constant comparison as a method helps to better understand the data and allows the grouping of emerging concepts (1998).
The coding procedures followed for this research were not static or rigid; they involved moving back and forth between types of coding and between the data, comparing concepts, developing new categories and changing these as needed. Coding procedures followed, based on the constant comparative approach, were:

1) Open coding which is “the analytic process through which concepts are identified and their properties and dimensions discovered in the data” (Strauss & Corbin, p.101).
2) Axial coding which is “the process of relating categories to their subcategories” (p.123). Important in axial coding is the answering of questions of how and why to understand latent qualities of categories and so develop subcategories.
3) Selective coding which is “the process of integrating and refining the theory” (p.143). Central or major categories and themes emerge at this stage of the analysis.

The process in this study involved recording of statements and concepts in mission documents and online tutorials, labeling these according to concept they represent; comparing statements and concepts to categorize them and then comparing and grouping categories to develop broad claims. It was important to use a systematic approach to the analysis of the data to ensure integrity of the findings across the eleven institutions studied. A few steps taken in the pilot study which seemed superfluous to providing answers to research questions were eliminated during the process. The analysis was done in distinct phases to capture themes towards answering the major research questions.

**Phases of data analysis**

**Concepts, categories**

Firstly, to determine the espoused theories of information literacy in academic libraries, indepth analysis of mission documents was done to identify themes and
categories of themes in understandings of learning, and information literacy. Mission statements and other documents which detail teaching goals, purpose and understandings provided the data for espoused theories. University mission documents accessed from websites of institutions were examined to discover statements and concepts relating primarily to teaching and learning outcomes. Library mission documents and information literacy instruction documents were also analyzed to identify statements which defined understandings of information literacy and conveyed support for the university.

Statements were recorded verbatim as they appeared in documents. A process of open coding of data was used to identify the concepts in these statements. Labels were assigned. These were compared with similar statements and an iterative process of comparing and labeling to ascertain common categories of concepts. The education research literature as well as the research literature in information literacy helped in labeling some of these concepts. However labels/codes and categories emerged from the concepts identified in the statements. In some instances labels were assigned based on the term used e.g. “lifelong learning” as an outcome statement was assigned lifelong learning. However “developing a lifelong habit of inquiry” was also labeled lifelong learning as well as inquiry skills. Concepts such as partnerships were labeled collaboration based on the information literacy literature.

Grouping of similar concepts into categories followed. Comparison of categories was done to ensure that these were valid and true to the concepts. Categories were also examined and compared to identify specific aspects. Were they processes or outcomes of teaching and learning? Further, what represented knowledge and knowledge outcomes as main categories? Various subcategories of knowledge were identified. These categories
were again compared and others emerged. Strauss and Corbin (1998) posit that categories are powerful as they have the potential to explain. Further comparison across the categories from library and the university allowed for the emergence of categories of knowledge, lifelong learning, social responsibility, collaboration. Charts detailing the concepts and categories were developed.

**Emergent themes and claims**

Synthesis of the various themes and categories led to building predominant themes or categories of knowledge processes and outcomes and information literacy processes and outcomes. Statements of claims were developed from the major categories of concepts. A questioning approach was used in developing these claims. Based on the categories, what claims were academic libraries making about information literacy? What processes were espoused as ways for achieving mission? A detailed narrative or description of these claims indicating the documents which provided the evidence was done. These statements of claims provided evidence of the espoused theories held by academic libraries.

Meta-claims were developed after a process of continuous comparison of the sets of claims developed for the 11 libraries to identify consistent themes and categories across claims.

Similar deep rigorous analysis was applied to the online tutorials to determine the theories-in-use of information literacy in academic libraries. Online tutorials are representative of observable “action” of the information literacy community and knowledge required to understand action is embedded in the ordinary language and social practices of the community in which action occurs (Argyris, Putnam, & Smith, 1985). Verbatim statements and concepts in tutorials were recorded and similar coding
procedures of assigning open codes and axial codes were followed. Statements of activities and outcomes were compared and contrasted and labeled. Labels assigned were then compared and categories emerged. The process uncovered the language and practice of information literacy practice via these tutorials. The dimensions of the categories were highlighted as outcomes and competencies addressed in tutorials and were labeled into subcategories of “skills” and “concept” instruction.

Comparison and synthesizing of themes and categories led to the development of predominant themes of theories-in-use. Charts of the categories and predominant themes were developed. These themes and categories were questioned and statements of claims developed which indicated the theories-in-use of information literacy via online tutorials.

It was necessary to situate the analysis of these in-use-theories in relation to the espoused theories through constant comparison. Deep questioning of the relationships between espoused theories and theories-in-use was done after charts detailing the statements of claims were developed. Meta-claims were developed from the complete list of claims for all 11 libraries. These meta-claims provided a comprehensive picture of conceptions and practice.

Twelve audio-recorded semi structured telephone interviews with designated coordinators of information literacy were transcribed verbatim by the researcher. Each interview protocol was analyzed using a similar constant comparison method (Strauss & Corbin, 1998). This involved several rounds of examination and analyzing statements in the responses for themes and issues. Common themes in each area of the interviews were identified through an iterative process of comparing and labeling of statements. New themes and categories emerged as each protocol was analyzed. Further categories
emerged when compared to earlier analyzed transcripts. Verbatim quotations were recorded from each librarian in each category of themes. A full profile of themes and quotations was assembled. Themes included *barriers and enablers, death of research tutorials, ownership of information literacy, critical thinking*, among others.

Rich descriptions of information literacy practice emerged from the analysis. Orrell reported a similar process of analyzing interview protocols which developed “comprehensive descriptions of both individually and commonly espoused beliefs and ideal and possible relationships between teaching, learning and assessment” (2006, p.446). Librarians interviewed for this study presented a picture of information literacy practice; they reported on teaching initiatives not seen in online documentation and provided explanation for how they dealt with barriers and constraints in practice. Explanations and justifications were offered for what appeared as disjunctions between espoused theories and theories-in-use.

Meta-claims developed from the analysis of the mission documents and online tutorials and themes and issues which emerged from interview transcripts were used to guide the responses to the major research questions and related questions.

**Dependability of the procedures**

Ensuring dependability as well reliability in qualitative research becomes an important issue. Miles and Huberman (1994), advocate for questioning of the procedures and the findings to achieve reliability and subsequent stability of conclusions drawn from research findings. Firstly this research used a multi-case sample which adds precision and stability to findings. “The multi-case sampling gives us confidence that the emerging theory is generic, because we have seen it work out in predictable ways” (Miles & Huberman, p.29). Data from eleven academic libraries were individually analyzed to
develop claims towards answering the research questions. The research also employed different data collection methods, the use of mission documents, online tutorials and semi-structured interviews.

The data were made stronger as repeated contacts were made with the websites of the libraries to ensure correctness of statements recorded during initial data collection period. Coding checks were established in two ways: 1) in April 2009 independent coding of mission documents and tutorials of three libraries in the sample of 11 libraries was done by the academic supervisor of this research study; 2) independent recoding of data from pilot study institution which was included in research sample.

3.6 Chapter Summary

The purpose of this chapter was to describe and discuss the methodological approaches and data analysis techniques employed in the research and the rationale for using these. Indepth document analysis and transcription of semi-structured interviews were the primary methods for addressing research questions relating to conceptions and practice of information literacy of a purposive sample of 11 academic libraries. Rich descriptions emerged from the rigorous analysis of over 50 mission documents and approximately 150 online tutorials of these libraries. Information obtained from transcribed semi-structured interviews with information literacy educators clarified the themes which emerged from the document analysis. The grounded comparison analytic approach was employed at two distinct levels of analysis, namely an institutional, case-by-case description and a meta-analysis of claims from all institutions which answered the research questions. The results of these are detailed in Chapters 4 and 5 respectively.
CHAPTER 4

Findings

Information Literacy Profiles: Eleven Cases

4.0 Chapter Overview

This study was designed to investigate the relationships between conceptual understandings of information literacy and concurrent professional practice in academic libraries. The purpose is to provide richer understandings of the relationships between the espoused theories and theories-in-use of information literacy. The research is guided by the theoretical framework of Argyris and Schön (1974) in which theories of action, namely espoused theories and theories-in-use are employed to explain professional practice. The research asked whether the conceptual understandings, the foundational beliefs and values of information literacy as expressed in official mission documents, guide and are reflected in the practice of the academic library community as observed in online tutorials. To address this, rigorous analysis was done of mission documents and online tutorials of a sample of 11 academic libraries recognized in the academic library community for developing exemplary information literacy instruction resources. In addition, indepth semi-structured interviews conducted with designated coordinators of information literacy instruction in these institutions were transcribed and analyzed. Interview findings helped shed light on the results from the document analysis and clarified the emerging relationships between conceptions and practice of information literacy.

The previous chapter described and discussed how the data were collected and the methods of analysis. Two levels of analysis were conducted, an indepth institutional
analysis and a meta-analysis to provide answers to the three main research questions and sub-questions.

This chapter provides the findings institution by institution which involved indepth study of mission documents and online tutorials of eleven academic libraries. Statements of claims developed from the comparative analysis of concepts and emerging themes in these artifacts are followed by a detailed narrative of the evidence for these claims. These claims form the basis for comparative tabular displays of espoused theories and theories-in-use for the libraries. This is followed by a reflective summary which discusses the relationships between sets of claims for each institution. To facilitate discussion of the different tutorials for each institution, codes were assigned to major tutorials and groups of short tutorials (see Figure 4.1). The findings from the documents and tutorials are supported by the insights of librarians from interview transcripts. A meta-analysis of these findings towards answering the research questions follows in Chapter 5.

Table 4.1

Online tutorials of 11 academic libraries: Assigned codes

<table>
<thead>
<tr>
<th>Libraries</th>
<th>Tutorials</th>
<th>Codes</th>
<th>Libraries</th>
<th>Tutorials</th>
<th>Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lib01</td>
<td>Research Tutorial 1</td>
<td>Lib01T1</td>
<td>Lib07</td>
<td>Research Tutorial 1</td>
<td>Lib07T1</td>
</tr>
<tr>
<td></td>
<td>Research Tutorial 2</td>
<td>Lib01T2</td>
<td></td>
<td>Research Tutorial 2</td>
<td>Lib07T2</td>
</tr>
<tr>
<td></td>
<td>Information Tutorial</td>
<td>Lib01T3</td>
<td></td>
<td>Plagiarism Tutorials</td>
<td>Lib07T3</td>
</tr>
<tr>
<td></td>
<td>Plagiarism Tutorial</td>
<td>Lib01T4</td>
<td></td>
<td>Library Tutorial</td>
<td>Lib07T4</td>
</tr>
<tr>
<td></td>
<td>Citation Tutorial</td>
<td>Lib01T5</td>
<td></td>
<td>Subject Tutorial</td>
<td>Lib07T5</td>
</tr>
<tr>
<td></td>
<td>Course Tutorials</td>
<td>Lib01T6</td>
<td></td>
<td>Subject Tutorial</td>
<td>Lib07T6</td>
</tr>
<tr>
<td></td>
<td>Subject Tutorial</td>
<td>Lib01T7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Short Tutorials</td>
<td>Lib01T8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Research Tutorial</td>
<td>Lib01T9*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lib02</td>
<td>Research Tutorial 1</td>
<td>Lib02T1*</td>
<td>Lib08</td>
<td>Research Tutorial</td>
<td>Lib08T1*</td>
</tr>
<tr>
<td></td>
<td>Research Tutorial 2</td>
<td>Lib02T2</td>
<td></td>
<td>Library Tutorial</td>
<td>Lib08T2</td>
</tr>
<tr>
<td></td>
<td>Library Tutorial</td>
<td>Lib02T3</td>
<td></td>
<td>Searching Tutorial</td>
<td>Lib08T3</td>
</tr>
<tr>
<td></td>
<td>Find Articles</td>
<td>Lib02T4</td>
<td></td>
<td>Evaluating Info.</td>
<td>Lib08T4</td>
</tr>
<tr>
<td></td>
<td>Find Books</td>
<td>Lib02T5</td>
<td></td>
<td>Citations Tutorial</td>
<td>Lib08T5</td>
</tr>
<tr>
<td></td>
<td>Find Theses etc</td>
<td>Lib02T6</td>
<td></td>
<td>Finding Books</td>
<td>Lib08T6</td>
</tr>
<tr>
<td></td>
<td>Short Tutorials</td>
<td>Lib02T7</td>
<td></td>
<td>Finding Article</td>
<td>Lib08T7</td>
</tr>
<tr>
<td>Lib03</td>
<td>Research/ Course Tutorial 1</td>
<td>Lib03T1</td>
<td>Evaluating Sources</td>
<td>Lib09T1</td>
<td></td>
</tr>
<tr>
<td>--------</td>
<td>-----------------------------</td>
<td>---------</td>
<td>-------------------</td>
<td>---------</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Research/Course Tutorial 2</td>
<td>Lib03T2</td>
<td>Plagiarism Tutorial</td>
<td>Lib09T2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Library Tutorial</td>
<td>Lib03T3</td>
<td>Academic Integrity</td>
<td>Lib09T3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Evaluating Information</td>
<td>Lib03T4</td>
<td>Citation Tutorial</td>
<td>Lib09T4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Plagiarism Tutorial</td>
<td>Lib03T5</td>
<td>Finding Books</td>
<td>Lib09T5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Find Books</td>
<td>Lib03T6</td>
<td>Finding Articles</td>
<td>Lib09T6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Find Articles</td>
<td>Lib03T7</td>
<td>Research Tutorial</td>
<td>Lib09T7*</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lib04</th>
<th>Research Tutorial 1</th>
<th>Lib04T1*</th>
<th>Research Tutorial 1</th>
<th>Lib10T1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Research Tutorial 2</td>
<td>Lib04T2</td>
<td>Research Tutorial 2</td>
<td>Lib10T2</td>
</tr>
<tr>
<td></td>
<td>Assignment Tutorial</td>
<td>Lib04T3</td>
<td>Using Databases</td>
<td>Lib10T3</td>
</tr>
<tr>
<td></td>
<td>Search For Books</td>
<td>Lib04T4</td>
<td>Finding Books</td>
<td>Lib10T4</td>
</tr>
<tr>
<td></td>
<td>Search for Articles</td>
<td>Lib04T5</td>
<td>Finding Articles</td>
<td>Lib10T5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lib05</th>
<th>Research Tutorial</th>
<th>Lib05T1</th>
<th>Research Tutorial</th>
<th>Lib11T1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Plagiarism Tutorial</td>
<td>Lib05T2</td>
<td>Plagiarism Tutorial</td>
<td>Lib11T2</td>
</tr>
<tr>
<td></td>
<td>Citation Tutorial</td>
<td>Lib05T3</td>
<td>Citing Sources</td>
<td>Lib11T3</td>
</tr>
<tr>
<td></td>
<td>Information Literacy Tool</td>
<td>Lib05T4</td>
<td>Searching Tutorial</td>
<td>Lib11T4</td>
</tr>
<tr>
<td></td>
<td>Short Tutorials</td>
<td>Lib05T5</td>
<td>Finding Books</td>
<td>Lib11T5</td>
</tr>
<tr>
<td></td>
<td>Subject Tutorials</td>
<td>Lib05T6</td>
<td>Finding Articles</td>
<td>Lib11T6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lib06</th>
<th>Research Tutorial</th>
<th>Lib06T1</th>
<th>Research Tutorial</th>
<th>Lib11T1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Information Tutorial</td>
<td>Lib06T2</td>
<td>Plagiarism Tutorial</td>
<td>Lib11T2</td>
</tr>
<tr>
<td></td>
<td>Newspaper Tutorial</td>
<td>Lib06T3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Journals Tutorial</td>
<td>Lib06T4</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Subject Tutorial</td>
<td>Lib06T5</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Subject Tutorial</td>
<td>Lib06T6</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Plagiarism Tutorial</td>
<td>Lib06T7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. Listings of tutorials in Table 4.1 reflect changes which took place in libraries’ offerings up to the point where data collection was concluded. The researcher therefore took into account early manifestations of tutorials identified at the beginning of the research process. In some cases* a comprehensive tutorial was in the process of being replaced, amended or removed.
4.1 Case 1: Lib01

Concepts derived from policy documents

_University:_ Learning community; scholarship; intellectual discovery; critical thinking; research-based teaching; leaders; productive citizens, creativity; student-focused teaching outcomes; academic and personal development; spiritual values, wisdom.

_Libraries:_ Scholarship; critical thinking; knowledge creation; organizing information; collaboration; constructing meaning; lifelong learning; inquiry; information literacy.

_Predominant themes:_

_University:_ Student-centered knowledge-based outcomes; creativity; social responsibility; values.

_Libraries:_ Knowledge creation; student-centered information literacy outcomes and processes; values.

Concepts derived from online tutorials

Finding sources; search strategies; using sources organizing information; citing sources; academic honesty; plagiarism; evaluating sources; problem-based learning; information cycle; information literacy; integration.

_Predominant themes:_

Information literacy processes and outcomes; information sources; avoiding plagiarism.
Table 4.2

Lib01: Concepts from mission documents and online tutorials

<table>
<thead>
<tr>
<th>University</th>
<th>Mission Documents</th>
<th>Evidence</th>
<th>Concepts</th>
<th>Online Tutorials</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Concepts</td>
<td>Evidence</td>
<td>Concepts</td>
<td>University</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Learning</td>
<td>• University mission</td>
<td>• Finding sources</td>
<td>Research Tutorial T1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Scholarship</td>
<td></td>
<td>• Search strategies</td>
<td>Research Tutorial T2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Intellectual discovery</td>
<td></td>
<td>• Research strategies</td>
<td>Information Tutorial T3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Critical thinking</td>
<td></td>
<td>• Using sources</td>
<td>Plagiarism Tutorial T4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Holistic development of students: cultural, academic, personal</td>
<td></td>
<td>• Organizing information</td>
<td>Citation Tutorial T5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• student focused teaching</td>
<td></td>
<td>• Citing sources</td>
<td>Course Tutorial T6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• spiritual values</td>
<td></td>
<td>• Academic honesty</td>
<td>Subject Tutorial T7</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• wisdom</td>
<td></td>
<td>• Plagiarism</td>
<td>Short Tutorials T8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• creativity</td>
<td></td>
<td>• Evaluating sources</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Libraries</td>
<td>Concepts</td>
<td>Evidence</td>
<td>Concepts</td>
<td>Online Tutorials</td>
<td>Evidence</td>
</tr>
<tr>
<td></td>
<td>• Scholarship</td>
<td>• Libraries Mission</td>
<td>• Finding sources</td>
<td>Research Tutorial T1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Critical thinking</td>
<td>• Library instruction Mission</td>
<td>• Search strategies</td>
<td>Research Tutorial T2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Knowledge creation</td>
<td>• Information Literacy Plan</td>
<td>• Research strategies</td>
<td>Information Tutorial T3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Culturally literate</td>
<td></td>
<td>• Using sources</td>
<td>Plagiarism Tutorial T4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Productive citizens</td>
<td></td>
<td>• Organizing information</td>
<td>Citation Tutorial T5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Inquiry</td>
<td></td>
<td>• Citing sources</td>
<td>Course Tutorial T6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Collaboration</td>
<td></td>
<td>• Academic honesty</td>
<td>Subject Tutorial T7</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Constructing meaning</td>
<td></td>
<td>• Plagiarism</td>
<td>Short Tutorials T8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Access and use information resources</td>
<td></td>
<td>• Evaluating sources</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Problem-based learning</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Claims developed from concepts in policy documents

1. The University mission focuses on outcomes of creativity, rational discourse and intellectual discovery within a “learning community”.
2. Libraries support the university’s knowledge-oriented mission by advancing scholarship, critical thinking and knowledge creation.

3. The development of information literacy skills is presented as a vehicle for promoting students’ participation in inquiry.

4. Information literacy is defined as ability to adapt skills to engage with information to construct meaning.

5. The Libraries promote multiple pathways to develop information literacy skills.

6. Instructional collaboration is an essential process to meet the goal of information literacy integration into the curriculum.

**Claims/Evidence**

1. The University mission focuses on outcomes of creativity, rational discourse and intellectual discovery within a “learning community”.

   Within an apparent knowledge oriented environment, the university articulates a student-centered mission, guided by core values, aimed at a holistic development of students. Knowledge-based outcomes coalesce around concepts of “learning”, “scholarship”, “intellectual discovery”, “critical thinking”; “creative imaginings” and “rational discourse”. Students are developed to be “culturally literate” “productive citizens and leaders” displaying self-assuredness, ethical and spiritual growth as well as ‘technological sophistication’. As a “premier learning community”, the university promotes “academically challenged”, research-based teaching focused on changing societal needs as well as on student learning outcomes.

2. The Libraries support the University’s knowledge-oriented mission by advancing scholarship, critical thinking and knowledge creation.
The Libraries mission is clearly knowledge focused as it seeks to “advance scholarship and critical thinking” and “teach users to identify, locate, assess and use appropriately a full range of information resources to create new knowledge”. Implicit in the teaching mission of the libraries is that accessing and using information sources is a process towards knowledge creation. The libraries therefore provide processes for implementing and supporting the university mission.

3. **The development of information literacy skills is presented as a vehicle for promoting students’ participation in inquiry.**

The synergy and congruence which exist between the goals of the libraries and the university’s mission is further observed in the mission and goals for library instruction. The libraries voice support for the goals of the university by articulating the essential role of information literacy in the process of advancing scholarship and critical thinking. In “contributing to an environment that develops self assured…and productive citizens”, the libraries promote “students’ participation in inquiry through the development of information literacy skills”. In keeping with its focus on developing inquiry and thinking competencies, the libraries are very explicit in explaining the nature of information literacy. Information literacy is not mechanical, button pushing and it goes beyond instruction of information finding tools and resources. Information literacy skills are presented as both mastery of skills and knowledge and understanding of when and how to use those skills.

4. **Information literacy is defined as ability to adapt skills to engage with information to construct meaning.**
The Libraries define information literacy as “responding to an intellectual challenge or information need by adapting skills to locate information, analyze it, and use it to construct meaning”. Implicit in this conceptualization is that information literacy involves a range of skills and attitudes and is in response to an information or cognitive need.

5. **The Libraries promote multiple pathways to develop information literacy skills.**

Web-based learning is one of many pathways used by the libraries to realize goals of enabling information literacy in students. “Instruction staff work with students in classroom, at RD [Reference Desk], via chat, one to one… [to] create print resources and web-based learning”.

6. **Instructional collaboration is an essential process to meet the goal of information literacy integration into the curriculum.**

Collaborating with teaching faculty is essential for realizing the goal of integrating information literacy into the curriculum. The libraries are clear that “while libraries are typically campus leaders in information literacy initiatives, students do not acquire information literacy skills through library instruction. They acquire information literacy skills in the classroom or the laboratory as they conduct research or participate in inquiry”. Instruction staff also “actively collaborate with faculty in all departments to ensure the successful integration of information literacy into the curriculum” This is done through credit bearing classes as well as curriculum mapping which involves “deliberate and measurable student learning outcomes in designated courses” (IL Policy).
Claims developed from concepts and themes in online tutorials

1. Online tutorials address multiple learning outcomes with a focus on developing information literacy competencies of accessing, evaluating and using information sources to locate information.

2. Ethical use of information is addressed in tutorials using a negative approach.

3. Tutorials employ varying teaching strategies to enable knowledge outcomes of critical thinking and inquiry.

4. Online tutorials are designed for integration in LibGuides and web pages of academic disciplines and courses.

Claims/Evidence

1. **Online tutorials address multiple learning outcomes with a focus on developing competencies of accessing, evaluating and using information resources to locate information.**

   The libraries offer information literacy instruction via multiple modes to achieve its goal of teaching “users to identify, locate, assess and use appropriately a full range of information resources to create new knowledge.” A suite of online tutorials and LibGuides address multiple information literacy competencies from developing familiarity with library resources, to accessing, evaluating, using and citing varied sources, as well as searching and research strategies.

   The suite includes research tutorials which aim at enabling a range of information competencies of accessing and using information sources including web resources, research databases, and the libraries’ catalog. The information creation cycle is described in Research Tutorial T2 to teach students about the flow of information and how
scholarship is developed in academia. A library module in LIB01T2 offers search tips for accessing library resources. An academic integrity tutorial details forms of academic dishonesty. Tutorials developed for introductory freshman courses detail searching strategies for accessing and using academic databases. A tutorial developed for the education department details strategies for locating and using subject specific information sources. Video tutorials on citation styles offer procedural skills for citing a range of sources. A series of tutorials on evaluating and citing sources detail strategies and criteria. Over 30 short tutorials provide instruction strategies for finding information through various information resources.

The breadth of online tutorials offered by the libraries is noteworthy. However, although attempting to develop a range of competencies there is a seeming engagement with factual, descriptive details on a multiplicity of sources (web, primary and secondary; Wikipedia, databases, book), search strategies for accessing and using and criteria for evaluating these sources with less attention to the use of the information obtained from the sources which would lead to the construction of meaning. There is an apparent focus on delivery of information via information sources.

2. **Issues of ethical use of information and academic honesty are addressed in tutorials using a negative approach.**

The academic integrity tutorial is designed to “educate students about ethical and fair use of their own and others’ intellectual property” is detailed on types of academic dishonesty from plagiarism, forgery, to facilitating with real life examples. The tutorial focuses however on the negative consequences of plagiarism using terms such as “expelled” “dismissed” and “arrested”. It appears to be constructed on a principle of fear
and mistrust without references to ways of enabling students’ developing their own ideas, and may inhibit “self-assuredness” which is espoused by the university.

3. **Tutorials employ varying teaching strategies to enable knowledge outcomes of critical thinking and inquiry.**

The library adopts varying strategies and approaches to encourage deep learning:

- Problem based learning activities in authentic real-life scenarios are included in the tutorial on evaluating web resources to encourage critical thinking as well as lifelong learning.

- Questions employed in the process of evaluating sources along with exercises to practice the use of these critical thinking questions: E.g. “ask questions of the source and information to find what best suits your need”

- Reflection questions and self tests used in research tutorials activate students’ prior knowledge.

- The use of analogies scaffolds students’ learning: “Searching the web is like shopping at the Salvation Army where you need to sift through a lot of junk to find a few good treasures. Using research databases is like shopping at the Gap where there is less hunting and better quality”.

- Information tutorial Lib01T3 teaches the process of information generation.

4. **Online tutorials are embedded in LibGuides and web pages of academic disciplines and courses.**

Online tutorials, designed as web pages and LibGuides are seamlessly integrated into academic course websites and General Education Courses. The libraries provide detailed
instructions to faculty on the use of entire tutorials or specific modules and these enable collaboration and integration envisioned by the libraries.

Table 4.3

Lib01: Claims from policy documents and online tutorials: Espoused theories and theories-in-use

<table>
<thead>
<tr>
<th>Espoused Theories</th>
<th>Theories-in-use</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The University mission focuses on outcomes of creativity, rational discourse and intellectual discovery in a learning community.</td>
<td>1. Online tutorials address multiple learning outcomes with a focus on developing information literacy competencies of accessing, evaluating and using information sources to locate information.</td>
</tr>
<tr>
<td>2. Libraries support the University’s knowledge-focused mission by advancing scholarship, critical thinking and knowledge creation.</td>
<td>2. Ethical use of information is addressed in tutorials using a negative approach.</td>
</tr>
<tr>
<td>3. The development of information literacy skills is presented as a vehicle for promoting students’ participation in inquiry.</td>
<td>3. Tutorials employ varying teaching strategies to enable knowledge outcomes of critical thinking and inquiry.</td>
</tr>
<tr>
<td>4. Information literacy is defined as ability to adapt skills to engage with information to construct meaning.</td>
<td>4. Online tutorials are designed for integration in LibGuides and web pages of academic disciplines and courses.</td>
</tr>
<tr>
<td>5. The Libraries adopt a variety of teaching initiatives to develop information literacy skills.</td>
<td></td>
</tr>
<tr>
<td>6. Instructional collaboration is an essential pathway to meet the goal of information literacy integration into the curriculum.</td>
<td></td>
</tr>
</tbody>
</table>

Reflective Discussion

Congruence

Congruence and synergy exist between the teaching goals of the libraries and the mission of the university. A student-centered focus on developing personal and social values and knowledge oriented outcomes is evident from the similarity in language employed and includes concepts of critical thinking, intellectual discovery and
scholarship, wisdom and productive citizens. Further, the libraries’ definition and understanding of information literacy supports the mission of the library to “advance critical thinking” as information literacy is conceptualized as engaging with information to enable the construction of meaning. The processes of information literacy instruction will enable the enactment of this understanding of information literacy. The espoused theories of the libraries provide criteria to judge the practice of information literacy as seen in online tutorials. Tutorials give attention to encouraging and enabling critical thinking especially in relation to sources of information.

**Contradictions in congruence**

There is an apparent dilemma however in understandings of “knowledge creation” and “meaning-making” alluded to in the mission of the libraries. An assumption that students’ engagement with information resources will eventually lead to knowledge creation, is not developed or clarified in the policy documents or in the tutorials. Knowledge creation is synonymous with using sources rather than information. This contradiction in meanings of the process of knowledge creation has resulted in a focus in tutorials on developing strategies for locating and using multiple information sources. There is indeed congruence between what the libraries have declared they will do in one instance, to teach students to “identify, locate, assess and use appropriately a full range of information resources to create new knowledge” and what is does via online tutorials. However, the libraries espouse that information literacy goes beyond teaching about locating sources yet there is an apparent focus on teaching about sources.

In addition, although “use of information sources” is an integral part of the process of creating new knowledge, it is presented as the beginning and the end and operationalized only as ethical use. So the process of engaging with information
discovered in sources, and synthesizing this with prior knowledge, as well as other complex processes towards constructing new knowledge are not adequately addressed in the tutorials. Further, while information literacy instruction is promoted as both skills and understanding, there was little attention paid to developing understanding in the tutorials and the process of knowledge creation stops abruptly with the location, evaluation and ethical use of sources.

The coordinator of information literacy explains the focus:

Well…I think that’s probably where we could extend our collaboration efforts a bit beyond where they currently are. But you know sitting here listening to our conversation, I am taking notes. Because I think the assumption is that is our getting in the territory of faculty because that’s faculty’s role. Yes it’s one of those gray areas and that is my impression, but I think that the way we have always approached it is that our collaboration goes thus far, that is our role and that is their role. I can say that with the approach we are taking this fall in that we are trying to do some in person work face to face work, and the session that we are going to craft we have it somewhat developed. Again, its getting a little bit deeper into the critical thinking, we are going to small groups and we are are giving them a messy topic that has two sides to it and have them explore key words and pulling in all these different skills that we tried to teach them taught them in the course guides (tutorial) and have them apply this into finding articles on either sides of the issue in their small groups and kind of talk through that thought process that went into finding articles and evaluating them and determining if they are really are worth pursuing.

But that is as deep as we get in terms with critical thinking skills, the thinking that goes into evaluating and trouble shooting how to work the databases. But beyond that, that is really where that ends.

Yes… I don’t know. Did you have any luck with the knowledge creation stuff because it just seems that it’s getting into a different territory?

She further explains:

I don’t think that we are explicitly clear about what we will do and what we want to do and so this definition of information literacy that we’ve put together and the assumption here that we have not clearly articulated is that we are not actually responsible. In our minds, in our department we don’t think that we responsible for creating all facets of an information literate person. We assume that that is going to take place without us.

The big concern that I have, it’s a K-12 problem in the US and a higher ed problem, that nowhere in the curriculum does anyone takes ownership for this and so it’s very hit or miss. I teach a graduate class in the summer in the College of Education, for teacher practitioners and the whole purpose of this is to try to introduce them to the sources but also to have them create projects where they are integrating those sources to a product
that they have the students use like a tutorial if you will. And I am just thinking about your knowledge creation piece and I think about the teaching that do in a semester long course vs. the teaching I do in a one shot session. My teaching in a semester long course we do generate knowledge, but not in a one shot session.

**Clarity in congruence**

There are indications of consistencies between the libraries’ espoused discourse on curriculum integration and corresponding theories-in-use. Information literacy competencies are integrated in curriculum via online tutorials developed as web pages through a curriculum mapping project.

The coordinator of information literacy confirms:

I know the transfer of knowledge is difficult, but the curriculum mapping [works] because you are building in intentional redundancy and eliminating some redundancy that is not helpful. You are making sure that students get something in a sequenced fashion and a uniformed way.

…I do sort of think that’s the magic bullet and maybe its unrealistic to think that this could happen in a place that’s this size we have between 19-20,000 [students].

She clarifies the integration of tutorials:

These are tutorials for all first year students who will be enrolled in the first semester communication courses and the system utilizes the LibGuides software and we closely worked with the director of the program, about 100 sections of the course will be using this. We basically mined the syllabus and met with the director separately… The things that are required for the students to do are now included in these class web pages.
4.2 Case 2: Lib02

Concepts derived from policy documents

University: Learning; knowledge; polytechnic (hands-on) teaching; life-long learning; academic rigor; leadership; critical thinking; knowledge application and creation; intentional learning; ethical values; global citizenry.

Library: Decision making; communicating; knowledge; learning; curriculum integration; collaboration; research-based pedagogy; lifelong learning; information literacy.

Predominant themes:

University: Knowledge-based outcomes; lifelong learning.

Library: Information literacy processes and outcomes; lifelong learning.

Concepts derived from online tutorials

Searching for books, locating information sources; using sources; search strategies; research concepts and strategies; evaluating sources, evaluation criteria; information structure; analyzing information; ethical use of information; plagiarism; synthesis

Predominant themes: Information literacy outcomes; Information sources

Table 4.4

Lib02: Concepts from mission documents and online tutorials

<table>
<thead>
<tr>
<th>Mission Documents</th>
<th>University</th>
<th>Evidence</th>
<th>Online Tutorials</th>
<th>Evidence</th>
</tr>
</thead>
</table>
Claims developed from concepts in mission documents

1. The University mission focuses on advancing knowledge and preparing students for life.

2. To enable the advancement of knowledge, the University highlights student learning outcomes which focus on critical thinking, 21st century literacies, problem solving, disciplinary learning, problem solving and intentional learning.
3. The University Library supports the University mission by providing a “rich learning environment” enabling the transformation of information into knowledge.

4. The Information Literacy Program supports the missions of the university and library with a multi-pronged agenda aimed at creating an information literate community.

5. Information literacy is defined on a continuum from information access to using information for multiple purposes including problem solving.

6. Instruction resources will foster a range of information literacy competencies which are essential for academic success, lifelong learning and social responsibility.

Claims/Evidence

1. The University mission focuses on advancing knowledge and preparing students for life.

A student-centered outlook to teaching and learning emerges from analysis of the mission and core values of the university. A two-fold mission, “advancing learning and knowledge by linking theory with practice in all disciplines” and “preparing students for lifelong learning, leadership and careers in a multicultural world”(University Mission) is rooted in core values articulated by the university. Core values coalesce around intellectual, practical, ethical and social development of students. So the ‘polytechnic identity” as a core value will ensure that students receive a balance of theoretical and practical education. This is reiterated in another value of learning by doing which involves “active, hands-on approach to learning both in and out of the classroom”. Other core values include ‘academic rigor and excellence’, the development of
‘teacher/scholars’ who will collaborate with students to generate knowledge and develop real world solutions and the ‘celebration of diversity’ to reflect the region.

2. To enable the advancement of knowledge, the University highlights student learning outcomes which focus on critical thinking, 21st century literacies, problem solving, disciplinary and intentional learning.

The student-centered approach is confirmed in the student learning outcomes developed to ensure that the university’s mission of preparing students for life is realized. These outcomes reflect themes of knowledge, ethical values, social responsibility and lifelong learning. The university states that all graduates will develop competencies of critical thinking, problem solving, communication skills, intentional learning, 21st century literacies, quantitative reasoning, disciplinary learning, integrating and transferring learning and global citizenship (Learning Outcomes).

3. The University Library supports the University mission by providing a “rich learning environment” enabling the transformation of information into knowledge.

Within the student-centered, knowledge environment, the Library espouses a three-fold mission echoing themes of knowledge and learning as it seeks to support the “university’s instruction, research and public service mission, to respond to the need of all members of the university community to be library and information literate and to provide a rich learning environment where information is explored and assimilated into knowledge” (Mission Statement). Promoting itself as “the central intellectual and cultural resource of the campus”, the library has an integral role in the realization of the
university’s goals and its instruction program becomes a key area of focus for the activities of the library.

4. **The Information Literacy Program supports the missions of the University and Library with a multi-pronged agenda aimed at “creating an information literate community”**.

As a teaching arm of the library, the Information Literacy Program “supports the teaching, learning and research missions of the university and the library” with a mission that is in sync with dimensions of the university’s mission as it highlights lifelong learning and academic, life and workplace success. A two-fold mission focuses on 1) providing “high-quality instruction material” to foster information literacy competencies and 2) facilitating the “integration of information literacy into the curriculum via collaboration” (Instruction Program Mission and Values).

The information literacy agenda is grounded and rooted in values and assumptions that are reflective of values espoused by the university and the library as well as foundational understandings of information literacy. Key values to which the program is committed include “intentional and sequenced instruction”, embedding of learning outcomes, “research-based pedagogy to enhance student learning” and the “assessment of student learning”. In addition, other central beliefs articulated by the program includes the “integral role of information literacy in the academic experience”; the importance of “course integrated instruction connected with a real academic need”; that “information literacy competencies will foster life long learning” and that the “goal of integrating information literacy can only be achieved through collaboration. The importance of
instructional collaboration and curriculum integration in building information literacy competencies is signaled by repeated references in all instruction related documents.

5. **Information literacy is defined on a continuum from information access to using information for multiple purposes including problem solving and decision making.**

Information literacy is conceptualized by the library as “finding, evaluating and using information effectively to solve problems, make decisions and communicate with others”. This is further explicated as the library contends that information literacy is a “critical 21st century skill-set that provides a foundation for both academic success and life-long learning” and therefore “…cannot be reduced to teaching students how to use the library” (Library Instruction Program Mission and Values). The program references the definition of information literacy articulated in the ACRL *Information Literacy Competency Standards for Higher Education* (ALA, 2000) which is explicit that information literacy is understood as accessing and using information for a specific purpose.

6. **Instruction resources will foster information literacy competencies essential for academic success, lifelong learning and social responsibility.**

The library offers an “active instruction and information literacy program” comprising face-to-face integrated instruction and “high quality” instruction material including “online learning modules to meet the learning needs of students 24/7.” Online tutorials and guides are developed to address competencies including “the ability to articulate an information need, to locate, evaluate and use information effectively and ethically”. The library purports that competencies provide the “foundation for lifelong learning, workplace and civic life”. These tutorials and guides are developed to enable
varied competencies so that while guides include a range of relevant resources, “tutorials tend to focus on the research strategy”. Subject tutorials and guides are customized to specific disciplines and courses. In accordance with the library’s espoused value of curriculum integration, tutorials are designed with quizzes and certificates of completion “making it easy to incorporate them into classes as assignments”.

**Claims developed from concepts in online tutorials**

1. Varied online resources address procedural skills as in searching databases and conceptual skills as in understanding the structure of the web and offer instruction in a range of competencies including research and search strategies, accessing, locating and using information sources, evaluating sources, and ethical use of information.

2. Tutorials focus on search strategies for locating and using information sources.

**Claims/Evidence**

1. Varied online resources address procedural skills as in searching databases and conceptual skills as in understanding the structure of the web and offer instruction in a range of competencies including research and search strategies, accessing, locating and using information sources, evaluating sources, and ethical use of information.

The instruction program is realized through multiple online resources including an array of online tutorials and guides. Tutorials include a 5-part research tutorial, Lib02T2 which addresses advanced strategies in the research process; a 25-minute online equivalent of a face-to-face information literacy workshop which focuses on “basics of using library databases”; a suite of 8 short “How do I…?” tutorials which address “basic library research” skills with a focus on locating and using varied information sources.
These tutorials are arranged in groups on “Find books at the library” “Find articles at the library” “Find books not owned by the library”, and “Finding theses and projects”. Also included in the suite are 7 one-minute ‘Tiny’ tutorials based on the longer how-to tutorials and designed for “on-the-go”, covering “essentials of finding books, DVDs, journals and news articles, and getting books our library doesn’t own”; subject tutorials and guides in majors including engineering, computer science and political science; tutorials developed for specific classes including “women in science”, “civil engineering research methods” and alternate “energy sources”. Tutorials contain quizzes and certificates of completion making it “easy to incorporate them into classes as homework assignments”.

Tutorials address skills-based and knowledge-based information literacy competencies and outcomes, utilizing varied strategies for realizing these outcomes. Many tutorials are highly interactive with step-by-step detailed procedures e.g. using catalog for finding books and other library material; learning-by-doing strategies e.g. simulating searching by requesting the student to input keywords in the catalog or to generate topic ideas for research assignments. The use of dialogue in the research and how-to tutorials is a strategy aimed at scaffolding the user through the learning process as it encourages reflection (Windschitl & Andre, 1998). Pre and post tests as well as review questions are used in the research tutorial.

Competencies addressed include general search strategies (e.g. using Boolean operators, brainstorming keywords) for locating and using sources and the application of these to specific resources including databases and library catalogs; research strategies (e.g. understanding the research process, analyzing an assignment and formulating
research questions); evaluating both information sources and content of the sources which are dealt with in Part 4 of the research tutorial. Critical reflective questions are used throughout the tutorial. Table 4.5 illustrates the competencies addressed in the library’s tutorials.

Table 4.5

**Lib02: Information Literacy outcomes addressed in online tutorials**

<table>
<thead>
<tr>
<th>Information Literacy Competencies</th>
<th>Online Tutorials</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Research Strategies</strong> e.g. analyzing assignment; generating topic ideas; refining topic, formulating research question</td>
<td>5-Part research tutorial</td>
</tr>
<tr>
<td></td>
<td>25-minute online workshop</td>
</tr>
<tr>
<td><strong>Locating and Using Information Sources</strong> e.g. finding books, articles, Using databases, catalogs,</td>
<td>5-Part research Tutorial</td>
</tr>
<tr>
<td></td>
<td>How do I.?... tutorials</td>
</tr>
<tr>
<td></td>
<td>• Find books</td>
</tr>
<tr>
<td></td>
<td>• Find articles</td>
</tr>
<tr>
<td></td>
<td>One Minute tutorials</td>
</tr>
<tr>
<td></td>
<td>• Find books by title, author</td>
</tr>
<tr>
<td></td>
<td>• Find books by topic</td>
</tr>
<tr>
<td></td>
<td>25-Minute online workshop</td>
</tr>
<tr>
<td></td>
<td>Discipline and course tutorials</td>
</tr>
<tr>
<td><strong>Evaluating information, information sources</strong> e.g. evaluating content; evaluating web resources</td>
<td>5-part research tutorial: Evaluating information</td>
</tr>
<tr>
<td></td>
<td>25-minute online workshop</td>
</tr>
<tr>
<td><strong>Searching strategies</strong> e.g. use of Boolean operators;</td>
<td>How do I</td>
</tr>
<tr>
<td><strong>Critical thinking</strong> e.g. analyzing an assignment;</td>
<td>5-part research tutorial</td>
</tr>
<tr>
<td><strong>Knowledge creation</strong> e.g. synthesizing info</td>
<td>5-part research tutorial</td>
</tr>
</tbody>
</table>

2. **Tutorials focus on search strategies for accessing and using information sources.**

While the online tutorials address a range of information literacy competencies, there appears to be a primary focus in the tutorials on developing skills in locating and using
information sources. These skills are addressed in all tutorials with particular emphasis in short tutorials and one-minute tutorials, which deal with strategies in using specific library tools to locate sources, including the online catalog to locate books as well as strategies for searching specific databases to locate articles. These include detailed search strategies (basic and advanced) for using these resources to locate information.

Table 4.6

Lib02: Claims from policy documents and online tutorials: Espoused theories and theories-in-use

<table>
<thead>
<tr>
<th>Espoused Theories</th>
<th>Theories-in-use</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The University mission focuses on advancing knowledge and preparing students for life.</td>
<td>1. Varied online resources address procedural skills as in searching databases and conceptual skills as in understanding the structure of the web and offer instruction in a range of competencies including research and search strategies, accessing, locating and using information sources, evaluating sources, and ethical use of information.</td>
</tr>
<tr>
<td>2. To enable the advancement of knowledge, the University highlights student learning outcomes which focus on critical thinking, 21st century literacies, problem solving, disciplinary learning, problem solving and intentional learning.</td>
<td></td>
</tr>
<tr>
<td>3. The University Library supports the University mission by providing a &quot;rich learning environment&quot; enabling the transformation of information into knowledge.</td>
<td>2. Tutorials focus on search strategies for locating and using information sources.</td>
</tr>
<tr>
<td>4. The Information Literacy Program supports the missions of the university and library with a multi-pronged agenda aimed at creating an information literate community.</td>
<td></td>
</tr>
<tr>
<td>5. Information literacy is defined on a continuum from information access to using information for multiple purposes including problem solving.</td>
<td></td>
</tr>
<tr>
<td>6. Instruction resources will foster a range of information literacy competencies which are essential for academic success, lifelong learning and social responsibility.</td>
<td></td>
</tr>
</tbody>
</table>
Reflective Discussion

Congruence

In depth comparative analysis of the themes from policy documents suggest a complementary relationship between missions of the library and the university. Predominant themes which emerge from the analysis of university documents indicate the university’s focus on achieving knowledge-based outcomes and a holistic development of students towards excellent academic achievement and lifelong learning. Within what is clearly a student-focused environment, the library offers support for the teaching, and research mission of the university, and articulates information and knowledge processes towards building a foundation for lifelong learning.

The mission of the library’s instruction program appears to be in direct sync with the mission of the university as it highlights lifelong learning and academic, life and workplace success. It seems therefore that the instruction activities of the library complement and are intended as part of the process towards realizing the learning outcomes and mission of the university. The library’s mission speaks to developing “services and a learning environment in which information is assimilated into knowledge”. Information literacy instruction becomes essential to this process since competencies are valued as integral for academic and life success and so will partly allow the aims of the university and the library to be achieved.

Further, information literacy is conceptualized as locating and using information to solve problems, make decisions and communicate. To achieve this goal, the program identifies a process of collaboration with faculty and university constituents to facilitate the integration of the competencies into the curriculum. The aspirations of the instruction
program, the values of information literacy espoused and the role of the library in supporting the university’s mission are confirmed by the coordinator of instruction:

It’s an interesting question [how does the instruction program support the university’s mission of advancing knowledge and lifelong learning?] particularly as many persons still want libraries to be repositories of stuff. We are curators of stuff, really centers of teaching and learning. That’s what I want this library to be, not just a place where books live but a place where teaching and learning happens on a lot of different levels. So for our program we are trying to encourage faculty to integrate research into their classes and to then to use our resources. And then to teach students how to do that so that they can become independent lifelong learners being able to identify an information need, and to find and to evaluate and effectively use that information and that is critical, it facilitates and enables life long learning, if you don’t have that you are not going to be an independent life long learner. So I think that’s what we are about.

Concepts and outcomes which emerge from the analysis of the online tutorials suggest however, varying approaches to the practice of information literacy. There are clear attempts to realize the missions, goals and conceptual understanding and values of information literacy articulated in mission statements. Subject tutorials, course/class tutorials and the research tutorial appear to support disciplinary and collaborative approaches to instruction in both modular design and content.

There is some attempt also to enable thinking and knowledge construction competencies in modules on evaluation of information and information sources, reflection questions in introductory modules and research strategies aimed at enabling the development of new knowledge. There is attention given to the ethical use of information in research tutorial and the online workshop.

Incongruence

There are however instances of gaps between espoused theories and theories-in-use, between the mission, values and goals and the practice via online tutorials. The knowledge-based focus in the mission was not always realized in the tutorials. Despite attempts at developing multiple competencies including information use, there was a
focus on procedures for locating and using sources with the majority of tutorials so
designed. There was a greater emphasis on procedural techniques than on building
conceptual understandings and knowledge creation. This focus on finding and accessing
sources seems incongruent with lifelong learning attitudes and approaches which are
espoused by the library. The coordinator of information literacy explains concerning the
predominance of tutorials focusing on accessing and using information sources.

Those were just how to. They were not developed for critical thinking and higher order
skills. If I need to find a book then what can help me do it. Yes those were not designed
for that but we are doing some right now that are designed to be integrated into our lower
division hybrid classes. And if an instructor just wanted to assign them then they could be
used.

She states further:

We are trying to not just to be about finding. But we are focused on information literacy
and the library’s role, we want to help professors in the use of information but we focus
on 4 of the ACRL Standards and so the tutorials are aligned with those four standards and
they so speak directly to them and that’s part of our mission statement.

Unpacking of the Standards (ALA, 2000) indicates a balance of conceptual and
procedural competencies and a continuum of skills from location and accessing to using
information for a purpose. There is however little attention to enabling competencies in
using information for problem solving and decision making as articulated in the library’s
definition of information literacy. This inconsistency is explained by the coordinator of
information literacy:

It’s hard to do that particularly well when you don’t have consistent access to students.
Our working with students is just the one shot and it leads to frustration. So it’s pretty
much hit or miss, some of librarians work more closely with certain professors that others
are able to contribute by consistently going to classes or working in designing
assignments but I would not say that’s typical.
4.3 Case 3: Lib03

Concepts derived from policy documents

*University:* Knowledge; scholarship; reasoning; creative intellectual habits; ethical, religious values; habits of mind; social responsibility; excellence; analysis; synthesis.

*Library:* Communication; evaluation; reflection; lifelong learning; information literacy; information access; information use; information sources; critical thinking; personal meaning; collaboration; integration; plagiarism; ethical use of sources; truth; collaboration; scholars; informed citizens; knowledge and skills; targeted instruction; assessment.

*Predominant themes:*

*University:* Student centered mission; students’ holistic development; knowledge based outcomes; values; social responsibility.

*Library:* Information literacy; students’ holistic development; knowledge-based outcomes and processes; values.

Concepts derived from online tutorials

Ethical use of information; plagiarism; finding sources; evaluating information sources; evaluating information; citing information; citing sources; information structure; information types; critical thinking.

*Predominant themes:* Ethical use of information; information literacy outcomes and processes.
Table 4.7

Lib03: Concepts from mission documents and online tutorials

<table>
<thead>
<tr>
<th>Mission Documents</th>
<th>Online Tutorials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concepts</td>
<td>Evidence</td>
</tr>
<tr>
<td>University</td>
<td></td>
</tr>
<tr>
<td>• Knowledge</td>
<td>• Ethical use of information</td>
</tr>
<tr>
<td>• Scholarship</td>
<td>• Citing information</td>
</tr>
<tr>
<td>• Creativity</td>
<td>• Avoiding plagiarism</td>
</tr>
<tr>
<td>• Values: ethical and religious</td>
<td>• Understanding plagiarism</td>
</tr>
<tr>
<td>• Social responsibility</td>
<td>• Finding sources</td>
</tr>
<tr>
<td>• Analysis</td>
<td>• Search strategies</td>
</tr>
<tr>
<td>• Reflection</td>
<td>• Research strategies</td>
</tr>
<tr>
<td>• Synthesis</td>
<td>• Critically evaluating information</td>
</tr>
<tr>
<td>• Reasoning</td>
<td>• Evaluating sources</td>
</tr>
<tr>
<td>Evidence</td>
<td></td>
</tr>
<tr>
<td>Library</td>
<td></td>
</tr>
<tr>
<td>Concepts</td>
<td>Evidence</td>
</tr>
<tr>
<td>• Information literacy</td>
<td>Library Instruction Mission</td>
</tr>
<tr>
<td>• Transferable knowledge</td>
<td>Core Values</td>
</tr>
<tr>
<td>• Transferable skills</td>
<td></td>
</tr>
<tr>
<td>• Lifelong learning</td>
<td></td>
</tr>
<tr>
<td>• IL defined as access, evaluation, assimilation and of use of information for personal meaning</td>
<td></td>
</tr>
<tr>
<td>• Targeted instruction</td>
<td></td>
</tr>
<tr>
<td>• Collaboration</td>
<td></td>
</tr>
<tr>
<td>• Assessment</td>
<td></td>
</tr>
<tr>
<td>Evidence</td>
<td></td>
</tr>
</tbody>
</table>

Claims developed from concepts in policy documents

1. The mission of the University focuses on knowledge outcomes, personal values and social responsibility.

2. The Library’s espoused discourse reflects dimensions in the knowledge-based mission of the university.

3. Information literacy program is the Library’s agenda for enabling the holistic development of students.
4. Information literacy is defined and understood as competencies needed to access information from sources and transform that information to knowledge for personal and social benefits.

5. Instructional collaboration and curriculum integration are essential for effective development of competencies.

6. Information literacy competencies including knowledge outcomes are developed through online tutorials.

Claims/Evidence

1. The mission of the University focuses on knowledge outcomes, personal values and social responsibility.

A holistic development of students is articulated in the three-dimensional mission of the university. The primary objective of the university is in developing 1) “intellectual potential”, 2) fostering “ethical and religious values”, and 3) fostering “social responsibility” via a “liberal education” program. The mission further explicates knowledge outcomes of analysis, reasoning, assimilation of information; synthesis and the evaluation and use of knowledge via skills of communication.

2. The Library’s espoused discourse reflects dimensions in the knowledge-based mission of the University.

The library acts “in concert with” the mission of the university and expresses outcomes of critical thinking, and objective truth via processes that enable the transformation of information into new knowledge.

3. Information literacy instruction is the Library’s agenda for enabling the holistic development of students.
Information literacy is presented as essential for both academic success and social responsibility. The instruction program articulates processes towards achieving its mission of building “information literate lifelong learners” which will specifically develop “students into scholars”, “informed citizens” and “socially responsible individuals”. There is an emphasis on “transferable knowledge and skills” to realize these goals. The Information literacy agenda focuses on teaching strategies for “accessing and using myriad information resources” and involves the formal teaching of use of “library material” “electronic resources”, “indexes and abstracts”, “books and periodicals”.

4. **Information literacy is defined and understood as competencies needed to access information from sources and to transform that information to knowledge for personal and social benefit.**

The library presents a detailed encompassing conceptualization of information literacy which suggests deep engagement with information and information sources involves skills and understanding and reflects the library’s values and beliefs.

“Information Literacy is the ability to recognize when information is needed; to effectively locate and organize information while considering the myriad of information sources; to logically and critically evaluate and assimilate information while seeking objective truth and personal meaning; to synthesize and use information to communicate conclusions persuasively; and to apply these skills ethically and legally throughout life with a sense of social responsibility.”

5. **Instructional collaboration and curriculum integration are essential for effective development of information literacy competencies.**
Information literacy instruction is framed by values of collaboration, integration and a tiered approach to teaching. The library posits that collaboration with faculty is essential for targeted integration of information literacy instruction to “course objectives and students’ research assignments.

6. **Information literacy competencies including knowledge outcomes are developed through online tutorials.**

The library develops a varied instruction program including face-to-face instruction and online research tutorials which will “provide foundations for research and critical thinking as well as lifelong learning” (Instruction Mission).

**Claims developed from concepts in online tutorials**

1. Tutorials focus on the delivery of information via information sources.

2. Ethical dimensions of the University and Library missions are developed in tutorials.

3. Tutorials enable outcomes of critical thinking and knowledge creation.

4. Online tutorials are utilized to integrate information literacy competencies in the curriculum.

**Claims/Evidence**

1. **Tutorials focus on the delivery of information via information sources**

   An interesting array of online resources is developed by the library to engage students with information sources. A highly interactive “choose your own adventure” movie using student-life scenarios encourages use of the library’s resources in developing a research assignment. Research/course tutorial 1 as support for face-to-face instruction includes short video tutorials on finding books and finding articles via online databases and addresses search strategies. Tutorial Lib03T4 focuses on
strategies for critically engaging with information via a range of information sources. The library adopts a novel approach to types of information sources, and includes in the tutorial documentation on sources such as “civic”, “commercial”, “entertainment” and “scholarly”. Students are asked to consider that where information comes from is important and why. The research/course tutorial, building on the basic strategies of finding sources, addresses approaches to designing a research plan, identifying topic specific resources, evaluating and citing these resources towards creating a product.

The flagship plagiarism tutorial deals with ethical use of information.

2. **Ethical dimensions of the University and Library missions are developed in tutorials.**

A comprehensive plagiarism tutorial is unambiguous in its objectives of alerting students to the institutional and personal consequences of acts of plagiarism whether intentional or unintentional. The tutorial sets a serious tone as it declares plagiarism “threatens the integrity of information, knowledge and scholarship”. In a somewhat didactic style, the tutorial defines plagiarism, highlights recent acts of plagiarism, negative consequences of plagiarism and suggests strategies and practical tips for documenting information and citing sources.

3. **Tutorials enable outcomes of critical thinking and knowledge creation.**

Various approaches are developed to encourage critical thinking competencies in online tutorials. Employing dialogue and a questioning style, tutorial on evaluating information, encourages reflection and a critical stance in relation to evaluating information, in academic and life situations. Modules such as “Unveiling the source”, “questioning the source”, and “the Who Clue” address evaluation issues with reflective
questions rather than an a priori list of criteria, encouraging personal engagement as real life scenarios are utilized. The tutorial also uses a case study approach in which students are exposed to journalistic methods to writing via arguments and questions. In the module “Put your critical thinking cap on”, students are required to “visit, analyze and write about” selected web material and are encouraged to be “thoughtful before drawing conclusions”.

Research tutorial T2 addresses research strategies towards completing a research assignment. The research process is presented as “often iterative and sometimes convoluted”. Students are required to complete a Research Plan for the assignment and are guided through the process in the tutorial.

4. **Online tutorials are utilized to integrate information literacy competencies in the curriculum.**

Developed to enhance face-to-face instruction, tutorials are integrated into introductory writing courses as well as in specific academic programs. All tutorials including 2 research/course tutorials, Lib03TI and Lib03T2; a tutorial on evaluating information; a plagiarism tutorial; and a video tutorial developed to encourage the use of library resources are integrated in the Core Curriculum Writing Program.

**Reflective Discussion**

**Congruence in mission**

The library declares the instruction mission to be “in concert” with the mission of the university. The university mission espouses knowledge outcomes while the library’s espoused discourse uses terms such as critical thinking, synthesis, meaning and objective truth. The apparent consistency in goals for building student learning outcomes between the university and the library is evident in the library’s crafted definition of information
literacy. This conceptualization of information literacy is comprehensive and speaks not only to an information literacy agenda but the value-laden culture of the institution. The signal importance of information literacy in the institution is indicated as the program is used to enact the values and beliefs of the library and the university while addressing foundational values of information literacy of information use and knowledge creation.

The Coordinator of Information Literacy explains the development of the definition:

When we had the workshop [SWOT analysis] for example, we had to read a few articles and one was the Christine Bruce’s article. It was interesting because she has the wisdom conception and the social conception. We actually crafted this definition looking at the ACRL Standards and looking at the mission of [The] University. We found common grounds there and also with the Bruce’s article and with the wisdom conception…. We did not have a lot of ideas for the wisdom one as that seems to be dealing with experience. But we targeted strategies, how we would teach based on these levels of information literacy and based on the mission of [the University].

She details the process of developing areas of focus for the information literacy program:

So my partner and I were looking at the ACRL Information Literacy Competency Standards and we basically measured our program, what we knew of it, against those and identified areas for growth and we shared this with our colleagues. …First thing was articulation with the curriculum so we examined the NEAS Standards (an accreditation body in the North East) and so we looked at that and we looked at that ….Collaboration was the second area and we thought that not only did we need to have collaboration with Faculty but we needed to improve our collaboration with one another. …And the third area was staffing and mainly because we felt that we were too short–staffed. Some of the librarians were feeling overburdened with a lot of courses. …And finally assessment was an area. Yes we were assessing students basically, their affective, like how well they responded to the sessions but we were not getting much of a sense of how well they were understanding information literacy concepts.

She notes:

For me it’s always important to keep coming back to mapping our program to information literacy standards so that we have documentation of what we teach and what we are about and know what our weaknesses are and where we should go.
Congruence in practice

There are clear attempts in the online tutorials to address dimensions of the espoused theories as articulated in mission statements and definition of information literacy. An emphasis on critical thinking in the espoused discourses with concepts such as “reasoning” “evaluating knowledge, “reflection”, is addressed with a measure of success in the highly interactive Evaluating tutorial. The vision and expectations for the tutorial are explicated by the librarian:

We already had a tutorial on critically evaluating information; it might have been called the same thing. That one was simply the checklist of authority, bias etc and then we all read the article called ‘Chuck the checklist’ and so this one even though it still has the checklist in it, it is an attempt to move a little beyond of that, without giving people examples. Students are usually smart enough so let’s go with a site that exists that may be legitimate in certain ways but questionable in other ways and have the students evaluate this so we have a work sheet at the end of the tutorial that asks them to evaluate two websites that have some bias in them but deal with the same issues and look closer at it themselves to figure out who is sponsoring this site, where is the money coming from that pays for this, and the people who wrote it where are they coming from, what is their perspective. We wanted to build the media literacy and things like visual literacy. …Basically we wanted them to if they had been looking at websites or articles or any kind of information, even a video, if they had been looking at it at face value, we wanted them to question this more. So look behind this and think for a moment, who produced this and what might their motive have been. Because we wanted them to see that everything has some bias, even objective things have bias. And yes you do want to teach objective things but we also want them to value subjective material so long as that subjectivity was acknowledged, recognize that too has a function in the greater discussion.

She explains that critical thinking is also encouraged in face-to-face sessions:

So in the fall semester, in that worksheet assignment we would find a hot topic that might lend itself to be interpreted differently, like right now, the health care reform research versus health insurance. I think we used media ownership … And we have some lookup very related terms and their result would be the same because the terms were so related and in some cases they got things slanted a certain way so half the class would get sites slanted in one direction and half the other. They were asked to comment on why the terms brought up different results.

So we just have an organic discussion about the structure of each of these types of publications, when they have them in hand and sometimes the students would ask questions or even challenge what we are saying; like if we making a blanket statement about what is scholarly. I was lucky enough to have a student in class once who said that in some cases people have submitted articles that are falsified
or something in these scholarly journals, and that is true so we would talk a little bit about that.

The library articulates foundational information literacy values of collaboration and integration as essential for effective development of competencies. Tutorials indicate deliberate and successful attempts at integration in the Writing Program.

**Contradictions in congruence**

The ethical dimension of the university mission is played out in teaching about plagiarism. The library addresses the university’s goal of ethics, truth and personal integrity via the very detailed and somewhat contradictory plagiarism tutorial. The tutorial speaks to these ethical issues albeit on a seeming assumption of mistrust as it is cast in negative language. While attention is given to encouraging effective documentation and note-taking, the tutorial does not address complex competencies of synthesis and knowledge creation which may be central issues in plagiarism by students.

The Coordinator of information literacy acknowledges an apparent strength of the tutorial while voicing her inhibitions about the use of it:

I want to say faculty outreach [is the strength]. It was really surprising to me because I built it as a tool to help students. But if you ask me what do I think help students most with plagiarism, I don’t think it’s a tutorial, I think it’s actually talking about it. I read an article where someone used clickers to anonymously poll students about what they understood plagiarism to be and whether or not they had committed it and the anonymity made them feel really safe and informed the librarian about what was going on and they can have frank discussion. I think that is a better way of learning it. But for the faculty, it gave them a (I don’t want to be negative because I did not foresee any of it) but it almost gave them a backup, like I told you to watch the tutorial, I knew you watched the tutorial and you still plagiarized. I had a letter from a professor as late as a few months ago, that was forwarded to me thanking me for making this tutorial as he had identified that a student plagiarized and he knew that the student had done the tutorial. So this was his ammunition. He did not use that word but I was thinking this is kind of faculty outreach. I am not sure it’s such a great student teaching tool if I am honest with you.
A focus on the delivery of information via information sources is in sync with stated outcomes of the instruction program, “formal teaching of use of library material, electronic resources, indexes and abstracts books and periodicals. The information literacy definition also speaks to “considering the myriad of information sources”.

**Incongruence**

Inconsistencies exist between the espoused theories and the theories-in-use of the library’s information literacy program. Despite attention to areas of ethical use of information, the tutorials focus on the delivery of information via information sources without a corresponding attention to using information to create new knowledge.

The Coordinator of information literacy explains:

Right now we really address the more basic competencies, how to use Boolean operators, how to select databases to search, how to evaluate a source, how to find peer review and that sort of thing. And now the English faculty are looking at their curriculum and ways to add research components throughout the curriculum, not just the basic introductory English classes. And we are lucky that they have reached out to me to be a part of the discussion. And one of the things is also to bring the higher level competencies to the curriculum. So more of the evaluating, summarizing, incorporating …so bringing that into the curriculum as well. So it’s not just coming into the library and you learn how to choose a database to get an article and that its full text but its looking at it further down the line, a little more long term.

Inherent challenges in information literacy instruction are alluded to:

And I think part of the challenge is that information literacy is so wide ranging from how to use a Boolean operator to taking information and creating new knowledge. There is this huge variety so I think to integrate so much into the curriculum is so difficult, especially the more complex things.

In addition the library espouses tiered instruction yet the tutorials suggest instructional interventions only at the First Year level.

This is explained by the Coordinator:

So that was our mission, so we actually brainstormed as to how we could do this. We actually drew pictures of how might we organize the instruction program but that was one area we never resolved like everybody drew a different picture and there were some great
ideas but there was no consensus and even if we had chosen one of the ideas there would have been many hurdles and we never got to that we had other things we had to work on first.

Lifelong learning is espoused by the university and the mission of the library speaks to developing global citizens and social responsibility, yet there was minimal attention given in the tutorials to these outcomes. The librarian explains how the library addresses lifelong learning:

I would go as far to say even the exhibits that the library puts up, and we don’t necessarily classify those under the library instruction program, but they are part of the information literacy program, because we will have exhibits highlighting parts of the world or a situation going on and it brings the awareness and perhaps these take things that are not covered by our news media and bring them to students’ awareness which hopefully will make them more socially responsible if they borrow that DVD on that topic or if they read that book because it looked interesting and was highlighted or maybe they went on the service trip and this book is related to that country and they are curious enough to read it. So we are really trying to connect with the curriculum, the service trips, and hopefully their personal lives and we hope that maybe they will pick up that book and they will become more aware and thus more empathetic and take action because [religious] pedagogy calls for students to reflect first. We are part of the reflection, we want to inform that reflection but also take action.
4. 4 Case 4: Lib04

Concepts derived from policy documents

*University:* Learning; knowledge; scholarship; research; discovery; understanding; creativity; lifelong learning; values; truth; academic freedom; partnerships

*Library:* Intellectual leadership; information consumers; information creators; analyzing information; evaluating information; synthesizing information; information use; research process; cooperation; information literacy.

*Predominant Themes:*

*University:* Knowledge-based outcomes; values

*Library:* Knowledge-based outcomes and processes; using information; information literacy.

Concepts derived from online tutorials

Research strategies; search strategies; information use; finding sources; critically evaluating sources; finding information; reflection; critical thinking; citing sources; information structure; time management; synthesis; using information; supporting arguments; evaluating information; writing process; developing a product

*Predominant themes:*

Information literacy outcomes; using information and information sources; knowledge creation.

Table 4.8

Lib04: Concepts from mission documents and online tutorials

<table>
<thead>
<tr>
<th>Mission Documents</th>
<th>Online Tutorials</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Concepts</strong></td>
<td><strong>Evidence</strong></td>
</tr>
<tr>
<td>Knowledge</td>
<td>Research Tutorial 1</td>
</tr>
<tr>
<td>Knowledge creation</td>
<td>Using information</td>
</tr>
<tr>
<td></td>
<td>University Mission</td>
</tr>
<tr>
<td><strong>Concepts</strong></td>
<td><strong>Evidence</strong></td>
</tr>
<tr>
<td>Research strategies</td>
<td></td>
</tr>
<tr>
<td>Using information</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Library</td>
<td>Concepts</td>
</tr>
<tr>
<td>---------</td>
<td>----------</td>
</tr>
<tr>
<td></td>
<td>University</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Library</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Library</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Claims developed from concepts in policy documents

1. A three-fold University mission focuses on generating, sharing and applying knowledge through research, teaching/learning and public service.

2. The Libraries provide intellectual support towards advancing knowledge.

3. Information literacy is promoted as essential in addressing challenges associated with the information age including effective use of information.

4. Information literacy is defined as a set of competencies needed to be effective information consumers and information creators.

5. Collaboration is essential to the goals of facilitating student learning outcomes and integrating information literacy competencies in the curriculum.

6. A multi-pronged user education program is developed to realize the information literacy agenda.

Claims/Evidence

1. A three-fold University mission focuses on generating, sharing and applying knowledge.

The University articulates an explicit knowledge-based three-fold mission in which knowledge, understanding and creativity are generated through “research, scholarship and artistic activity”; knowledge is shared through a range of teaching and learning programs; and knowledge is applied and exchanged by applying the knowledge “to community problems” and to “advance the nation.”

2. The Libraries provide intellectual support towards advancing knowledge.

Promoted as a “strategic asset for the university”, the libraries aim at providing “intellectual leadership and extraordinary information experiences toward the advancement of knowledge” (Libraries Vision and Mission). This goal, further explicated
in the mission speaks to “inspiring learning and discovery” via collaborative initiatives and “information resources”.

3. **Information literacy instruction is promoted as essential in addressing challenges associated with the Information Age including effective use of information.**

The libraries contend that students are challenged by the demands of the Information Age and that technology skills as offered do not equip students to “use effectively the amount of information now available.” Information literacy instruction is therefore presented as essential to enabling students’ effective use of information towards creating new knowledge. The libraries aim at creating an information literate community and equipping students with necessary competencies.

4. **Information literacy is defined as a set of competencies needed to be effective information consumers and information creators.**

To enable the process of advancing knowledge-creation and knowledge application via information literacy, the libraries promote information literacy as a set of competencies needed for using information effectively and creating further information. Competencies include “understanding the structure of information and knowledge”, “creating and executing strategies for finding the needed information”, “analyzing and evaluating the information”, and “synthesizing and integrating information so it can be used to complete an assignment or solve a problem”. These competencies are needed for success in academia as a “master student” as well as for lifelong learning.
5. **Collaboration is essential to the goals of facilitating student learning outcomes and integrating information literacy competencies in the curriculum.**

The essential role of instructional collaboration in the information literacy process is underscored by multiple references to the process. Among these are “Information literacy depends on cooperation among classroom faculty” and the program will “promote an information literate campus in partnership with academic units (User Education mission). The outcome of collaboration is linked to the knowledge creation process as the libraries suggest that the information literacy competencies must be integrated in the curriculum for effective development of competencies. An essential goal for the libraries, focus on “integrating information literacy into curriculum and practice”.

6. **A multi-pronged instructional program develops essential skills in information literacy from accessing information to using information and information sources to develop products.**

In addition to face-to-face workshops and classes, the libraries developed a suite of online tools including recorded workshops and online tutorials. A comprehensive research tutorial was developed to offer students an opportunity to “build skills-set to be competent and effective library users and web researchers” with strategies for “finding quality information sources” and strategies to guide the “research process”. The flagship tutorial is developed to assist students in creating timely assignments and to be used by faculty to assist students in the “step-by-step process”.
Claims developed from concepts in online tutorials

1. Online tutorials address multiple information literacy competencies focusing on strategies for locating, and using, varied information sources.

2. Information literacy is practiced in part as locating, using and evaluating information and information sources to develop a product.

3. Tutorials are designed to be used by faculty for integration of outcomes in the curriculum.

Claims/Evidence

1. Online tutorials address multiple information literacy competencies focusing on search strategies for locating and using varied information sources.

   Libraries offer varied online resources including research tutorials, short point-of-need tutorials and online workshops:

   a. Research Tutorial 1: Online equivalent of face-to-face instruction

   b. Short tutorials: Searching for Books; Searching for Articles

   c. Research Tutorial 2

   d. Lib03T3 tutorial on developing assignments

These tutorials aim at developing varied information literacy competencies including research and search strategies in locating, using, evaluating and citing information and information sources:

   a. Strategies for long/short papers: Research Tutorials 1, 2; Lib04T3

   b. Research Tutorial 2: Eight modules covering research process; finding multiple information sources and types of information e.g. facts, opinions, evaluating and citing sources

   c. Finding sources: Short Tutorials; Research Tutorial 1
d. Locating and using information; writing process: Assignment Tutorial

e. Information use addressed in module on the ethical use of sources.

Tutorials however focus on strategies for accessing and using varied information resources. There is a seeming emphasis on skills in accessing and using resources as all tutorials address these competencies.

2. **Information literacy is practiced in part as locating, evaluating and using information and information sources to develop a product.**

In addition to a focus on the use of information sources, tutorials offer instruction in using information to develop research-based or creative products. Lib03T3 tutorial which was designed primarily to assist students with managing time needed to complete different types of assignments includes steps in the process of creating a project, from developing a research strategy, accessing sources, searching to locate sources, and using information from sources in the creation of the project.

3. **Tutorials are designed to be used by faculty for integration into the curriculum**

Research tutorials, Lib04T1 and Lib04T2 are integral components of First Year Freshman courses. Assignment tutorial Lib04T3 is accompanied by detailed instruction to faculty and instructors for use in disciplinary courses.

**Reflective Discussion**

**Congruence**

Apparent consistencies exist between the knowledge-based missions of the university and the libraries. The university mission and goals coalesce around explicit knowledge outcomes and processes of creating, sharing and applying knowledge. Equally explicit is the mission of the libraries as it purports to advance knowledge creation and
proposes information literacy as essential in realizing this goal. The focused understanding of information literacy instruction as developing knowledge and skills to enable the use of information to solve problems, underscores the essential role of information literacy in accomplishing the library’s goals. Knowledge creation is enacted through the process of information literacy instruction. Outcomes for instruction tools reflect values and understandings of information literacy as enabling knowledge change. These outcomes are conceptualized on a continuum from access to use of information. They include teaching both procedural skills and knowledge competencies aimed at creating new knowledge as reflected in the statement, “synthesizing and integrating information so it can be used to complete an assignment or solve a problem.” The comprehensive, flagship tutorial is developed “to build skills-set to be competent and effective library users and web researchers”. The tutorial addresses the research process which includes steps in choosing a topic and designing search strategies. In-depth analysis of concepts and outcomes of the range of tutorials suggests attempts at realizing the overall goals.

Of signal note in enabling the knowledge creation process is the tutorial developed to “assist students to complete assignments”, including a research paper, a speech or a video. Clear guidelines towards developing a product are detailed and the iterative nature of the research process is discussed. The tutorial addresses the goal of developing the student as a “consumer” and “creator of information”. This tutorial includes guidelines for accessing information, evaluating, and using information. Information use is described by the coordinator of information literacy:

I think the using is really different for us and very intentional. Most information literacy programs deal with a very small spectrum of information literacy which is basically the ability to find information. Some programs will have the ability to evaluate as well but
and we are really trying to move more into using and manipulating it to create something new. We are very much moving into ethical use piece so we have been moving for years now to expand the notion of what information literacy is to encompass some of those things as well…” We have developed information commons that are called Smart Learning Commons here and the information commons has a huge production component. So we are really taking on an active role on campus to help students create and manipulate media. So we have staff who are just dedicated to consult with staff, faculty and students. Just last year we had a couple dozen consultations with faculty to help them incorporate media productions and evaluation into their courses. So we are moving beyond just the written word paper. For our [Lib04T3 tutorial] we just created a new beta version and within that we have writing lab reports as one assignment. I will give you the link to the beta version. So we are really moving beyond the kind of research paper paradigm. We have a librarian who primarily focuses on Media literacy. We have him working closely with our digital media center on campus. This summer he did a whole week with faculty to help them integrate media into the classroom.

Other areas of congruence include attempts at collaboration with faculty towards integrating competencies in the curriculum.

**Incongruence**

Yet it seems that the clarity of knowledge and information outcomes espoused may not be realized in all online tutorials. Disconnects exist between the conception of information literacy and how it is practiced in a few tutorials. With a focus on developing knowledge about and competencies in using a variety of information sources, it appears that ‘information use’ becomes synonymous with using information sources in these tutorials. Further there is a focus on delivery of information so that students will become more consumers of information without creating information. The criteria for information literacy as espoused in the definition are realized only in part.

This apparent disconnect and the challenges associated with teaching “using information” is explained by the coordinator of information literacy, “Yes I see that there is a gap! It’s something that we are trying to experiment with more and more with in the media productions but I don’t feel we are at the point where we could design such a tutorial”.
4.5 Case 5: Lib05

**Concepts derived from policy documents**

*University*: Learning, discovery, service; scholarship, knowledge, intellectual skills; values, lifelong learning; service; student-centered teaching; global citizenry

*Library*: Information literacy; learning; collaboration; reflection; critical thinking; curriculum integration; outcomes-based teaching; knowledge transfer; excellent instruction; information sources; technology

*Predominant themes*:

*University*: Knowledge-based outcomes; social responsibility; lifelong learning

*Library*: Learning; Information literacy; knowledge-based outcomes and processes

**Concepts from the online tutorials**

Research strategies; searching skills; finding sources; information tools; information sources; evaluating sources; evaluating information; using information sources; writing strategies; plagiarism, academic honesty; citing sources

*Predominant themes*: Information literacy processes and outcomes; information sources.

Table 4.9

*Lib05: Concepts from mission documents and online tutorials*

<table>
<thead>
<tr>
<th>Mission Documents</th>
<th>Online Tutorials</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>University</strong></td>
<td><strong>Evidence</strong></td>
</tr>
<tr>
<td>Concepts</td>
<td>Concepts</td>
</tr>
<tr>
<td>Learning</td>
<td>Searching</td>
</tr>
<tr>
<td>Discovery</td>
<td>Strategies</td>
</tr>
<tr>
<td>Knowledge</td>
<td>Research</td>
</tr>
<tr>
<td>Lifelong learning</td>
<td>strategies</td>
</tr>
<tr>
<td>Intellectual skills</td>
<td>Accessing</td>
</tr>
<tr>
<td>Thinking skills</td>
<td>sources</td>
</tr>
<tr>
<td>Global citizenry</td>
<td>Finding/locating</td>
</tr>
<tr>
<td></td>
<td>sources</td>
</tr>
<tr>
<td></td>
<td>Information tools</td>
</tr>
<tr>
<td></td>
<td>Information Literacy</td>
</tr>
<tr>
<td></td>
<td>Evidence</td>
</tr>
<tr>
<td></td>
<td>Research Tutorial</td>
</tr>
<tr>
<td></td>
<td>Plagiarism Tutorial</td>
</tr>
<tr>
<td></td>
<td>Citation Tutorial</td>
</tr>
</tbody>
</table>


### Claims developed from concepts and themes in policy documents

1. The University mission focuses on advancing knowledge and lifelong learning.

2. The Libraries mission is to advance and support learning.

3. Instructional services support the University and Libraries missions with an information literacy agenda aimed at the delivery of information.

4. Information literacy is defined on a continuum of finding and using information.

5. Collaboration and curriculum integration are espoused as defining characteristics of information literacy instruction.

### Claims/Evidence

1. **The University mission focuses on advancing knowledge and lifelong learning in exemplary teaching/learning environments.**

   There is a strong proclivity towards the development of knowledge outcomes and processes in the mission of the university. The university aims at developing exemplary learning environments to facilitate students’ “acquisition of knowledge” and for the
development of “intellectual skills” towards lifelong learning and “responsibility as
global citizens”. It will encourage scholarship-based teaching, reflection and the
advancement of knowledge via research.

2. **The Libraries mission is to support and advance learning.**

The libraries mission implicitly expresses support for the mission of the university in
its thrust to “support and advance learning”. To enable this support, the libraries
articulate goals to provide environments which encourage reflection and collaborative
learning and to provide leadership in information literacy.

3. **Instructional services support the University and Libraries missions with an
information literacy agenda.**

The mission and goals of the libraries are partly enacted through the programs of the
instructional services department. A three-fold instruction mission guides the programs
in supporting the libraries’ undertaking. The overall goal of providing “excellent
instructional services, includes 1) the development of “techniques and modes of
instruction taking into account different learning styles and location of users”, 2)
targeting of specific classes and groups and 3) the provision of instruction in the retrieval
and use of information sources to groups and individuals.

4. **Information literacy is defined on a continuum from access to use of
information.**

Information literacy is defined according to the ACRL *Information Literacy
Competency Standards for Higher Education* (ALA, 2000) as the set of skills needed to
find, retrieve, analyze and use information. The libraries’ position on information literacy
is framed by a documented set of characteristics which highlight differences between the
concepts of “bibliographic instruction” and “information literacy”. The document espouses values of collaborative responsibility in information literacy instruction, the pervasive integration of information literacy competencies throughout the curriculum, the provision of multiple learning opportunities to enable the transfer of knowledge to new environments and the inclusion of critical thinking, knowledge-based outcomes in instructional initiatives, with the expanded role of technology.

5. **Collaboration and curriculum integration are espoused as defining characteristics of information literacy instruction.**

The integral role of collaboration in information literacy is articulated in the document describing the differences between bibliographic instruction and information literacy, which states that rather than being controlled by librarians, information literacy is a collaborative responsibility. Information literacy is promoted as integral rather than tangential and external to the academic curriculum.

**Claims developed from concepts in online tutorials**

1. Online tutorials address varied learning outcomes focusing on skills and strategies for finding and using information sources.

2. Online tutorials give attention to developing knowledge outcomes of critical thinking and utilization of information.

3. Tutorials address the ethical use of information.

**Claims/Evidence**

1. **Online tutorials address varied learning outcomes focusing on skills and strategies for finding and using information sources.**

   An extensive suite of tutorials including 30 short tutorials and a comprehensive research tutorial aims at developing conceptual and skills-based competencies from
“understanding information structure” to “finding primary source articles” via databases and “finding books” via the online catalogue. Included in this suite are a plagiarism tutorial, a tutorial on citation styles, tutorials for engaging with specific library resources, and numerous subject-specific tutorials covering resources in the social sciences, communication and nursing.

In keeping with a goal of the instruction mission of “providing instruction in the retrieval and use of information sources”, there is a seeming focus on explicating strategies and developing skills in finding a wide arena of information sources including media sources, books, articles, legal and government resources, statistical resources and specific subject related resources. A “Find it” theme emerges from these tutorials and learning objects as over 20 have titles beginning with ‘Finding…’ Although learning outcomes are not explicitly stated for these tutorials, they are implied by the titles. Figure 4.1 illustrates this theme.

Additional competencies are however dealt with in the tutorials including skills-based procedural strategies for locating the resources as well as conceptual knowledge about the types of sources and tools. For example, the subject specific tutorial on finding primary sources in the social sciences devotes a section to explaining how primary information is created, key terms (e.g. methodology, analysis and results) for identifying primary research and detailed examples of these in different articles.
Figure 4.1 Lib05: Short tutorials on finding information sources

Tutorials are highly interactive, with opportunities for students to do hands on exercises. Varied teaching strategies are employed to enable deep learning. Short tutorials begin with refutational text, a strategy employed in instruction to activate students’ prior knowledge by directly stating misconceptions about a topic. The misconception is refuted and a plausible alternative theory, belief, or idea that is shown to be more effective is presented (Hynd, 2001, 2003). In the short tutorial on finding books the opening script reads as follows:

“Ok, so you need to find a book in the library and you don’t know where to start. Well I don’t (emphasis in voice) recommend going up to the stacks and start browsing the books to try to hope to find what you need. The best place to start is to use the library’s catalog.” (Short Tutorial)
The use of refutational text as a teaching strategy encourages students to question their prior behavior. In this case browsing the shelves in a school library may have been a habit that worked effectively.

2. **Online tutorials give attention to developing knowledge outcomes.**

The flagship research tutorial which includes eight chapters, covers multiple competencies including research strategies, finding sources, understanding information structure, evaluating sources, citing sources as well as a brief section on using information in the chapter “From Research to Writing”(see figure 4.2). The contexts utilized for skills taught in the tutorial, procedural as well as conceptual, are students’ approaches to developing research papers. Explicit learning outcomes articulated for the tutorial include a) preparing for a research project b) choosing appropriate tools and sources c) composing and revising effective search strategies d) searching for materials in library collections e) searching for articles in journals, magazines in general databases f) searching for information on the internet g) integrating research into writing skillfully and responsibly h) citing sources in different styles. Figure 4.2 illustrates the chapter on writing.

The tutorial devotes two chapters to discussing research strategies including, building a research plan, developing a topic, composing a research statement as well searching strategies for utilizing databases, the catalog and the web. The evaluation of web pages is addressed very briefly via a list of criteria in the chapter on searching the web.

Teaching strategies employed in this tutorial also allow for deep learning and include attention grabbing real-life conversations between students on approaches to doing research projects, questions for reflecting on concepts addressed, practice
exercises, quiz questions throughout and a comprehensive quiz at the end and a review section for each chapter.

Figure 4.2 Lib05 writing module in research tutorial

An innovative online tool, Lib05T4 expresses the following learning outcomes:

- Understand that information can be found in a variety of sources.
- Understand the function and use of information sources.
- Identify useful information from the library’s catalog and online databases.
- Understand the way collections of information are organized and accessed.
- Determine when to cite a source and cite it properly using a specific citation style.

While maintaining a focus on using sources (six chapters of the research tutorial are devoted to enabling deep engagement with varied information sources), tutorials address conceptual knowledge and discuss the research process towards students creating products.

3. Tutorials address the ethical use of information.

A plagiarism video tutorial features the challenges students face in producing research projects, their lack of confidence in developing their own ideas and offers
techniques for avoiding plagiarism. The tutorial uses a non threatening manner of teaching about plagiarism in a context of a student’s authentic conversations with other students and highlights appropriate and inappropriate action. Questions posed after each episode allow reflection and offer explanatory answers and suggestions for appropriate practice in the responsible use of information. A tutorial on citation styles confirms a seeming thrust towards developing competencies and knowledge in ethical use of information.

Table 4.10

*Lib05: Claims from policy documents and online tutorials: Espoused theories and theories-in-use*

<table>
<thead>
<tr>
<th>Espoused Theories</th>
<th>Theories-in-use</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. University mission focuses on advancing knowledge and lifelong learning</td>
<td>1. Online tutorials address varied learning outcomes and focus on skills and strategies for locating and using information sources</td>
</tr>
<tr>
<td>2. The Libraries mission is to advance and support learning.</td>
<td>2. Online tutorials give attention to developing knowledge outcomes</td>
</tr>
<tr>
<td>3. Instructional services support the University and Libraries missions with an information literacy agenda.</td>
<td>3. Tutorials address the ethical use of information</td>
</tr>
<tr>
<td>4. Information literacy is defined on a continuum of finding and using information</td>
<td></td>
</tr>
<tr>
<td>5. Collaboration and curriculum integration are espoused as defining characteristics of information literacy instruction</td>
<td></td>
</tr>
</tbody>
</table>

**Reflective Discussion**

Claims developed from the rigorous analysis of concepts and themes in mission statements and online tutorials indicate varying levels of congruence and incongruence between the espoused theories and theories-in-use of information literacy.
**Congruence**

Congruence exists between the overall instructional goals of the libraries and university. There appears to be an unambiguous focus on knowledge outcomes and processes for achieving these outcomes as articulated in the missions of the university and the libraries. Learning, intellectual habits and thinking skills are common themes which emerge from concepts identified in these mission statements. The libraries espouse excellent instruction and learning environments to realize these goals. The instructional services department declares support for the missions of the libraries with an explicit goal to “teach strategies for locating and using information sources”.

Tutorials are developed to assist the libraries in meeting instructional goals and give attention to multiple learning outcomes. Various techniques are employed to enable knowledge outcomes. Critical thinking is addressed in the plagiarism tutorial, the research tutorial and subject tutorials. The major goal for instruction is fully realized in all tutorials and specifically short ‘find…’ tutorials which detail strategies for locating and using multiple information sources.

**Paradox in congruence**

It seems however that there are dilemmas in the library’s instruction goals for supporting a knowledge oriented library mission. Predominant themes identified in the espoused documents relate to learning, knowledge and foundational values of information literacy. Information literacy values of the instruction program stress outcomes-based learning, knowledge-based outcomes, critical thinking, instructional collaboration, curriculum integration, and multiple learning opportunities. However it is not clear from the tutorials whether these values influence the goals developed for instruction. Further, the definition of information literacy is guided by the ACRL
Information Literacy Competency Standards (ALA, 2000) and is conceptualized on a continuum from access to use of information. However, the libraries instruction mission is very explicit, “instruction in locating and use of information sources”. It may be that for the purposes of information literacy instruction, “use of information” becomes synonymous with using sources of information.

What results from this approach is a dilemma in congruence since there is an actual aligning of learning outcomes identified in the tutorials with the stated goal of the instruction department. The instruction mission is realized in what is an obvious focus on competencies in locating and using a plethora of information sources. However this seems to be in contradiction to information literacy values and mission of the library which focus on knowledge construction.

Further, the tutorials’ focus on using sources may not enable lifelong learning which is espoused by the library and the university.

The seeming incongruence between articulated value of information literacy as developing conceptual understandings and knowledge creation and the focus on using sources in the tutorials is explained by the Coordinator of Instruction:

That’s definitely a work in progress [mission statement]. We are not doing as much of that. I would say that in some areas more than others. For example the librarian in Business, he has done a really good job there in actually meeting with the students and seeing the final results of how they use the resources he presented by looking at their final project. O we are doing more of that. We are doing a pilot with the Communication class where the person who is working with the professor has developed a rubric she is going to present to the students and the final project will be assessed using the rubrics she has developed. We have a sub group that is going to look at information literacy and critical thinking and how they can be evaluated and assessed as part of the university accreditation with SACS which is our accrediting body.

She also clarifies the library’s role in enabling lifelong learning:

Definitely we do some things in the library. Right now we have two persons who are responsible for developing programming that gets beyond the library. For example we have a speaker series that we sponsor. The one coming up next week is a discussion led
by a sociology professor on John Grisham’s book, *The Innocent Man*, so they are going to talk about justice in American society. We do about five of those a year. We just had a story teller, the library sponsored him and we had school children in to hear this story teller. And he had a session for teachers and librarians. These are some of the things we are doing for lifelong learning, offering the kinds of programs and opportunities for persons in the community to hear speakers they might not have heard otherwise.

The integral role of collaborative teaching in enabling critical thinking is also addressed:

Ultimately assessing information literacy cannot fall entirely in the library. It has to be a part of the university assessment and by doing this through the General Education Council, its becoming a university wide initiative. I think that’s the direction we have to move in., making the assessment of information literacy on the same par with critical thinking and making it everyone’s responsibility at the university not just one group’s responsibility. The whole curriculum should be teaching information literacy and critical thinking and other skills, not just one group…So we are trying to move in that direction. And that’s where the whole idea of collaboration comes in. We recognize that we cannot do it alone. It has to be within the context of the disciplines and what the students are doing. So I am happy for that direction.
4.6 Case 6: Lib06

Concepts derived from policy documents

*University:* Scholarship; research; knowledge; creativity; critical thinking; ethical values.

*Library:* Intellectual discovery; learning; information literacy; lifelong learning; future learning; collaboration; curriculum integration; problem solving; information gathering; synthesis; analysis; tiered learning.

*Predominant Themes:*

*University:* Knowledge-based outcomes; creative knowledge production; ethical application and use of knowledge.

*Library:* Knowledge-based processes; Information literacy outcomes.

Concepts derived from online tutorials

Locating sources; using information sources; using information; research strategies; search strategies; plagiarism; evaluating information; evaluating sources; information cycle; information structure; research log; reflection

*Predominant Themes:*

Information literacy; information access; lifelong learning

Table 4.11

Lib06: Concepts from mission documents and online tutorials

<table>
<thead>
<tr>
<th>University</th>
<th>Mission Documents</th>
<th>Evidence</th>
<th>Online Tutorials</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concepts</td>
<td>Scholarship</td>
<td>University Mission</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Research</td>
<td>University Goals</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Creativity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Knowledge</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Knowledge application</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concepts</td>
<td>Locating sources</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Using sources</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Research Strategies</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Search strategies</td>
<td></td>
<td>Research Tutorial T1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Information Tutorial T2</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Newspaper Tutorial T3</td>
<td></td>
</tr>
</tbody>
</table>
### Library Concepts
- Intellectual discovery
- Lifelong learning
- Information literacy
- Learning
- Research
- Partnerships
- IL as knowledge and skills
- Curriculum integration
- Excellence
- Information gathering skills

### Evidence
- Libraries Mission
- Libraries Values
- Overview of IL
- IL Policy
- Libraries Strategic Plan 2008-2012

### Claims developed from concepts in policy documents

1. Knowledge production and use are outcomes of the research, instruction and creative activities of the University.

2. The mission of the Libraries supports the University and advances intellectual discovery, information literacy and lifelong learning.

3. Information literacy is defined as having four components of knowledge, skills, application of knowledge and social context.

4. Collaboration with University constituents is the vehicle through which information literacy will be progressively integrated into the curriculum.
5. Tutorials provide basic information strategies and key information literacy competencies of information gathering, synthesis and analysis and critical thinking.

**Claims/Evidence**

1. **Knowledge production and knowledge use are outcomes of the research, instruction, and creative activities of the University.**

   Through research, scholarship and creative activity, the university mission aims at promoting economic development and global understanding through the “expansion of knowledge and its applications”. An essential goal of the university is the holistic development of students through a process of “best education”. The mission states that instruction for all levels of students, undergraduate, graduate, professional and distance will be informed by research and scholarship. This research-based instruction will produce “knowledgeable, critical, creative and ethical students”.

2. **The mission of the Libraries supports the University and will advance intellectual discovery, information literacy and lifelong learning.**

   The libraries are projected as “a strategic asset to the university” and articulate the provision of excellent services that will connect students to the “world of information and ideas” and enable future learning. Within the student-centered, knowledge-based environment promoted by the university, the mission of the libraries purports to “advance intellectual discovery, information literacy and lifelong learning” in support of the university’s strategic teaching, research and learning goals. Information literacy is promoted as “an essential learning outcome” for all students.

3. **Information literacy is defined as having four components of knowledge, skills, application of knowledge and social context for using knowledge.**
The libraries adopt a novel and detailed approach to defining information literacy. Information literacy is conceptualized as composing four interconnected components of 1) knowledge of information sources and the organization of information; 2) skills in finding, evaluating, using and effectively communicating information; 3) generalizing of knowledge to applied settings and 4) social context for the use of information and dissemination of knowledge.

These components are further explicated as characteristics of the Information Literate [University] Student who:

- understands and functions effectively in the information environment
- demonstrates appropriate information seeking skills e.g. integrates new information into existing knowledge and skills
- transfers knowledge and skills to new environments and emerging technologies
- values the importance of information access and its critical role in a democratic society.

The *Overview of Information Literacy* is explicit that the “retrieval and analysis of information and data are not sufficient to produce an educated adult. It is the relationship between information and knowledge and the application of that knowledge”. This definition underscores the knowledge-focused stance taken by the library.

**4. Collaboration with University constituents is the vehicle through which information literacy will be progressively integrated into the curriculum.**

The libraries state that information literacy competencies will be developed through a process of collaboration with faculty and university constituents of including students.
This is reflective not only of a foundational value of information literacy but of an espoused value of the library of “collaboration and partnerships”. The libraries Strategic Plan is explicit that it will “leverage expertise and instructional partnerships to strengthen students’ abilities to locate and evaluate information and to advance ethical uses of that information.”

A desired and expressed outcome of this process of instructional collaboration is the integration of information literacy competencies into the curriculum. “These partnerships can result in more effective assignments, less frustration for the students and greater knowledge of appropriate information sources”. The importance of collaboration is reiterated with the statement “…information gathering skills are best learned within a subject-context” and so teaching faculty will “have the most immediate influence in how well students incorporate information into their coursework”. Further, the Information Literacy Policy asserts that the acquisition of information literacy is a cumulative process and it will be “progressively integrated… with growing focus and specificity as students’ progress through their undergraduate years”.

5. **Tutorials provide “basic information strategies” and “key information literacy strategies of information gathering, synthesis and analysis and critical thinking”**. 

Varied instructional approaches are promoted by the libraries as means of achieving its mission to equip all students with information literacy and the integration of competencies throughout the curriculum. In addition to face-to-face collaborative instruction initiatives, the libraries provide “tool-boxes” of material for students which allow them to self-select resource categories. Short tutorials will “provide basic
information gathering strategies” and are geared to be used in large freshmen composition courses. Research and subject tutorials are developed to provide key competencies of information literacy including “opportunities for information gathering, synthesis and analysis in solving problems and in critical thinking.”

Claims developed from concepts in online tutorials

1. Online tutorials offer instruction in a range of competencies including research and search strategies, accessing, locating and using information and information sources, evaluating information and sources, using information ethically as well as problem solving, analysis, and critical thinking.

2. Tutorials employ varied methods to enable knowledge outcomes of critical thinking and knowledge construction.

3. Tutorials encourage ethical approaches to using information.

4. Design of tutorials facilitates integration of information literacy competencies in the curriculum.

Claims/Evidence

1. Online tutorials offer instruction in a range of competencies including accessing, locating and using information and information sources; evaluating information and sources; using information ethically as well as problem solving, analysis, and critical thinking.

The information literacy program offers a suite of tutorials addressing varied competencies and topics. Included are a nine-module research tutorial, and four short tutorials describing 1) the cycle of information, 2) how to read a newspapers and use journals 3) use of the online catalog to access library resources and 4) ethical approaches
to engaging with information. Discipline and subject-specific tutorials in engineering, nursing and business, add to the suite of online tutorials aimed at building competencies in “information gathering, analysis and critical thinking”.

The modular research tutorial, designed to “provide key competencies of information literacy”, deals with developing strategies towards creating research topics and questions, skills for accessing, locating and using information sources, competencies in identifying different types of information within sources, evaluating sources and evaluating the search process, as well tips in the ethical use of information. Five modules focus on locating and using multiple resources, and embrace both procedural skills for accessing and using these and conceptual understandings of the structure of these sources and types of information which can be found in the sources. The Information tutorial T2 introduces students to the process of the creation of different forms of information from a news event.

Discipline-based tutorials emphasize strategies towards locating subject-specific sources and using these sources to locate information. In addition they address essential information literacy outcomes of evaluating and citing these resources. The subject tutorial T5 details 4 steps in evidence based practice, questioning, locating, appraising and applying. Competencies of analysis, critical evaluation, using sources, and using information in problem solving are addressed in this tutorial.

2. **Tutorials employ varied methods to enable knowledge outcomes including critical thinking and knowledge construction.**

The research tutorial uses different strategies to enable critical thinking competencies. An interactive process of developing research topics and statements introduces the use of
concept maps to activate prior knowledge and create new knowledge as well as reflective questions and detailed examples, guidelines and practice exercises. A research log is also employed after each module to encourage students to generate questions, reflect on the research process and concepts and skills taught as well as to create their own research strategies, or products. Each module ends with “Test Yourself” exercises.

Question formulation, critical evaluation and analysis of information, and problem solving within authentic situations are methods used to enable critical thinking in the tutorial developed for nurses. Students are encouraged to use a worksheet throughout the tutorial to document the process.

Table 4.12

*Lib06: IL competencies identified in tutorials*

<table>
<thead>
<tr>
<th>Key IL Competencies Identified in Policy Documents</th>
<th>Addressed in Tutorials</th>
</tr>
</thead>
</table>
| Information gathering [Accessing information sources] | • Newspaper Tutorial T3  
• Research Tutorial T1  
• Subject Tutorials T5, T6  
• Journal Tutorial T4 |
| Critical thinking | • Research Tutorial T1  
• Subject Tutorial (Nursing) T5  
• Information Tutorial T2 |
| Synthesis and analysis [Knowledge creation] | • Subject Tutorial T5  
• Research Tutorial T1 |
| Ethical use of information | • Plagiarism Tutorial T7  
• Plagiarism videos  
• Citations module |
| Problem Solving | • Subject Tutorial T5  
• Newspaper Tutorial T3 |
3. **Tutorials encourage ethical approaches to using information**

The library adopts different and varied approaches to encourage and enable the ethical utilization of information. A module within the research tutorial, “Using information ethically and legally” includes three short interactive videos of students and their “future selves” who caution and offer advice to the students as they use information in authentic academic, work and social situations. A plagiarism tutorial (webpage) T7 details the “potential consequences and provides tips for how to avoid committing plagiarism”. This tutorial is linked to the University’s statement on academic integrity. The library also provides an online plagiarism handout, and instructions on citing sources. A non-threatening approach is employed in these tools.

4. **Tutorials are designed to facilitate integration of information literacy competencies in the curriculum.**

The modular research tutorial includes detailed instructions to faculty for use of the tutorial as well as methods for incorporating specific modules within courses. Faculty is encouraged to “…assign one or several modules as independent assignment outside of class in preparation for information assignment, use them as a basis for class discussion based on shared experiences or design assignments based on principles taught in the modules”. Examples of possible assignments using the tutorial or modules are provided by the libraries. These include a) complete a major research project b) find books, journal articles and web resources c) evaluate the search process and the information found d) cite resources used.
Table 4.13

Lib06: Claims from policy documents and online tutorials: Espoused theories and theories-in-use

<table>
<thead>
<tr>
<th>Espoused Theories</th>
<th>Theories-in-Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Knowledge production and use are outcomes of the research, instruction and</td>
<td>1. Online tutorials offer instruction in a range of competencies including research and search strategies, accessing, locating and using information</td>
</tr>
<tr>
<td>creative activities of the University.</td>
<td>and information sources, evaluating information and sources, using information ethically and for problem solving, analysis, and critical thinking.</td>
</tr>
<tr>
<td>2. The mission of the Libraries supports the University and advances intellectual</td>
<td>2. Tutorials employ varied methods including constructivist strategists to enable knowledge outcomes including critical thinking and knowledge construction.</td>
</tr>
<tr>
<td>discovery, information literacy and lifelong learning.</td>
<td></td>
</tr>
<tr>
<td>3. Information literacy is defined as having four components of knowledge, skills,</td>
<td>3. Tutorials encourage ethical approaches to using information.</td>
</tr>
<tr>
<td>application of knowledge and social context.</td>
<td></td>
</tr>
<tr>
<td>4. Collaboration with University constituents is the vehicle through which</td>
<td>4. Design of tutorials facilitates integration of information literacy competencies in the curriculum.</td>
</tr>
<tr>
<td>information literacy will be progressively integrated into the curriculum.</td>
<td></td>
</tr>
<tr>
<td>5. Tutorials provide “basic information strategies” and “key information literacy</td>
<td></td>
</tr>
<tr>
<td>competencies” of information gathering, synthesis and analysis and critical</td>
<td></td>
</tr>
<tr>
<td>thinking.</td>
<td></td>
</tr>
</tbody>
</table>

Reflective Discussion

The libraries are explicit in their support of the university’s thrusts in teaching and research and highlight intellectual discovery, information literacy, and lifelong learning as key avenues for fulfilling the mission to support the university. Concepts which emerge from the analysis of the mission and goals of the university indicate that the creation and application of knowledge, creativity and ethical habits are important in research and instruction initiatives. There is an assumption therefore that instruction at all levels of the university will encourage and enable these goals.
It seems that deliberate attempts have been made by the information literacy program to reflect and achieve the instruction goals of the libraries and the university. Firstly information literacy is explicated as a complex mix of skills and knowledge in engaging with information towards creating and applying knowledge in various contexts, as a way of guiding the instruction initiatives. Secondly, online tutorials are developed by the libraries as tools to assist in enabling this complex mix of skills and knowledge. While the libraries offer varied modes of instruction including face-to-face classes, tours and research consultation, online tutorials are promoted as integral in realizing the mission of advancing information literacy. “Tutorials will provide students with basic information gathering strategies” and further, the research tutorial “provides key competencies including synthesis and analysis in solving problems, and critical thinking”. The mission is clear that tutorials should address both skills and enable knowledge creation.

The vision behind the research tutorial is confirmed by the coordinator of information literacy:

We wanted to have some tools and materials that could be used in any class by anyone to give that first level of competencies… [We also wanted] to engage students in a variety of ways to try to meet a variety of learning goals. So [tutorials] had multiple purposes.

Comparative analysis of claims from mission documents and online tutorials indicates that there are levels of congruence and incongruence between what is espoused by the libraries and the enactment of these in the tutorials.

**Congruence**

Concepts and approaches utilized in tutorials suggest attempts at aligning learning outcomes with stated understandings of information literacy:
• The use of constructivist strategies in the research tutorial aims at enabling problem solving and deep learning towards engaging with information. The tutorial includes a module on synthesizing information with exercises for practicing skills taught and a research log for reflecting on the research process and developing new knowledge.

• Critical thinking is enabled via the evaluation of resources, reflection on and evaluation of the search process and analysis of information in the evidence-based practice tutorial.

• Ethical dimensions of the university mission are addressed in the plagiarism tutorial, short videos and plagiarism guide.

• Short videos on avoiding plagiarism encourage the application of knowledge about plagiarism in authentic situations.

• Short tutorial on using newspapers enables everyday and lifelong learning competencies.

• Short tutorial on the information cycle addresses understanding of information structure.

The emphasis on plagiarism and the approach taken in the tutorial are explained by the librarian:

The campus was emphasizing attention to plagiarism in classes and they requested the faculty to talk about and say what it is. …We have had information about citing sources and that has always been our emphasis, trying to teach students how to do it correctly as opposed to worrying about plagiarism. We did the plagiarism tutorial and quiz after this statement on plagiarism from the University came out. A lot of times students were coming to our website and what they were thinking of was the word plagiarism rather than citing sources… Trying to give some practice in identifying where it went wrong, here is where it went right, here is good way to do it. I think a lot of plagiarism is not done maliciously but out of ignorance. So we try to give additional opportunities to try to make the distinctions.
The enabling of critical thinking in the research tutorial is also discussed:

One of the things that I thought we did fairly uniquely… was in the first module on defining your topic. We used concept mapping to illustrate how you might take a topic, explore all the many different facets that might be available on the topic and choose a piece of it that would be the piece that you would focus on so I think that that visually helps students understand how to take an idea that they have and explore it critically and then make some decisions about what way they want to go. …[Also] the idea of the research log was that as you explain a concept then the student would have the opportunity to reflect and try out with their own topic.

Information literacy is practiced in tutorials as knowledge of and skills in using sources:

- Both skills in using sources and knowledge about information structure are addressed

- Emphasis on strategies and procedures for research, searching and using information ethically.

Integrating information literacy competencies via the tutorials:

An explicit value of information literacy as explicated in the instruction mission statement is that the means of attaining information literacy will be achieved through “progressive integration into the entire curriculum”. The librarian explains the seeming attempt to encouraging the integration of competencies in the curriculum via tutorials:

I think that we have tried over the years to keep our tutorials fairly modular so that different pieces could be used here and there. So for example, there is a part about understanding call numbers. That has been a very popular piece that people [Faculty] have taken out and used a lot. There have always been little modules or components in the larger one that have been able to be broken out and used. Then with the minute models we started doing more specific ones that were short pieces that could be used as stand alone or not… I would say that we are definitely moving towards shorter little vignettes and snippets of things. But I also feel that we respond to the needs so that the evidence based practice tutorial for nursing was one that was requested specifically from the nursing group. We worked with the nursing faculty and administration on the content. And that was an important piece of the creation, their involvement and that was what they needed. That was one that was fairly long that we did recently although in an overall sense we have moved towards shorter pieces.

Further explanation of the attempts at integrating competencies via tutorials:

That was so important to us as students do not care that much about the information unless they are putting it to a use. And that was one of the reasons why one of our focus,
our primary focus has always been integrating into the curricular process in a sense. We
do a lot of course related instruction. We do a little bit of credit teaching but not a lot. So
there is not one course that students come to learn about the library, we try to integrate it
into their other courses where they are doing projects that need the library and the
librarian works with the faculty member to integrate the information literacy instruction
within that. So that has been a major focus in finding information for use and putting it to
use.

Incongruence

Information literacy is practiced primarily in tutorials as accessing, evaluating and
using information sources ethically:

While there are obvious attempts at developing instruction tools to address key
knowledge-based and information literacy outcomes there remain areas of inconsistencies
between the espoused theories and theories-in-use of information literacy. There is a
focus on developing skills in accessing and using information sources in most tutorials
with less emphasis on developing the use of information towards knowledge
construction. All tutorials address information gathering competencies while the use of
information is developed in only two tutorials. Five of eight modules in the research
tutorial focus on accessing and using information resources.

When asked about the role of the instruction program in realizing the library’s
mission of advancing “intellectual discovery” the coordinator explains the seeming focus
on sources:

Well I think that intellectual discovery is often based on a certain foundation of
knowledge. Most people don’t discover things until they know something about a field
and the more they know they make new connections but they don’t usually discover
when they are novices. So I think that the whole idea of using information resources both
within the curriculum and beyond the curriculum, the idea that intellectual curiosity
inspires people to look something up and read about something else that helps them to
think about something else, whether they are doing it for an assignment or for their own
intellectual curiosity is the road to discovery. So the more they are empowered with
information literacy skills, the more opportunities they have [for] creativity and
intellectual discovery.
So what appears as a focus on information sources is justified as it’s linked to intellectual discovery and information gathering. Information gathering competencies are seemingly enabled in all tutorials that include strategies for accessing and locating sources.
4.7 Case 7: Lib07

Concepts derived from policy documents

*University*: Research; knowledge creation; quality teaching; innovative public service; critical thinking; reasoning; scientific inquiry; communication; social responsibility; ethical awareness; multicultural understanding; computer literacy.

*Library*: Critical thinking; curriculum integration; partnerships; collaboration; lifelong learning; evaluating sources; knowledge structure; research strategies; copyright; assessment.

*Predominant themes:*

*University*: Knowledge; social responsibility

*Library*: Information literacy; information sources; collaboration.

Concepts derived from online tutorials

Research process; locating sources; evaluating sources; search strategies; academic integrity; supporting arguments; ethical use of information; avoiding plagiarism; citing sources; understanding information; writing process.

*Predominant themes:*

Information literacy processes and outcomes; ethical responsibility

Table 4.14

*Lib07: Concepts from mission documents and online tutorials*

<table>
<thead>
<tr>
<th>Mission Documents</th>
<th>Online Tutorials</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>University</strong></td>
<td></td>
</tr>
<tr>
<td>Concepts</td>
<td>Evidence</td>
</tr>
<tr>
<td>- Knowledge creation</td>
<td>- Concepts</td>
</tr>
<tr>
<td>- Research</td>
<td>- Locate sources</td>
</tr>
<tr>
<td>- Service</td>
<td>- Evaluate sources</td>
</tr>
<tr>
<td>- Quality teaching</td>
<td>- Research strategies</td>
</tr>
<tr>
<td>- Critical thinking</td>
<td>- Searching skills</td>
</tr>
<tr>
<td>- Scientific inquiry</td>
<td>- Using library resources</td>
</tr>
<tr>
<td>- Ethical awareness</td>
<td>- Using information</td>
</tr>
<tr>
<td><strong>Evidence</strong></td>
<td><strong>University</strong></td>
</tr>
<tr>
<td>Evidence University Mission</td>
<td>Evidence</td>
</tr>
<tr>
<td>- Learning Goals</td>
<td>- Research Tutorial 1</td>
</tr>
<tr>
<td>- University Mission</td>
<td>- Research Tutorial 2</td>
</tr>
<tr>
<td>- Library resources</td>
<td>- Plagiarism Tutorials T3</td>
</tr>
</tbody>
</table>
Claims developed from concepts in policy documents

1. Knowledge creation and knowledge application are integral to the mission of the University.

2. The University Libraries support the University mission with services “that advance research and learning”.

3. Library instruction and information literacy instruction are presented as vehicles for meeting the Libraries’ goal of preparing students for lifelong learning in various disciplines.

4. Instructional collaboration towards integrating information literacy competencies is the basis for effective information literacy and results in successful teaching.

5. Information literacy is defined and conceptualized on a continuum from finding to using information appropriately.

6. Information literacy learning outcomes are guided by the ACRL Standards and focus on knowledge-based and procedural competencies.


Claims/Evidence

1. Knowledge creation and knowledge application are integral to the mission of the University.

The University presents a three fold mission of instruction, research and public service. Analysis of the mission of statement reveals that outcomes of knowledge creation and the application of and use of this knowledge towards specific purposes are integral to all aspects of the mission. “Each component of the university mission reinforces and supports the other two. For example, research creates the new knowledge so necessary to support quality instruction and innovative public service”. Further, the university’s Learning Goals place emphasis on the development of a range of competencies including knowledge and understanding in diverse subject areas, intellectual and communication competencies including critical thinking, scientific inquiry, information literacy and ethical and social awareness.

2. The University Libraries support the University mission with services “that advance research and learning”.

Within this framework of knowledge-based outcomes of the University, the Libraries articulate “support and enrichment” of the University three fold mission by providing “outstanding resources and services that advance research and learning”. A major goal of the mission of the libraries is the creation of a “library environment that enriches the academic life of the university for student learning”. In addition the creation of a rich virtual environment with significant information resources, services and tools to support research and learning will integrate the libraries into the university’s research and learning programs” (University Libraries Strategic Plan 2006-2011).
3. **Library instruction and information literacy instruction are vehicles for preparing students for life long learning.**

Integrally associated with supporting the mission of the university is the instructional goal of the library to “ensure that students graduate with the skills for their careers and for lifelong learning”. This goal is achieved through the development of information literacy skills which include “library research, information seeking and information management”. The Libraries declare that these skills are “necessary for academic success, for competing in the workplace, for lifelong learning and for everyday life”. Librarians provide instruction and tutorials for students, faculty and staff that facilitate the development of an information literacy community.

4. **Instructional collaboration towards integrating information literacy competencies is the basis for effective information literacy and results in successful teaching.**

A key objective of the Libraries’ *Strategic Plan* is to “address information competencies through material, services and programs in partnership with teaching faculty.” The *Information Literacy Policy* establishes therefore that preparing students for “lifelong learning in their disciplines” is a joint role between librarians, teaching faculty and other university constituents. All policy documents confirm that instructional collaboration between library faculty and teaching faculty is the primary mechanism advocated by the library for developing information competencies. With themes of focus and integration, the *Strategic Plan* states that by “partnering with the teaching faculty, information literacy skills will be integrated into the curriculum to ensure that students graduate with the skills for their careers and lifelong learning”. The *Instructional Services*
Policy declares that the “key to successful development of information literacy skills is the collaboration of teaching faculty and library faculty in supporting university-wide learning goals”. Further, “library instruction is most effective when integrated into the curriculum; related to a specific class and when library and classroom faculty confer on the objectives, goals and design of course assignments.” Librarians agree that the “most successful instruction classes on any level are those which are tailored to specific assignments and curriculum.”

5. Information literacy is defined and conceptualized on a continuum from finding to using information appropriately.

Using the ALA (1989) list of competencies of the information literate person, as a guide, the Libraries Information Policy states that “information literate students can find, evaluate and use information with confidence”.

6. Information literacy learning outcomes are guided by the ARCL

*Information Literacy Competency Standards* and focus on a range of skills and competencies, procedural and conceptual.

The Libraries assert that “information literacy brings together new and old concepts of critical thinking, research methods, technological savvy, resource evaluation, active reading”. Outcomes for this range of competencies offered via information literacy instruction are guided by the ACRL *Information Literacy Competency Standards*.

Claims developed from concepts in online tutorials

1. The Libraries aim at realizing knowledge-based and skills-based learning outcomes through its varied online tutorials.

2. Ethical issues are addressed in plagiarism tutorials and guides.
3. Instructional collaboration is practiced via tutorials.

4. Tutorials give attention to critical thinking and knowledge creation.

**Claims/Evidence**

1. **The Libraries aim at realizing knowledge-based and skills-based learning outcomes through varied online tutorials.**

The instruction program of the libraries is realized through instruction sessions, online subject guides, course related guides and multiple online tutorials. Included in the suite of tutorials are two research tutorials, subject tutorials, tutorials for accessing and using several databases and plagiarism tutorials. The comprehensive research tutorial, developed to “teach about library and Internet research” is promoted as a self-paced stand-alone instruction tool for students and a tool used in instruction sessions by librarians. The tutorial includes modules on choosing a topic, finding articles, using the catalog, using the Internet, and citing sources. The tutorial attempts to address various competencies via these modules with a focus on developing skills in finding and using multiple information sources.

A recent addition to the suite of tutorials is a shorter, highly interactive research tutorial which was developed to provide instruction on the research process and is the result of a collaborative initiative between the Libraries, University Writing Program and a number of First Year Academic Departments. Including similar modules found in the earlier research tutorial such as selecting a topic, finding sources, choosing keywords, identifying citations, and evaluating sources, the tutorial however enhances the comprehensive tutorial with the use of a conversational, teaching style to address students’ questions concerning authentic research assignments. Questions relate to choosing research topics, types of sources to be used and the appropriateness of these
sources. It therefore details research approaches for developing a manageable topic, and searching strategies for finding multiple types of sources including primary and secondary, books, articles, government documents, newspapers and presents criteria for evaluating these sources. While presenting a priori criteria for evaluating sources, in maintaining a focus on developing students’ assignments, the tutorial introduces an evaluation criterion of context, “does the source really address your research question?” This invites students to connect sources found with their original research plan. The tutorial encourages the use of a Research Log as a way to “keep track of [the] research process, including ideas, thoughts, and reflections from reading or the research topic.”

Subject tutorials are developed as collaborative initiatives with academic departments and enable students to formulate research questions and engage with information resources within specific disciplines. A subject tutorial, T6 addresses the writing process with strategies and suggestions for developing a research project including the stating of conclusions.

This span of tutorials confirms that varied learning outcomes are emphasized in online tutorials. These include research strategies, search strategies for locating and evaluating information sources, and ethical use of information. Critical thinking is presented primarily as evaluation of sources and ethical use of information and information sources.

2. Ethical issues are addressed in plagiarism tutorials and guides.

A seeming focus on the ethical use of information results in plagiarism being dealt with in two full tutorials, a module in a research tutorial and a detailed guide. The flagship plagiarism tutorial addresses ethical issues in a fairly non-threatening manner.
Developed as a movie in three parts, the tutorial is intended to be funny yet serious as it describes methods for avoiding plagiarism using students’ papers in a classroom setting. It speaks to the negative consequences of plagiarism but the tone of the teacher is encouraging rather than severe. A link to the University’s Academic Integrity Policy underscores issues addressed by the libraries. Questions in a ‘quiz-show’ are used to reinforce concepts taught which coalesce around appropriate citations and paraphrasing. The tutorial refers students to the university’s Writing Program as well as librarians to assist with the writing process. In addition to tutorials on plagiarism, the library provides a detailed guide on ways of avoiding plagiarism. The guide is practical and avoids a threatening tone as it adopts a helping, and conversational style.

3. **Instructional collaboration is practiced via tutorials.**

The libraries’ commitment to instructional collaboration is observed in the new research tutorial and two subject tutorials developed in partnership with academic departments. The generic stance adopted in the early research tutorial is addressed since examples and approaches used in these tutorials suggest relevance to specific disciplines. Subject Tutorial T5 focuses on engagement with relevant databases for nursing research. Using appropriate topics and types of research projects, the interactive tutorial T2 also simulates authentic academic situations to build information literacy competencies.

4. **Tutorials give attention to critical thinking and knowledge creation**

Critical thinking is encouraged primarily via the teaching of source evaluation and avoidance of plagiarism. Evaluating sources is addressed in research tutorials as well as in the subject tutorials with a more critical approach to evaluation introduced in the interactive research tutorial. Other strategies for encouraging critical thinking include the
process of developing research statements and defining topics. Both subject tutorials discuss research strategies and searching strategies within the context of students developing research papers, and aim at encouraging critical approaches to these assignments. While the subject tutorial T5 mentions the creation of a bibliography, subject tutorial T6 addresses the writing process and provides detailed strategies for developing a project.

Table 4.15

**Lib07: Claims from policy documents and online tutorials: Espoused theories and theories-in-use**

<table>
<thead>
<tr>
<th>Espoused Theories</th>
<th>Theories-in-use</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Knowledge creation and knowledge application are integral to the mission of the University.</td>
<td>1. The Libraries aim at realizing knowledge-based and skills-based learning outcomes through its online tutorials</td>
</tr>
<tr>
<td>2. The University Libraries support the University mission with services to advance research and learning.</td>
<td>2. Ethical issues are addressed in plagiarism tutorials and guides.</td>
</tr>
<tr>
<td>3. Library instruction and information literacy instruction are presented as vehicles for meeting the libraries’ goal of preparing students for lifelong learning in various disciplines.</td>
<td>3. Instructional collaboration is practiced via tutorials.</td>
</tr>
<tr>
<td>4. Instructional collaboration towards integrating information literacy competencies is the basis for effective information literacy and results in successful teaching.</td>
<td>4. Tutorials give attention to critical thinking and knowledge creation</td>
</tr>
<tr>
<td>5. Information literacy is defined and conceptualized on a continuum from finding and using information appropriately</td>
<td></td>
</tr>
<tr>
<td>6. Information literacy learning outcomes are guided by the ACRL Standards and focus on knowledge-based and procedural competencies.</td>
<td></td>
</tr>
</tbody>
</table>
Reflective Discussion

Congruence

Claims which emerge from the analysis of mission documents indicate varying levels of congruence between the espoused theories and theories-in-use of information literacy within the libraries. Adopting a knowledge-oriented focus which mirrors the university’s mission of creating and applying knowledge, the libraries articulate a mission of developing services to “advance learning: and in particular enabling of lifelong learning. The instruction mission echoes this knowledge focus with instructional goals of knowledge building and enhancement of critical thinking while expressing the essential role of instructional collaboration. Information literacy is defined on a continuum from information access to information use.

Claims developed from the analysis of online tutorials suggest varying approaches to the practice of information literacy. There are clear attempts to address information literacy outcomes via the range of tutorials offered by the libraries. Research skills are addressed in research and subject tutorials. Ethical use of information is addressed via the plagiarism tutorials and modules on citing in the research tutorials. With the introduction of a new collaborative research tutorial, authentic research topics and students’ problems are discussed. There is more attention given to conceptual understandings. It appears also that tutorials are moving towards disciplinary and collaborative approaches to teaching. This is important as the libraries espouse instructional collaboration and curriculum integration as the foundations of true information literacy. Instructional collaboration is proposed in 66% of all statements detailing the process of information literacy instruction. Teaching faculty are encouraged to work with the library in collaborative
projects as the library’s Strategic Plan proposes a University-wide information literacy
program with instructional collaboration as its foundation.

The vision behind the new tutorial which adds different dimensions to the
instruction program is explained by the Coordinator of Instruction:

The new tutorial came about as we were getting more demand for instruction and that
came about partially due to the change in the undergraduate curriculum. So there were
new programs coming out, the Students in Transition Seminar for transfer students and
also more focus on honors programs with the combined program of the colleges rather
than an honors program at each college. It’s now one large honors program. So we were
getting demand for research information, for librarians to come and we cannot reach all
of them so the idea is for the tutorial to satisfy some of that. In some cases it will be what
instructors will be using. In other cases the tutorial will be integrated with the face to face
so it will be a complement to that.

The focus on plagiarism is also explained as enabling the mission for information literacy
as well as an emphasis in the university:

It’s really addressing the value of the information and even though there is a lot of free
information out there, it’s not for the taking all the time without giving credit. So its
understanding that process, that somebody spent a lot of time doing that, whether it’s a
program or a research paper. It’s going to be interesting to see how this eventually plays
out.

…Yes there really is [a focus] because there have been a number of incidences of
plagiarism at the university. Students have varying views about plagiarism; sometimes
this is cultural. We are finding that some cultures say this can’t be said any better so we
are actually complimenting the author by using it. And that’s the way it’s viewed.

…I would say not just student need but the university is focusing on it because they have
these cases presented to them all the time and it’s becoming a part of any new course, in
putting it on your syllabus. I have been through some of the plagiarism seminars to First
Year Students as an advisor in working with groups of students and go through what [the
University] expects and what are the consequences for problems that arise.

**Incongruence**

The rigorous analysis of the data implies that there are gaps between the espoused
theories and theories-in-use of information literacy. The libraries’ espoused theories are
explicit; not so explicit are the theories-in-use. The libraries mission supports knowledge
creation and although tutorials have made efforts to address this outcome, there appears
to be a reluctance to deal with this across all tutorials and in depth. Although modules in
the comprehensive research tutorial attempt to address conceptual outcomes, a skills approach predominates. There is an emphasis on locating sources. The new research tutorial also focuses on sources and although it speaks to research competencies and adopts the use of a Research Log, it seems to be missing a module on pulling the process together to address knowledge creation. With a seeming focus on the use of sources to satisfy the research assignments, the tutorial seems to stop short without providing procedures for using information from these sources. Information use is sidestepped in the process.

Information literacy is defined on a continuum from access to use of information, yet it appears to be practiced from access to evaluating information sources, with information use operationalized only as ethical approaches to sources.

The seeming minimal attention to information use and knowledge creation is explained by the librarian:

I think that one of the challenges is that we don’t really give the follow up to students. We only have a certain amount of time to see students and sometimes that contact is more in some classes than others and a lot of times it’s also dependent on the faculty member to promote the importance of what a librarian can contribute to their research process. It makes a difference. And the attitude of faculty and whether they encourage contact with the librarians or say the librarians will help not only with finding the resources but help you determine the best one.

She explains approaches to enabling the university’s mission in encouraging knowledge creation:

Well actually we are enabling them but not necessarily in the instruction program. By supporting some of the faculty projects… some things done in history or even editing undergraduate research journals. There a number of these journals now where students are getting published… And they are reviewed with a review board. There is a journal of Undergraduate Research. The library sometimes plays a part in that, not all the times but they may have provided platforms or technical assistance but not necessarily as part of the instruction program. But we may have in terms of facilitating helping them with finding the resources but also to evaluate the sources. Now we have a lab… where they can now develop multi media products. Now we are thinking in that direction and we have had for awhile. Now we know, with the insistence on students creating knowledge.
It’s something we have been talking about and now making some headway in supporting that.

The challenges with fully addressing critical thinking in information literacy instruction as well as approaches used in the tutorials are explained:

Sometimes given the time that we have, that is difficult in getting in as much as you would like to. That tends to take place more, we hope in the classroom where they talk about the readings etc. But one of the ways that I incorporate critical thinking is having them look carefully at the information that they have to examine it and to determine what it is that they have. They don’t always know that. To compare those scholarly journal articles with newspaper articles. What information are they getting and not getting, what’s reliable and what is not. That’s part of what we can get in. I know that there is more that can be done with that but sometimes you have limited time and you can’t pull out as much as you would like.

I think we have tried to facilitate critical thinking, I am not sure that we have actually …put it in the tutorial. But I think we have tried to facilitate it with the idea of the research log where the idea is not only to record but to reflect on how you have done it along the way. Also with the searching examples that we give, they have to think about the terminology a little bit more and why they have to think about the terms to choose for their research in the searching process. So there are several examples in the module on searching for journal articles that I think help to facilitate the critical thinking process. This is highly interactive, much more interactive than [research tutorial1]. They are talking to each other and talking about their work. So it facilitates critical thinking and students are asked questions along the way so they do have to think about what is presented to them and they are presented with citations and they have to say what this is. I think the critical thinking is facilitated through the new modules.
4.8 Case 8:Lib08

Concepts derived from the policy documents

*University:* Scholarship; values, intellectual accomplishment; critical thinking; human diversity; cultural awareness; excellence.

*Library:* Excellence; curriculum integration; life long learning; information competence; collaboration; knowledge sharing; locating, retrieving, organizing, critically evaluating, synthesizing and communicating information ethically; search strategies; information transfer; new technologies.

*Predominant themes:*

*University:* Knowledge outcomes; values

*Library:* Knowledge outcomes and processes; information competency

Concepts derived from online tutorials

Information sources; finding information; using sources; search strategies: conceptual and procedural; evaluating; plagiarism; technology use; organizing and synthesizing information; knowledge creation; citing sources

*Predominant themes:*

Information literacy outcomes and processes

Table 4.16

*Lib08: Concepts from mission documents and online tutorials*

<table>
<thead>
<tr>
<th>Mission Documents</th>
<th>Evidence</th>
<th>Online Tutorials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concepts</td>
<td>Concepts</td>
<td>Evidence</td>
</tr>
<tr>
<td>Scholarship</td>
<td>Web structure</td>
<td></td>
</tr>
<tr>
<td>Freedom</td>
<td>Information cycle</td>
<td></td>
</tr>
<tr>
<td>Critical thinking</td>
<td>Information types e.g.</td>
<td></td>
</tr>
<tr>
<td>Human diversity</td>
<td>Library Tutorial T2</td>
<td></td>
</tr>
<tr>
<td>Values</td>
<td>Searching Tutorial T3</td>
<td></td>
</tr>
</tbody>
</table>
# Library

<table>
<thead>
<tr>
<th>Concepts</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellence in instruction</td>
<td>Library Mission</td>
</tr>
<tr>
<td>Excellence in intellectual accomplishment</td>
<td>Library Goals</td>
</tr>
<tr>
<td>Scholarship</td>
<td>Guidelines for building Information Competence</td>
</tr>
<tr>
<td>Knowledge</td>
<td></td>
</tr>
<tr>
<td>Lifelong learning</td>
<td></td>
</tr>
<tr>
<td>Understanding</td>
<td></td>
</tr>
<tr>
<td>Collaboration</td>
<td></td>
</tr>
<tr>
<td>Curriculum integration</td>
<td></td>
</tr>
<tr>
<td>Critical evaluation</td>
<td></td>
</tr>
<tr>
<td>Analysis</td>
<td></td>
</tr>
<tr>
<td>Communicating info</td>
<td></td>
</tr>
<tr>
<td>Knowledge sharing</td>
<td></td>
</tr>
<tr>
<td>Search Strategies</td>
<td></td>
</tr>
<tr>
<td>Information sources</td>
<td></td>
</tr>
<tr>
<td>New technologies</td>
<td></td>
</tr>
<tr>
<td>Scholarly interaction</td>
<td></td>
</tr>
<tr>
<td>opinions, in-depth</td>
<td></td>
</tr>
<tr>
<td>Research strategies e.g. asking questions</td>
<td></td>
</tr>
<tr>
<td>Locating information sources: books</td>
<td></td>
</tr>
<tr>
<td>Searching strategies</td>
<td></td>
</tr>
<tr>
<td>Locating sources: articles</td>
<td></td>
</tr>
<tr>
<td>Evaluating information</td>
<td></td>
</tr>
<tr>
<td>Evaluating sources</td>
<td></td>
</tr>
<tr>
<td>Citing sources</td>
<td></td>
</tr>
<tr>
<td>Citation styles</td>
<td></td>
</tr>
<tr>
<td>Plagiarism</td>
<td></td>
</tr>
<tr>
<td>Using information sources</td>
<td></td>
</tr>
<tr>
<td>Synthesizing information</td>
<td></td>
</tr>
<tr>
<td>Organizing info</td>
<td></td>
</tr>
<tr>
<td>Creating new knowledge</td>
<td></td>
</tr>
<tr>
<td>Media literacy</td>
<td></td>
</tr>
</tbody>
</table>

## Claims developed from concepts in policy documents

1. The University mission articulates knowledge outcomes and human values as integral to the process of developing excellent curricula.

2. The mission of the Library supports the University in promoting excellence in scholarship, knowledge and understanding.

3. Instructional collaboration is the vehicle towards integrating lifelong learning skills in the curriculum.
4. Information Competence (information literacy) is defined on a continuum from locating, critically evaluating, organizing, using and communicating information.

5. Tutorials are designed for information literacy competencies to be integrated in the curriculum.

**Claims/Evidence**

1. **The University mission articulates knowledge outcomes and human values as integral to the process of developing excellent curricula.**

   The university promotes an “environment that appreciates and respects scholarship and values of freedom and human diversity” with outcomes of excellence in “instruction” and “intellectual accomplishments”. To this end the mission is clear that all curricula will “encourage critical thinking and reflect dimensions of human diversity”.

2. **The mission of the Library supports the University in promoting excellence in scholarship, knowledge and understanding.**

   The library is explicit in supporting the university in its quest for excellence as it identifies goals of excellence in scholarship, knowledge and understanding. To enable this knowledge-directed mission, the library will “empower the university constituency with lifelong learning skills to identify, find, evaluate, use and communicate information” (Library Mission). A further goal to “promote and encourage information and knowledge transfer and sharing” confirms that knowledge creation is important to enabling the library’s mission. Accordingly the instruction program articulates that true information competence involves “both thinking and doing and is more than just learning to use the library”.
The instruction program will therefore address the “use of information sources” as well as “research strategies” towards analyzing, synthesizing and communicating information. The library also aims to “create a learning environment that promotes study, research and scholarly interaction” (Library Goals).

The competencies articulated as necessary for lifelong learning are on a continuum from locating information to communicating information in a cohesive and logical manner. These include locating, retrieving, critically evaluating, organizing, analyzing, synthesizing and using information. Other goals of the library include the teaching of information sources and search strategies in relation to the curriculum and the promotion of knowledge sharing.

3. **Instructional collaboration is the vehicle towards integrating lifelong learning skills in the curriculum**

Specific goals of the library coalesce around meeting the overall mission of “empowering users with lifelong learning”. These include collaborating with faculty to “incorporate information competence into areas of the curriculum so that all graduates of the university have the requisite information skills”.

4. **Information Competence (information literacy) is defined on a continuum of locating, critically evaluating, organizing, using and communicating information.**

The library conceptualizes information literacy as competence in “locating, retrieving, organizing, critically evaluating, analyzing, synthesizing, and communicating information in a cohesive, logical and ethical manner”. The Instruction mission further
explains that “true information competence involves both thinking and doing and is more than just learning to use the library.”

**Claims developed from concepts in online tutorials**

1. Online tutorials focus primarily on search strategies for locating, using and evaluating information sources.
2. Online tutorials give attention to knowledge outcomes including critical thinking competencies.

**Claims/Evidence**

1. **Online tutorials focus primarily on search strategies for locating, using and evaluating information sources.**

To address its mission of enabling lifelong learning, the library develops a suite of tutorials including a comprehensive research tutorial of seven modules and more than 10 short tutorials. The short tutorials are interactive and utilize varied teaching strategies including questioning, refutational text as well as both academic and real world analogies to facilitate learning.

A range of skills-based and knowledge-based information competencies are addressed via these tutorials ranging from accessing and locating sources to effective research strategies, evaluating sources and information, ethical use of information, and synthesizing and communicating information via information technology.

There is an apparent attempt at aligning the shorter “research tutorials” into two distinct groups on the website, those addressing critical approaches to research and those addressing skills and strategies for finding information (see Figure 4.3). The “Finding Information” group of short tutorials focuses on detailed strategies for finding and using varied information sources. These strategies are articulated for accessing a range of
resources including databases, catalog and the web, to locate books, journal articles and Internet resources. The tutorials include searching strategies as well as instruction in evaluating and citing these sources.

2. **Online tutorials give attention to knowledge outcomes including critical thinking competencies.**

With an apparent focus on instruction in locating and using information sources, tutorials also attempt to realize instruction outcomes of critical thinking and analyzing and synthesizing information by references to these competencies in the following tutorials: “Research” group of tutorials attempts to assist students in 1)understanding approaches to college level research with detailed research strategies, 2) developing knowledge on the structure of information and different information types, 3)critically evaluating information and sources as well 4) discussing issues relating to plagiarism. Figure 4.3 illustrates the grouping of tutorials.

![Research Tutorials](image)

**Figure 4.3: Lib08 grouping of online tutorials**

A tutorial on evaluating information employs a questioning approach to interrogating information. These include the language used, the purpose and how the
information is documented. Critical thinking is addressed in detail in both the research tutorial and in this tutorial. There is a move from simply stating criteria of evaluation to the use of questions and discussion points to engage students with reasons for evaluating information and information sources. Issues of usefulness of information for research project and for college level research; issues of validity and issues of types of information

The flagship modular research tutorial, designed for use by faculty, addresses a variety of competencies for using information resources. “After fulfilling the requirement, students should be able to locate, retrieve, organize and evaluate information effectively and to understand some of the ethical, legal and socio-political issues associated with using various kinds of information”. It includes a single module on “organizing, synthesizing and communicating information” in which information use is introduced. The module defines synthesis as “process of integrating materials you have gathered and then creating your own information product”. The module however seems to stop short of enabling this process either with strategies for synthesizing information or procedures for creating a new product. Strategies associated with organizing, synthesizing and communicating information identified in the earlier flagship research tutorial T1 are not addressed in the short research tutorial T3.

Table 4.17

Lib08: Claims from policy documents and online tutorials: Espoused theories and theories-in-use

<table>
<thead>
<tr>
<th>Espoused Theories</th>
<th>Theories-in-use</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The university mission promotes knowledge outcomes and values as integral to excellent curricula.</td>
<td>1. Online tutorials focus primarily on search strategies for locating, using and evaluating information sources.</td>
</tr>
</tbody>
</table>
2. The mission of the Library supports the university in promoting excellence in scholarship, knowledge and understanding.

3. Instructional collaboration is the vehicle towards integrating lifelong learning skills in the curriculum.

4. Information Competence (information literacy) is defined on a continuum from locating, critically evaluating, organizing, to using and communicating information.

5. Tutorials are designed for information literacy competencies to be integrated in the curriculum.

2. Online tutorials give attention to knowledge outcomes including critical thinking competencies.

3. Information competence is practiced via the short tutorials on a continuum from locating, evaluating and citing information and sources.

**Reflective Discussion**

Complexity in information literacy education is demonstrated not only in the relationships between the espoused discourses of mission statements and practice as seen in online tutorials, but in the explanations offered by those intimately involved in shaping policy and practice, espoused theories and theories-in-use. So while it is established that espoused theories give criteria for judging action, voices of librarians clarify and attempt to explain the seeming inconsistencies between the espoused discourse and “action” as documented in web pages of academic libraries.

**Congruence**

There is little ambiguity in the levels of congruence which exist between the instruction mission and the espoused goals of the library. Outcomes articulated and language employed, indicate similar knowledge-based objectives. The library articulates information literacy processes as enabling the mission of developing lifelong competencies. Information literacy is conceptualized on a continuum from access to the use of information and the library’s tutorials are designed to address this continuum.
There is an obvious attempt to address the mission of teaching research strategies and information resources with online tutorials so arranged (Figure 4.3). The library effectively meets one of its instruction goals of teaching information sources and strategies. The library also addresses other points on the continuum from access to use of information by extending its offering of online tutorials to include knowledge-based competencies including critical evaluation and synthesis.

**Incongruence**

The apparent focus on information sources and developing skills for locating and using these sources, with minimal attention given to knowledge-based and conceptual outcomes is lucidly addressed by the coordinator of information literacy:

… Conceptual ideas or concepts, conceptual thinking by its very nature is very hard to capture especially in a tutorial. Just today I was talking with a Faculty member from Composition and he finds the tools-based tutorials much more helpful than the “conceptualish” ones that we are getting at. The conceptual things… you actually learn from experience and whether you can articulate them or not you can demonstrate them. You don’t necessarily need to articulate what all the dangers of how information is produced right now. But if you can understand that pharmaceutical companies are manufacturing information and putting it out there and pretending that its objective information, then you know how. Those are some things that are intuitive. And it does not mean that we don’t teach them, but we don’t teach them directly. They are learnt through the experience of the actions of doing, they are the results of the learning experience. They are not the learning experience themselves. So I think its hard for libraries to get away from being tool-based because teaching faculty in a lot of ways are looking to us for support for knowledge about the tools and tools not just our library resources but how the new technologies and emerging technologies are interacting with our library resources. That’s what they are looking to us for and it does not mean that we are not doing conceptual work in terms of our teaching but it does mean that that might not be as explicit in the objects themselves so personally that does not worry me too much.

A concern that synthesis and information use are addressed only in the almost retired research tutorial and not in the newer short tutorials is explained:

Our approach is from the idea that the library does not own information literacy or information competency. So the areas we are talking about synthesizing and utilizing and ethically using information, we expect that to happen in the context of the classroom not in the context of the library. We can offer support and we are experts in the tools and how
to teach accessing information and we can facilitate the use of information. But when it comes down to the wire, the ethical use of information, as well the heavy duty evaluation of the material and the context of the course, the coursework have to happen with the teaching faculty.

And further …

I would say…that [synthesis] comes from the generic assignments. The assignments are focused on getting students to structure their thought process so that they can use the tools that they need to use effectively. Then we also have evaluation sheets where we are asking the students to evaluate information and in the case of one of the classes one of the assignments where we are asking them to synthesize information they found as part of their assignment.

The direction of the instruction program as articulated by the coordinator indicates the integral role of instructional collaboration in achieving goals for information literacy. This is expressed in the mission of the program and while not observed in the online tutorials, there are apparent attempts to achieve congruence in activities associated with instructional collaboration and curriculum integration. The move from using stand-alone comprehensive tutorial and the expectation that such a tutorial will achieve information literacy outcomes are explained by the librarian:

Basically the tutorials are really meant as support materials. The real learning outcomes are going to come from the assignments and the way the tutorials are used and administered by faculty. The new tutorials are not designed like [Research Tutorial] to be standalone. They are really learning objects to be used in the context of course work. We are moving away from having any free standing model. While this is the easiest to administer it is also the least effective.
4.9 Case 9: Lib09

Concepts derived from policy documents

*University:* Excellence in teaching, research, creativity, scholarly inquiry; knowledge creation, freedom, leadership, discovery, social responsibility.

*Library:* Critical inquiry; critical thinking; information discovery; collaboration ethics; values; intellectual abilities; lifelong learning; curriculum integration; concept mapping; embedding

*Predominant themes:*

*University:* Knowledge-based outcomes; creativity; leadership; values

*Library:* Knowledge-based outcomes and processes; information literacy outcomes and processes; ‘culture of collaboration’; values

Concepts derived from online tutorials

Evaluating sources; evaluating information; plagiarism; finding sources; research strategies; scholarly sources; understanding citations; finding information; ethical use of sources; academic integrity.

*Predominant themes:*

Knowledge outcomes; ethical use of information; information literacy; integration
Table 4.18

*Lib09: Concepts from mission documents and online tutorials*

<table>
<thead>
<tr>
<th>Mission Documents</th>
<th>Online Tutorials</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>University</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Concepts</strong></td>
<td><strong>Evidence</strong></td>
</tr>
<tr>
<td>Creativity</td>
<td>University</td>
</tr>
<tr>
<td>Scholarly</td>
<td>Mission</td>
</tr>
<tr>
<td>inquiry</td>
<td>University</td>
</tr>
<tr>
<td>Knowledge</td>
<td>Core Values</td>
</tr>
<tr>
<td>creation</td>
<td></td>
</tr>
<tr>
<td>Learning</td>
<td></td>
</tr>
<tr>
<td>Discovery</td>
<td></td>
</tr>
<tr>
<td>Leadership</td>
<td></td>
</tr>
<tr>
<td>Responsibility</td>
<td></td>
</tr>
<tr>
<td><strong>Library</strong></td>
<td><strong>Concepts</strong></td>
</tr>
<tr>
<td><strong>Concepts</strong></td>
<td><strong>Evidence</strong></td>
</tr>
<tr>
<td>Information</td>
<td>Libraries</td>
</tr>
<tr>
<td>discovery</td>
<td>Mission</td>
</tr>
<tr>
<td>Ethics</td>
<td>Libraries</td>
</tr>
<tr>
<td>Collaboration</td>
<td>Values</td>
</tr>
<tr>
<td>“Partnering”</td>
<td>Information</td>
</tr>
<tr>
<td>Learning</td>
<td>literacy</td>
</tr>
<tr>
<td>Service</td>
<td>definition</td>
</tr>
<tr>
<td>New Knowledge</td>
<td></td>
</tr>
<tr>
<td>Creativity</td>
<td></td>
</tr>
<tr>
<td>Intellectual</td>
<td></td>
</tr>
<tr>
<td>growth</td>
<td></td>
</tr>
<tr>
<td>Information</td>
<td></td>
</tr>
<tr>
<td>seeking</td>
<td>Policy</td>
</tr>
<tr>
<td>Critical</td>
<td></td>
</tr>
<tr>
<td>Inquiry</td>
<td></td>
</tr>
<tr>
<td>Integration</td>
<td></td>
</tr>
<tr>
<td>Critical</td>
<td></td>
</tr>
<tr>
<td>thinking</td>
<td></td>
</tr>
<tr>
<td>Lifelong</td>
<td></td>
</tr>
<tr>
<td>learning</td>
<td></td>
</tr>
<tr>
<td>Curriculum</td>
<td></td>
</tr>
<tr>
<td>mapping</td>
<td></td>
</tr>
<tr>
<td>Curriculum</td>
<td></td>
</tr>
<tr>
<td>integration</td>
<td></td>
</tr>
<tr>
<td>ACRL Standards</td>
<td></td>
</tr>
<tr>
<td><strong>Evidence</strong></td>
<td><strong>Concepts</strong></td>
</tr>
<tr>
<td>Why is</td>
<td>Citations</td>
</tr>
<tr>
<td>information</td>
<td>Avoiding</td>
</tr>
<tr>
<td>literacy</td>
<td>plagiarism</td>
</tr>
<tr>
<td>important?</td>
<td>Finding books</td>
</tr>
<tr>
<td>Libraries</td>
<td>Finding articles</td>
</tr>
<tr>
<td>Strategic Plan</td>
<td>Finding sources</td>
</tr>
<tr>
<td><strong>Evidence</strong></td>
<td><strong>Concepts</strong></td>
</tr>
<tr>
<td>Evaluating Sources</td>
<td>Knowledge</td>
</tr>
<tr>
<td>Tutorial T1</td>
<td>Citations</td>
</tr>
<tr>
<td>Plagiarism</td>
<td>Finding sources</td>
</tr>
<tr>
<td>Tutorial T2</td>
<td>Understanding</td>
</tr>
<tr>
<td>Academic Integrity</td>
<td>citations</td>
</tr>
<tr>
<td>Tutorial T3</td>
<td>Evaluate sources</td>
</tr>
<tr>
<td>Citation</td>
<td>Searching</td>
</tr>
<tr>
<td>Tutorial T4</td>
<td>databases</td>
</tr>
<tr>
<td>Finding Books</td>
<td>Search</td>
</tr>
<tr>
<td>Tutorial T5</td>
<td>strategies</td>
</tr>
<tr>
<td>Finding Articles</td>
<td>Understanding</td>
</tr>
<tr>
<td>Tutorial T6</td>
<td>information</td>
</tr>
<tr>
<td>Retired Research</td>
<td>types</td>
</tr>
<tr>
<td>Tutorial T7*</td>
<td>Synthesizing</td>
</tr>
<tr>
<td></td>
<td>Embed tutorials</td>
</tr>
</tbody>
</table>
Claims developed from concepts in policy documents

1. The University mission of excellence in education and research, and contributing to the advancement of society is realized through scholarly inquiry, creativity, knowledge creation and values.

2. The Libraries advance the academic mission of the University through fostering information discovery, creativity and knowledge creation.

3. Information literacy instruction is the vehicle through which the Libraries develop competencies in information seeking and critical inquiry.

4. Information literacy is defined as the ability to think critically about information.

5. Integration of research and critical inquiry outcomes in the curriculum is a key priority of the libraries.

Claims/Evidence

1. The University mission of excellence in education, research and public service is realized through scholarly inquiry, creativity, knowledge creation and values.

Presenting a multi-pronged mission, the University aims at achieving “excellence in the interrelated areas of undergraduate education, graduate education, research and public services”. Knowledge-based outcomes of this excellence include “research, creativity, scholarly inquiry and the development of new knowledge” through which the university will contribute to “the advancement of society”. The University articulates core values of learning, discovery, leadership and individual opportunity as integral to its core purpose of “transforming lives”. An expectation of personal “integrity, honesty, trust, fairness and respect” is also explicated.
2. The University Libraries advance the academic mission of the University via the fostering of knowledge outcomes and human values.

The University Libraries explicitly state their support in advancing the teaching and research mission of the University. The mission of the libraries echoes essential components of the university mission and values as it purports goals of “fostering information discovery, nurturing creativity, partnering for the development and dissemination of new knowledge and contributing to the intellectual growth and fulfillment of the individual”. Underpinning these goals are values of learning, collaboration, ethics and service which confirm the libraries’ support for the mission of the university.

3. Information literacy instruction is the vehicle through which the Libraries develop competencies in information seeking and critical inquiry.

The libraries promote information literacy instruction as integral to the process of realizing its mission as the program will “develop user competencies in information seeking and critical inquiry”. Further, information literacy competencies will “enrich students’ academic, work and personal lives”. These lifelong competencies are explicated:

An information literate student is a lifelong learner, with skills necessary to continually find and evaluate information about new developments in an academic discipline. In an information economy, students will need information literacy skills to succeed in the work force, whether they are creating a marketing proposal for a new product or looking for current medical research to treat a patient. Information literacy skills also enrich students’ personal and civic lives. For example, students will draw upon these skills to apply for government services, buy a car, participate in elections, make informed health care decisions for themselves and their families, and manage their finances (Why is Information Literacy Important).
4. **Information literacy is defined as the ability to think critically about information.**

Information literacy is promoted by the libraries as fundamental in critical inquiry and is understood and defined as “the ability to think critically about information” (Information Literacy Definition).

5. **Integration of research and critical inquiry outcomes in the curriculum is a key priority of the Libraries.**

Implicit in the Libraries mission of “partnering in the development of new knowledge” is the essential role of instructional partnerships for the development of information literacy competencies. Knowledge creation is presented as a collaborative process accomplished in the context of the curriculum. “…students are more likely to learn concepts and skills in the context of an academic course where they have an information problem to solve”. So this intended collaboration with faculty is propelled by and closely linked to a ‘key priority’ of the libraries, the “refocusing of library instruction programming and resources on integrating research and critical thinking outcomes in the revised curriculum” (Libraries Strategic Plan).

Towards this end, the libraries promote and encourage extensive services aimed at “supporting faculty in teaching information literacy” competencies. The libraries also emphasize “point-of-need instruction in online environments appropriate to various academic disciplines and departmental cultures”. A suite of tutorials developed to address “basics such as finding articles and books, as well as more complex concepts such as how to avoid plagiarism and recognize the elements of a citation”, are designed for integration into course content. A “culture of collaboration” is promoted.
Claims developed from concepts in online tutorials

1. Online tutorials address multiple information literacy competencies and outcomes with a focus on developing strategies for accessing information via information sources.

2. Ethical approaches to using information are encouraged via tutorials.

3. Critical inquiry and critical thinking are addressed in tutorials.

4. Online tutorials offer avenues for integrating information literacy outcomes in the curriculum.

Claims/Evidence

1. **Online tutorials address varied information literacy competencies with a seeming focus on developing strategies for accessing information via sources.**

   Tutorials address multiple information literacy competencies including accessing and locating information sources, locating information, evaluating sources, searching strategies, understanding citations, avoiding plagiarism, identifying sources for different perspectives and opposing viewpoints, and synthesizing information. A suite of over 20 short tutorials and guides deals with these outcomes (Figure 4.4). While giving attention to multiple competencies, more than half of these tutorials document guidelines for locating a plethora of information sources including books, articles, newspapers, government documents, and primary sources. Finding legal information, news transcripts, opinion polls, opposing viewpoints, critical reviews, background information, statistics, and images are guides which direct users to information sources for locating these information types. Information for understanding the nature and structure of these types of information sources is incorporated in a few instances.
Detailed procedural skills for searching for and locating books, e-books and articles are documented in video tutorials ‘How to find books’ and ‘How to find articles’. Subject tutorials developed specifically for Engineering and Business, while addressing multiple competencies include searching procedures and information on resources specific to these disciplines.

While these tutorials develop awareness and possible competencies in the use of multiple types of information resources that may be relevant for academic projects, they reveal a focus on skills for locating and accessing sources without instructions and approaches to engage with the information from these sources towards creating knowledge. These tutorials and guides address an important but single aspect of the knowledge-creation process, i.e. locating and accessing information by leading to static lists of sources.

![Tutorials and Guides]

Figure 4.4: Lib09 Tutorials on finding sources
2. Ethical approaches to using information are encouraged via tutorials.

There appears to be a strong anti-plagiarism thrust as the library offers two plagiarism tutorials for students and a guide for faculty. The library’s flagship plagiarism tutorial T4 includes an overview of plagiarism and a video detailing the serious and negative consequences of incidences of plagiarism especially in academia, reported in recent news stories. The personal and institutional implications of plagiarism are detailed. Although utilizing strong language, an interactive, teaching approach is used throughout the video with questions and prompts for developing knowledge as well as procedural skills for avoiding plagiarism. Examples of intentional and unintentional plagiarism are included with note-taking tips and suggestions for writing as scaffolding techniques. The tutorial links to an academic integrity tutorial which also details the consequences of violation of academic integrity within the university.

3. Critical inquiry and critical thinking are addressed in tutorials

Attention is given to encouraging critical thinking and engaging students in critical inquiry which are foundational goals for the libraries’ instruction program. Various approaches are adopted via tutorials. A suite of 5 tutorials addresses evaluation of sources including books, magazines, journals, newspapers and websites. “Tell if it’s scholarly” and “Tell if it’s a review article” use a questioning approach to encourage students to think critically about different types of articles encountered in the research process. In a very general and somewhat generic context, students are asked to distinguish between “reliable and unreliable” sources via evaluation criteria for websites, books and articles. Although attempting to encourage critical thinking, the use of a “list” approach to
evaluation may not allow for deep engagement with information and development of inquiry competencies.

Subject specific tutorials employ several approaches to encourage critical thinking. Included in the suite of engineering tutorials are topic specific tutorials which deal with problem solving and critical evaluation of real world situations. The use of reflection questions, prompts and refutation text allows for engaging in critical inquiry. A questioning approach employed in the plagiarism tutorial is also aimed at encouraging a critical and ethical approach to using information and information sources.

4. **Online tutorials offer avenues for integrating information literacy outcomes in the curriculum.**

Multiple approaches are suggested by the libraries to incorporate information literacy outcomes via online tutorials. A toolkit designed for faculty in First Year Courses, includes multiple collaboratively designed assignments, learning outcomes, and suggested tutorials and appropriate sections for achieving these learning outcomes. Tutorials on evaluating sources, avoiding plagiarism and understanding citations, include suggestions and instructions to faculty towards using appropriate sections for inclusion in academic courses and assignments.

Table 4.19

*Lib09: Claims from policy documents and online tutorials: Espoused theories and theories-in-use*

<table>
<thead>
<tr>
<th>Espoused Theories</th>
<th>Theories-in-use</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The University mission of excellence in education, research and service is realized through scholarly inquiry, creativity, knowledge creation and values.</td>
<td>1. Online tutorials address multiple information literacy competencies and outcomes with a focus on developing strategies for accessing information via sources.</td>
</tr>
</tbody>
</table>
2. The University Libraries advance the academic mission of the university through fostering information discovery, creativity and knowledge creation.

3. Information literacy instruction is the vehicle through which the Libraries develop competencies in information seeking and critical inquiry.

4. Information literacy is defined as the ability to think critically about information.

5. Integration of research and critical inquiry outcomes in the curriculum is a key priority of the Libraries.

2. Ethical approaches to using information are encouraged via tutorials.

3. Critical inquiry and critical thinking are addressed in tutorials.

4. Online tutorials offer avenues for integrating information literacy outcomes in the curriculum.

Reflective Discussion

*Congruence and Incongruence*

Congruence and connections exist between the mission and goals of the libraries and the university. Framed by human values of integrity and ethics, the libraries mission expresses support for the university’s teaching agenda with outcomes and processes towards developing intellectual abilities and lifelong learning. The espoused discourse of the libraries highlights outcomes of information discovery, critical thinking and inquiry and knowledge creation via collaborative instructional activities and these reflect parallel outcomes of “development of new knowledge” and inquiry in the mission of the university. While some of these espoused theories are explicitly reflected and demonstrated in practice via online tutorials, there are instances of incongruence.

*Congruence: Culture of Collaboration*

The creation of “partnerships” to realize outcomes of knowledge creation is espoused by the libraries. This aspect of the library’s mission is underscored by the detailed and varied instruction services offered to faculty. Indepth analysis of policy
documents suggests the creation of a culture of collaboration between librarians and teaching faculty for effective integration of information literacy competencies. Attempts are made to realize this in online tutorials and guides.

The move towards ‘true collaboration’ and curriculum integration is also indicated by the retiring and removal of the library’s stellar online research tutorial which served primarily as a stand-alone generic instruction tool and was used also within Freshman English classes for several years. The coordinator of information literacy explained the need to rethink a generic tutorial in an era of integrating information literacy outcomes across the curriculum:

So when [The Tutorial] was created, it was created for this program and also for anybody….Yes we are moving away from the idea of one tutorial meeting the information literacy learning outcomes for the campus. It's not just course integrated enough.

It is noteworthy that new tutorials developed, address similar outcomes that were included in the retired flagship tutorial. In addition, although the modular design of shorter tutorials facilitates integration in different courses, the librarian explains that the program involves the integration of learning outcomes rather than the integration of tools and so tutorials may not be used at all in an instruction session.

The librarian speaks to issues of collaboration and integration and confirms the “culture of collaboration and integration”

The way our program works now is that we basically work with the faculty in this core curriculum. They teach signature courses to freshmen. They are interdisciplinary academically rigorous courses with an information literacy component required. And we work with those faculty to integrate information literacy and achieve those learning outcomes in their course in whatever way works best for the faculty member and the students. So it could be a tutorial although rarely it is. It’s usually some sort of instruction session or series of instruction sessions or its guides and assignments and they never see us at all.

Our biggest initiative now is with the signature courses because we have this opportunity for the first time ever to reach every freshman.
We created a wiki for all these instructors that basically mapped the information literacy learning outcomes to their standard syllabus. They have three units and their class and for each unit we establish learning outcomes and this wiki basically contains materials for the instructors themselves like how they can talk to their students about these things and then exercises that they can use if they are in a hands-on class or a demo-only classroom or if they are in a no technology classroom, assignments that they give their students to take home. And then there are screen shots on how to use databases because a lot of the instructors will not know that. So we have all this material that we developed in our pilot. And we will visit the class 4 times over the course of the fall semester, at the beginning and then for each unit to talk about and to teach them the stuff and they will participate in a blog and discussing and answering questions. So we will be supporting them behind the scenes. And our hope is that by building in these concepts, over the course of the semester and revisiting important ones over and over again, and having the instruction not be like during a field trip to the library but it will actually be from their primary instructor during the course of their regular call it will lead to deeper students’ learning.

She highlighted benefits of collaboration:

I feel that our program is built on this idea of heavy faculty-librarian collaboration and having information literacy as a shared responsibility and I think that’s the best way to teach it. And I think this model is the best way to approach it. Its not efficient time -wise at all but we all believe that’s what we need to do for student learning and so there’s no one size fits all approach.

The vision behind the development of the tutorial and the process of reaching the university community is discussed by the coordinator:

Well what influenced it really for all of us is that in this office we are very undergraduate oriented. At a large tier 1 university with more than 30, 000 undergraduates here, undergraduates are at the lowest members of the totem pole. So having worked with undergraduates for years and years we are always seeing these students come through who knew what they were not supposed to do and were scared and all they were getting were threatening messages and they did not necessarily know what it was. So they did not want to do it but they did not know not to. So many questions that we would get at the reference desk and in our chat reference sessions related to is it ok for me to do this, is it ok for me to do that. And you should not feel paranoia and if you are scared on how you are going to use information, it’s really limiting in your ability to synthesize into your knowledge base.

Reaching out to faculty re plagiarism issue:

So that prompted us to start talking to faculty which is what we first did, (that’s how that first page came out) about how they can help their students. So instead of being policemen in their classes, (and people don’t really want to be) how to be teachers. And so I started doing workshops with the Head of the Writing across the Curriculum Program, for faculty a couple times a year about how to build plagiarism-proof assignments (there is really no such thing) but how to think about where your students are, what they do and don’t know, how to help them along the way, how to teach them how to write and teach them how to cite and teach them to understand why its important and why they should care. And we did those but we realized we were reaching maybe 30 faculty per year and there are a lot of faculty on this campus so that was not the way to go.

Student outreach re plagiarism issues:
Then we decided we want to create a tutorial for students and we started working on that. At the same time there is a Student Government Committee on Academic Integrity and they came to us with the same concern like everyone is scared about plagiarism so what are we going to do. Out of that collaboration a bunch of things happened 1. we got more inspired to finish the tutorial, 2. We created the academic tutorial for Student Judicial Services, the animated one, because if you try to figure out what happens to you if you get accused of plagiarism you’re already freaked out and you don’t know what will happen next. So it talks to you like a normal person. And then we created a peer-to-peer training program. We have learning communities here that are called Freshmen Interest Groups which are basically groups of 20-25 student who take 3 classes together and then they meet with an upper division mentor once a week for support and to learn about resources on campus. And we have been working with this program for years and years, assigning librarians to each FIG and talking with their mentors. So we created a kind of fun game (it’s a lot like the tutorial) games and quizzes and the FIG mentors, they don’t have to but they can take one of the weekly sessions with their ‘mentees’ and they can do that. We thought that providing that opportunity to discuss plagiarism in a non threatening way, its not like an expert coming in and telling them what to do and what not do, it may lead to deeper student learning. So we did that and now there is a chance that the tutorial … they are a trying to create an academic integrity statement that has to appear on every syllabus and they make a link to the tutorial. That would be great because basically this came out of the idea that you need to give people resources, not just threats and that if people are scared they are never going to get beyond that.

**Incongruence**

The libraries’ goal of enabling knowledge creation and critical thinking is not fully achieved in the online tutorials.

The Coordinator of information literacy explains:

> It’s [critical thinking] either in the face-to-face or the materials we create for signature course faculty to do themselves with their students without us there at all.

She discusses how critical thinking is enabled:

> The way we want to encourage critical thinking is moving away from tool-based instruction and making sure we incorporate (of course we have to teach the tools or they would not find anything) reflections whether its in an assignment or in an instruction session. Reflection before they start their search, what kind of information they may need, who had produced it what might be the reasons people might have produced that information and how that might impact what it is, how it is presented where you might find it. And also the language you may use to search and how that might impact what you get back and then thinking critically about what you actually do find and sort of the traditional ideas of evaluating information, whether its from the web or from a journal or book. And what we found with students is that if we tell them that the tools exist and where they are and what they do, our student here population is capable of using them. What they can’t do is to pick one and figure out what words to use. So we just front load the instruction with the reflective evaluative content, having them think about these things before they search and then we give them time to search and we help them and make them think about they found.

Disconnects exist also between the definition of information literacy which emphasizes critical thinking and inquiry and multiple tutorials which focus on finding sources.
This apparent focus on engaging students with information sources in the online tutorials is explained by the coordinator of information literacy.

So I guess our online tutorials, most of the ones we have created lately are just point of need tutorials that can be incorporated in our instruction…. But we have not been asked to create a course integrated tutorial for one of these signature courses that would be the way we would achieve these information literacy outcomes, so none of them are really comprehensive course integrated tutorials that have that reflective aspect in them.

The libraries promote information literacy competencies as enabling success in work and personal lives yet competencies to develop these not clear in the tutorials. The librarian explains how lifelong learning is encouraged:

What we are hoping, and we speak to them about this all the time and how it works, is that the skills they are applying to an academic endeavor are the same things they can apply to any endeavor that they have in their lives. Which is one of the reasons that we try to do a lot of concept talk and a lot less tool talk as they are not going to have these tools when they graduate. But they will they have these ideas and the critical thinking skills when they graduate. So I guess its that people have information needs all the time, and we talk to students about this, so what do you do when you need to know something, well they all go to Wikipedia. So we want students to think about the fact that that you will always have information needs, you had them before you came here, when in high school, they are not just school related. We talk a lot about their regular behavior, what do you do when someone mentions something at a party and you don’t want everyone to know you don’t know what it is. So what will you believe and not believe. So by trying to talk about these concepts they are applying like evaluating information that they would apply to something they will use for a college level research paper but talking about it in the context of you do this stuff, you don’t believe everything you read on the web. How do you make these decisions? So we are trying to reinforce and hopefully raise their standards as to what kinds of information they would believe and think about the context that they are in when they are looking for information since something may be fine in one situation and not in another. And so we are hoping that by tying it back into their regular behavior, and sort of demystifying it a bit it will help them to see how it applies to every information need they have no matter where they are or what they are doing, whether its at school, at work or at home on Sunday afternoon.
4.10 Case 10: Lib10

Concepts derived from policy documents

*University:* Intellectual inquiry; student-centered; investigation; discovery; interdisciplinary collaboration; excellence in teaching, learning, scholarship; creativity.

*Library:* Teaching/learning environment; pursuit of knowledge; intellectual and ethical integrity; life long learning; inquiry; diverse view points; self-reliance; discernment; information resources; information literacy; partnership; critical thinking; conceptual and skills; basic research; search skills.

*Predominant Themes:*

*University:* Excellence in knowledge-based outcomes

*Library:* Ethical approach to knowledge-based outcomes and processes towards lifelong learning in an information literacy environment.

Concepts derived from online tutorials

College-level research; research strategies; using information sources; finding tools; searching concepts; searching strategies; evaluation criteria; citing; plagiarism, ethical use of information; synthesis, writing

*Predominant themes:* Information literacy outcomes; Information sources

Table 4.20

*Lib10: Concepts from mission documents and online tutorials*

<table>
<thead>
<tr>
<th>Mission Documents</th>
<th>Online Tutorials</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>University</strong></td>
<td><strong>Evidence</strong></td>
</tr>
<tr>
<td>• Intellectual Inquiry</td>
<td>• University mission</td>
</tr>
<tr>
<td>• Student-centered University</td>
<td>• Institutional goals</td>
</tr>
<tr>
<td>• Discovery</td>
<td></td>
</tr>
<tr>
<td>• Collaboration</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Evidence</th>
<th>Concepts</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>• College level research</td>
<td>• University mission</td>
<td>• Research Tutorial T1</td>
</tr>
<tr>
<td>• Research Strategies</td>
<td>• Institutional goals</td>
<td>• Research Tutorial T2</td>
</tr>
<tr>
<td>• Using libraries</td>
<td></td>
<td>• Retired Research</td>
</tr>
<tr>
<td>• Using</td>
<td></td>
<td>Tutorial T7</td>
</tr>
</tbody>
</table>
Claims developed from concepts in policy documents

1. University mission focuses on developing knowledge outcomes of intellectual inquiry, investigation and discovery within a student-centered environment.

2. The Libraries support the University mission and articulate goals of pursuit of knowledge, intellectual integrity and excellence in teaching.

3. Information literacy is understood on a continuum from access to use of information for a specific purpose.

4. The information literacy goals of the Libraries are achieved through partnerships with academic faculty and the University community.

5. The Libraries develop information literacy competencies via multiple modes including the online tutorial.

Claims/Evidence

1. University mission focuses on developing knowledge outcomes of intellectual inquiry, investigation and discovery within a student-centered environment.
The university confirms its student-centered character as it aims at “building intellectual inquiry, investigation, and discovery into all undergraduate, graduate, and professional programs”. These outcomes will be achieved through explicit goals of “interdisciplinary collaboration”, and “excellence in teaching, research, scholarship and learning”.

2. **The Libraries support the University mission and articulate goals of pursuit of knowledge, intellectual integrity and excellence in teaching.**

Promoted as a “learning and teaching environment”, the Libraries assert an unambiguous role in supporting the university’s mission with goals of fostering the ‘pursuit of knowledge”, “intellectual and ethical integrity” and “excellence in teaching and learning” which reflect critical values of “respect for inquiry” and “diverse points-of-view”. The Libraries are explicit that a major aspect of the mission is to encourage lifelong learning by “educating users to be self reliant and discerning in selection and use of information resources”. Developing an information literacy program is a key goal of the libraries to achieve this mission of encouraging lifelong learning.

3. **Information literacy is understood on a continuum from access to use of information for a specific purpose.**

Information literacy is defined as the “ability to identify, retrieve, evaluate and use information that is appropriate to a need”.

4. **The information literacy goals of the Libraries are achieved through partnerships with academic faculty and the university community.**

The Libraries are very clear that they will develop an information literacy program in collaboration with academic faculty and the “broader university community” to “educate
students to be critical thinkers” and to “fulfill lifelong information needs”. Information literacy competencies are presented as essential for both academic and lifelong information needs. The information literacy agenda will therefore provide instruction to teach both “skills and concepts”.

5. **The Libraries develop information literacy competencies via multiple modes including the online tutorial.**

   A goal of the Libraries will develop and provide instruction to teach students concepts and skills “in the place, format, and at the time students will benefit from it most …utilizing technologies in order to make instruction relevant, valuable, and convenient.” To meet this goal the libraries design varied instruction resources including course-related instruction and online tutorials.

**Claims developed from concepts in online tutorials**

1. Online tutorials address a range of skills and competencies with a focus on strategies for accessing and using information resources.

2. Ethical dimensions of the mission of the Libraries are addressed in plagiarism tutorial.

3. Tutorials give attention to knowledge outcomes of synthesis and critical thinking.

**Claims/Evidence**

1. **Online tutorials address a range of skills and concepts with a focus on strategies for accessing and using information resources.**

   The Libraries offer an interactive modular research tutorial which speaks to varied learning outcomes including research concepts and strategies for college level assignments, searching skills in locating and using books, journals and the Internet,
evaluating sources, avoiding plagiarism, and citing sources. Modules include 1) college level research, 2) using the library catalog, 3) finding articles, 4) using the Internet and 5) citing sources. The tutorial utilizes a conversational style of instruction and questions throughout to activate prior knowledge and to reinforce concepts taught. “Apply what you know” strategy and a review of concepts taught invite reflection and practice. A noteworthy feature is the use of a light bulb to highlight important concepts.

A suite of short tutorials, videos and guides as well as subject tutorials address strategies for accessing and using sources including “articles, books, journals, magazines and newspapers”.

2. Ethical dimensions of the mission of the Libraries are addressed in a plagiarism tutorial.

A citation module in the research tutorial addresses ethical use of information including suggestions for avoiding plagiarism. The tutorial is couched in negative language and highlights the consequences of plagiarism using terms such as “academic death”, expelled, sued and “charged with a crime”. However the tutorial employs strategies to scaffold students with procedural skills for developing their own products and for avoiding plagiarism.

3. Tutorials give attention to knowledge outcomes of synthesis and critical thinking.

Critical thinking is addressed via various strategies including “reflecting on the topic” to develop terms for searching; to identify ways of expanding the search. Tutorials also include strategies for critically evaluating information and information sources. The research tutorial Brief attention is given to students developing a product as they are
encouraged to “write a draft as they think through their own ideas”. The tutorial uses a
‘light bulb’ strategy to denote important concepts and this step of writing a draft is
accordingly highlighted in the research process.

Table 4.21

*Lib10: Claims from policy documents and online tutorials: Espoused theories and
theories-in-use*

<table>
<thead>
<tr>
<th>Espoused Theories</th>
<th>Theories-in-use</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. University mission focuses on developing knowledge outcomes of intellectual inquiry, investigation and discovery within a student-centered environment.</td>
<td>1. Online tutorials address a range of skills and concepts with a focus on strategies for accessing and using information resources.</td>
</tr>
<tr>
<td>2. The Libraries support the University mission and articulate goals of pursuit of knowledge, intellectual integrity and excellence in teaching.</td>
<td>2. Ethical dimensions of the mission of the Libraries are addressed in plagiarism tutorial.</td>
</tr>
<tr>
<td>3. Information literacy is understood on a continuum from access to use of information for a specific purpose.</td>
<td>3. Tutorials pay attention to knowledge outcomes of synthesis and critical thinking.</td>
</tr>
<tr>
<td>4. The information literacy goals of the Libraries are achieved through partnership with academic faculty and the university community.</td>
<td></td>
</tr>
<tr>
<td>5. The Libraries develop information literacy competencies via multiple modes including the online tutorial.</td>
<td></td>
</tr>
</tbody>
</table>

**Reflective Discussion**

**Congruence**

The mission of the university espouses knowledge-based outcomes for all
constituents and the espoused discourse of the Libraries supports this focus with a
mission to foster the pursuit of knowledge and learning through outcomes critical
tinking, lifelong learning, inquiry and discernment. Congruence between the espoused
rhetoric of the university and the library is explicitly articulated. In addition, the libraries
strive to establish levels of congruence between beliefs about, and goals for information
literacy and how these are demonstrated and reflected in teaching via online tutorials:

- Congruence exists between the goals of the Libraries for “educating users to be
  self reliant and discerning in selection and use of information resources” and the
  focus in tutorials on strategies for using an array of information sources.

- Congruence exists between the goal of information literacy instruction to teach
  skills and concepts. The research tutorial includes both conceptual understandings
  and procedural skills.

- Congruence exists between goals for enabling ethical integrity and the plagiarism
  module which addresses the avoidance of plagiarism and encourages ethical use
  of information towards knowledge creation.

\textit{Incongruence}

There were however inconsistencies between knowledge focused outcomes espoused
in the policy documents and the emphasis on using sources in all tutorials:

- Missing were significant attempts at encouraging critical thinking beyond the
  evaluation of sources. No attention was given to enabling understanding of
  “diverse points of view”, which the instruction policy claims would happen. Little
  attention to fostering knowledge creation was observed.
Curriculum integration although espoused was not clearly observed in the design or content of tutorials.

The Coordinator of instruction explains critical thinking in the research tutorial and in face-to-face instruction:

I think the tutorial only touches on critical thinking in a small way, mostly in the way of analyzing a topic and breaking it down. The only other way might be how do you determine what type of resource is appropriate for a given situation. I don’t think the tutorial addresses that explicitly although depending on the student they may get some of that.

In our [face-to-face] instruction generally we talk a lot more about types of resources and how they are effective for different situations e.g. books vs. articles vs. websites, popular vs. scholarly vs. trade, or, or when you need primary source material vs. secondary source material. What are the pros and cons of each of these resources? So that as critical analysis is part of our instruction as a whole but not very much in the tutorial. The other thing that we definitely talk about with our intermediary classes would be synthesizing material.
4.11 Case11:Lib11

Concepts derived from policy documents

*University*: Wisdom, understanding; values; discovery; creativity, national and global citizenry; knowledge creation; critical abilities.

*Library*: Learning; information literacy: finding, evaluating knowledge resources; search strategies; information seeking; collaboration; lifelong learning; curriculum integration; critical thinking; decision making; information use; information creation.

*Predominant Themes:*

*University*: Knowledge-based outcomes; creativity; social responsibility; lifelong learning

*Library*: Knowledge outcomes and processes; information literacy; lifelong learning

Concepts derived from online tutorials

Research strategies; identifying and finding information sources; critical evaluation of information and information sources; citing sources

*Predominant Themes*: Information literacy outcomes
Table 4.22

*Lib11: Concepts from mission documents and online tutorials*

<table>
<thead>
<tr>
<th>Mission Documents</th>
<th>Online Tutorials</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>University</strong></td>
<td></td>
</tr>
<tr>
<td>Concepts</td>
<td>Concepts</td>
</tr>
<tr>
<td>Wisdom</td>
<td>Search strategies</td>
</tr>
<tr>
<td>Understanding</td>
<td>Finding</td>
</tr>
<tr>
<td>Knowledge</td>
<td>information</td>
</tr>
<tr>
<td>Values</td>
<td>Using databases</td>
</tr>
<tr>
<td>Creativity</td>
<td>Finding articles</td>
</tr>
<tr>
<td>National citizenry</td>
<td>Finding books</td>
</tr>
<tr>
<td>Global citizenry</td>
<td>Plagiarism</td>
</tr>
<tr>
<td>Intellectual</td>
<td>Ethical use of</td>
</tr>
<tr>
<td>discovery</td>
<td>information</td>
</tr>
<tr>
<td>Creativity</td>
<td>Research</td>
</tr>
<tr>
<td></td>
<td>strategies</td>
</tr>
<tr>
<td></td>
<td>Evaluating</td>
</tr>
<tr>
<td></td>
<td>information/</td>
</tr>
<tr>
<td></td>
<td>information</td>
</tr>
<tr>
<td></td>
<td>sources</td>
</tr>
<tr>
<td></td>
<td>Judging reliability</td>
</tr>
<tr>
<td></td>
<td>Citing sources</td>
</tr>
<tr>
<td>Evidence University mission</td>
<td>Evidence Instruction Program mission</td>
</tr>
</tbody>
</table>

| **Library**        |                  |
| Concepts           | Concepts         |
| Teaching           | Search strategies|
| Learning           | Finding          |
| Research           | information      |
| Research           | Using databases  |
| literacy           | Finding articles |
| Knowledge          | Finding books    |
| Critical thinking  | Plagiarism       |
| Decision making    | Ethical use of   |
| Lifelong learning  | information      |
| Information use    | Research         |
| Information        | strategies       |
| producers          | Evaluating       |
| Search strategies  | information/     |
| Information        | information      |
| seeking            | sources          |
| Collaboration      | ethical use of   |
| Curriculum         | information      |
| integration        |Ethical use of    |
| Evaluating         | information      |
| information        | sources          |
|                    | Citing sources   |
| Libraries Mission  | Goals for in-    |
|                    | Instruction      |
| Instruction Program mission | Design |

| Evidence Libraries Mission Instruction Program |
|                                               |
| Evidence Research Tutorial Plagiarism Tutorial |
| Short tutorials on Finding books Finding articles Citing sources |
| Searching/Research Tutorial                  |
Claims developed from concepts in policy documents

1. The University mission centers on developing knowledge-based learning outcomes and values via creative instruction.

2. The Libraries support the University mission via information services and learning environments.

3. Goals for instruction and information literacy focus on developing skills, competencies and attitudes to enable information use and information creation.

4. Information literacy is defined and conceptualized on a continuum from information access to the use of information for a specific purpose.

5. Instructional collaboration is an essential process for integrating information literacy in the academic curriculum.

Claims/Evidence

1. The University mission centers on developing knowledge-based learning outcomes and values via creative instruction.

   The espoused discourse of the university centers on students achieving outcomes of “knowledge, values and wisdom” via “creative instruction”. The ultimate goal of all initiatives is towards “generating knowledge” through research and scholarly activities and developing students with understanding to become “extraordinary citizens and global leaders”. The university espouses a student-centered environment to realize its mission and goals.

2. The Libraries support the University mission via information services and learning environments.
Promoted as “vital to the teaching, learning, and research and outreach mission of the university”, the libraries become agents for fulfilling the university mission with providing “exemplary information services” and “inspirational environments for learning”.

To enable the support for the teaching and learning student-centered mission of the university, the instructional services of the libraries promote programs aimed at equipping students with “tools necessary for academic careers and lifelong learning”. The programs will therefore develop information literacy skills, attitudes and a knowledge-base which are seen as essential for students to become “efficient users and producers of information”. The instruction program aims at developing graduate attributes of “success in professional, personal and civic lives” (Instruction Program Mission).

3. **Goals for instruction and information literacy focus on a developing skills, competencies and attitudes to enable information use and information creation.**

The libraries promote the “teaching of strategies as well as mechanical skills in information seeking”. These skills and strategies include, how to use libraries, identifying and selecting information sources, evaluating sources, as well as research strategies such as defining information needs. In addition, all instruction tools designed by the libraries will teach students “information seeking as a process that involves critical thinking and decision making” (Goals for Instructional Design).

The libraries provide services and resources to realize goals for instruction. Modes of instruction include face-to-face teaching, and online resources which are
integrated in online Course Pages. These online resources include a modular information literacy research tutorial and short point-of-need tutorials which seek to develop information literacy skills and competencies. The research tutorial is promoted as providing basic research tools and strategies.

4. **Information literacy is defined and conceptualized on a continuum from information access to the use of information for a specific purpose.**

   The instruction program mission explicitly states that in an age of rapid technological change and proliferation of resources of varying quality, it is simply not enough to provide students with access to information. It is essential that students learn not only how to access resources efficiently, but also how to evaluate, manage, and use them effectively. The information literate student must have a complex set of abilities ranging from accessing needed information effectively and efficiently, evaluating the information and its sources critically, incorporating selected information into one's knowledge base, using information effectively to accomplish a specific purpose and understanding the economic, legal, and social issues surrounding the use of information, and access and use information ethically and legally (*Instruction Program Mission*).

5. **Instructional collaboration is an essential process for the integration of information literacy in the academic curriculum.**

   The mission of the instruction program is to “collaborate with faculty to integrate information literacy into learning objectives across the curriculum to develop students’ information literacy skills and knowledge. The libraries advocate that information literacy “must be explored in the context of different disciplines within
“Information literacy is most effective when it is fully integrated into [class] goals” (Campus Library Instruction). The libraries are explicit that information literacy cannot be learned in a vacuum and so they will provide resources to faculty to enable these objectives. Collaboration with faculty will ensure that students develop information literacy skills and attitudes (Instruction Program Mission).

Claims developed from concepts in online tutorials

1. Online tutorials develop varied competencies and skills with a focus on strategies for accessing and using sources.

2. Critical thinking is encouraged via evaluation strategies in online tutorials.

3. Curriculum integration is practiced via online resources.

Claims/Evidence

1. Online tutorials develop varied competencies and skills with a focus on strategies for accessing and using sources.

   The library develops varied online resources to support information literacy instruction. These include a comprehensive 5-module research tutorial, short video tutorials and subject specific research guides.

   The research tutorial includes modules on search strategies, skills in understanding assignments, choosing topics, and skills in identifying books and articles in the library and in databases respectively. Procedural skills of using the online catalog and using article databases are also addressed in detail. Short video tutorials address skills of choosing a topic, finding books and articles, evaluating information and information sources, and citing sources.
The research tutorial advocates for new search strategies and skills for college level research and addresses research approaches to meet the demands of college. Using interactive dialog, the tutorial highlights new and different types of assignments, search tools in addition to Google and resources in addition to the free web such as “journal articles written by experts”; new types of search strategies and skills to access these resources. The tutorial focuses on the teaching of search strategies for interrogating with tools such as library catalogs and library databases to identify and locate information sources.

2. **Critical thinking competencies are encouraged via evaluation strategies in online tutorials**

   Detailed strategies are developed to encourage critical examination of information and information sources. A video tutorial on evaluating sources adopts a questioning approach to information and information sources and addresses strategies for supporting conclusions with information that is reliable and relevant. Questions guiding the critical evaluation of sources include: What is the information about? Where is the information coming from? Why was it created?

3. **Curriculum integration is practiced via online tutorials**

   The comprehensive research tutorial is an integral component of the Undergraduate Communications requirement for all university freshmen. Video tutorials, *Finding books* and *Finding articles* are embedded in research guides for specific courses and subjects.
Table 4.23

Lib11: Claims from policy documents and online tutorials: Espoused theories and theories-in-use

<table>
<thead>
<tr>
<th>Espoused Theories</th>
<th>Theories-in-Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The University mission centers on developing knowledge-based learning outcomes and values via creative instruction.</td>
<td>1. Online tutorials develop varied competencies and skills with a focus on strategies for accessing and using sources.</td>
</tr>
<tr>
<td>2. The Libraries support the University mission via information services and learning environments.</td>
<td>2. Critical thinking is encouraged via evaluation strategies in online tutorials</td>
</tr>
<tr>
<td>3. Goals for instruction and information literacy focus on developing skills, competencies and attitudes to enable information use and information creation.</td>
<td>3. Curriculum integration is practiced via online tutorials.</td>
</tr>
<tr>
<td>4. Information literacy is defined and conceptualized on a continuum from information access to the use of information for a specific purpose.</td>
<td></td>
</tr>
<tr>
<td>5. Instructional collaboration is an essential process for integrating information literacy in the academic curriculum.</td>
<td></td>
</tr>
</tbody>
</table>

Reflective Discussion

Congruence

The mission of the libraries echoes the knowledge focus of the university with goals for instruction and information literacy aimed at enabling this mission. Addressing a complex set of competencies which includes critical thinking, the information literacy program reflects the university’s instruction goals. In addition there appears to be instances of congruence between the mission of the libraries for information literacy and the competencies addressed in tutorials. The libraries offer a breadth of tutorials which attempt to develop both strategies and skills as outlined in the goals for instruction. The research tutorial which is promoted as providing basic research tools and strategies
includes modules which address detailed research strategies towards developing a topic. Students are introduced to the complex world of academic research (beyond Google) and this is done with the help of faculty who explain the expectations and demands of college experience. Apparent collaboration with faculty is presented. Curriculum integration is observed in the tutorials which are embedded in course content, and indicates a level of congruence between the espoused discourse on integration and theories-in-use via practice.

**Incongruence**

While there are noteworthy attempts to address critical thinking and research strategies in tutorials, minimal attention is paid however to strategies for enabling the use of information towards knowledge creation. There is an apparent gap in the goal of students becoming “efficient producers and incorporating selected information into their knowledge-base”. There seems to be greater focus on students using information sources without the parallel outcome of them “producing information”. The research tutorial devotes three chapters to discussing strategies for finding sources yet gives little attention to outcomes of synthesis and analysis of information.

The coordinator of information literacy addresses the matter:

> I think one challenge is I am yet to encounter online tutorials that do an excellent job of addressing that area. So much of that work of using information to accomplish a specific purpose happens in a particular context and the kinds of skills and abilities that are involved are much more complex. So I think its interesting that the CLUE does it a little and I have seen some other projects that people are working on the opposite end of the spectrum and trying to create a context and help students understand what a the research university is and how they play a role in it. I have yet to see things that really get at this.

The process adopted to achieve information use is explained which highlights the essential role of disciplinary collaboration:
I think like most instruction programs we have been historically focused on the finding and evaluation and the information literacy spectrum. But we are always looking for ways to get involved in the full spectrum of information literacy skills. One way that we do that is that we are a part of the communication requirement curriculum so we work really closely with those programs in a very structured way that’s written into the campus curriculum so that students get a full experience of not just finding information but also using it to accomplish a specific purpose. So it’s more of a collaboration with instructors. We have also been more recently exploring projects like how can we work with instructional technologists on campus with courses that are creating multimedia projects. So the communication requirement is very well established since the 90s and these other things are more sort of pilot experimental types of things. Another example of production is that we have this very, one of the best developed program I have seen for citation management. In addition to end user documentation we have some services for faculty to do that so we are working with them to get them integrated into their courses. So we are always looking for ways to be a part of the broader spectrum moving towards the production and I think that a number of libraries are still working on that. I don’t think it’s easy unless as you say there is this kind of collaborative culture because it has to work through the disciplines.
4.12 Chapter Summary

The chapter aimed at documenting the results of the rigorous and detailed analysis of mission documents and online tutorials of eleven academic libraries. A constant comparison approach (Strauss & Corbin, 1998) was used to identify concepts and themes from these documents. These themes, while varied coalesce around knowledge, critical thinking, ethical values and lifelong learning. Statements of claims which were developed from these concepts and themes which emerged allowed for framing of relationships between the espoused ideals of these libraries and the focus of instruction via online tutorials. Varying levels of congruence and incongruence were identified in these relationships. The voices of librarians, intimately involved with information literacy in the libraries provide clarification and explanations for the evidence from the analysis of documents and tools of practice. Rich and complex descriptions of information literacy as practiced emerge. Meta-claims were developed from the individual institutional claims. Chapter 5 describes the findings from the meta-analysis aimed at providing a holistic picture of information literacy education via answers to the three research questions and sub-questions.
CHAPTER 5
Findings
Meta-Analysis: Answering Research Questions

5.0 Chapter Overview

The previous chapter detailed the findings of the indepth analysis of mission documents and a range of online tutorials of eleven academic libraries which suggested varying levels of congruence and incongruence between espoused theories and theories-in-use in these institutions. Statements of claims which were developed for these institutions were compared and meta-claims developed to provide a comprehensive holistic picture of information literacy education.

This chapter describes the findings of the research in relation to the three research questions of the study as well as related sub-areas and questions. Meta-claims which were developed guided the answers to these questions. The following research questions were addressed:

RQ1. What are the predominant conceptions/understandings of information literacy as seen in mission statements of academic libraries?

RQ2. How is information literacy practiced as demonstrated in online tutorials of academic libraries?

RQ3. What are the relationships between philosophy and practice of information literacy?

The findings of the study establish the 1) predominant conceptions of information literacy 2) practice of information literacy via online tutorials 3) relationships between
conceptions and practice through the lens of espoused theories and theories-in-use. The findings are detailed in the following sections.

5. 1 Conceptions of Information Literacy: Espoused Theories

The literature and research findings on information literacy delineated in chapter 2 of this study provide the context for possible areas which may shape espoused conceptualizations of information literacy in the academic library community. Kuhn (1996) posits that professional practice is underpinned and shaped by a received set of beliefs, values and models. Argyris and Schön (1974) explicate theories of action as explanations arising from unconsciously or consciously held beliefs, values, theories, concepts, rules policies, norms or skills which are utilized to describe or predict action. In this study therefore, espoused theories relate to conceptions including values, beliefs, rules, theories and definitions of information literacy education which are expressed by academic libraries and librarians.

Sub-areas addressed

In attempting to identify the predominant conceptions/understandings of information literacy articulated by academic libraries, a number of sub-areas to the first research question were explored:

1. Relationships between missions of the library and the university
2. Learning goals and objectives in IL mission statements
3. Definitions or explanations of information literacy
4. Assumptions and claims regarding information literacy

Rigorous unpacking and comparative analysis of concepts in official mission documents led to the development of broad statements of claims for each library in the
sample. Meta-claims emerged from further comparative analysis which indicate 1) congruence and consistency between the missions of the university and the library; 2) knowledge oriented focus of missions of academic libraries which was also partly evident in definitions of information literacy 3) information literacy agendas aimed at intellectual and lifelong learning outcomes and 4) IL agendas were supported by values and assumptions including the integral role of instructional collaboration and curriculum integration for realizing information literacy goals and objectives.

**Meta-claims developed**

The following meta-claims emerged from the comparative analysis of claims from mission documents of 11 academic libraries:

- Libraries as environments of learning become agents for fulfilling missions of universities.
- Knowledge creation and application are essential outcomes of missions of universities shaped by social and ethical values.
- The espoused discourse of academic libraries indicates intellectual support for universities by advancing knowledge, critical thinking and learning.
- Information literacy is conceptualized primarily as intentional engagement with information for specific purposes.
- Libraries espouse a “culture of collaboration and integration” as essential to achieving information literacy.
- Information literacy agendas address multiple learning outcomes to enable holistic development of students, including academic success, social responsibility and lifelong learning.
These claims provide a framework for the detailed explication of findings for sub-areas towards a fuller understanding of the espoused theories of information literacy.

5.1.1 Relationships between the teaching missions of the libraries and universities

It was important to identify relationships between the missions of the university and the library as most academic libraries articulate their image and their activities in relation to goals of the university. Whether it was explicitly with the use of terms such as “supports the teaching mission of the university”, “a strategic asset to the university”, “acts in concert with the mission of the university” and “central intellectual resource of the campus” or implicitly through similar goals and language used, there seems to be a fairly overt assumption that activities and conceptions of the academic library will reflect and are embedded in the overall goals of the university. Further, the data suggest that fundamental values and beliefs of universities drive the teaching agendas of academic libraries. To establish and confirm the specific nature of the relationships between academic libraries and their parent institutions, indepth analysis was done of concepts in missions of both institutions.

Missions of universities: knowledge focused

Scrutiny of university missions reveals major goals coalescing around development of knowledge outcomes, personal values and social responsibility. However knowledge-based outcomes emerged as vital for realizing research, teaching and outreach missions. Concepts such as “generating, sharing and applying knowledge”, “intellectual inquiry”, “investigation and discovery” “knowledge production and use”, “advancing knowledge and life long learning”, “critical thinking”, “facilitating acquisition of knowledge” “advance scholarly inquiry, creativity and human values” were identified
236
across mission and goal statements of universities. As premier learning environments
these institutions aim at developing specific student competencies of “rational
discourse”, “analysis”, “skills of reasoning”, “assimilation of information”, all towards
creating knowledge, which confirm their knowledge-oriented focus.
In addition, goals of these universities are guided by values and beliefs including
ethics, truth, religious values, leadership, freedom and human diversity. The social
development of students was articulated with goals such as “responsibility as global
citizens”, “sophisticated and productive citizens and leaders” Outcomes and goals point
to student-centered environments and a holistic development of students in which
academic excellence, lifelong learning and social responsibility were intrinsically linked
to personal and institutional values.
To partly enable these goals, universities promote processes of “excellence in teaching”,
“outcomes-focused teaching”, “hands-on approach to teaching”, academic rigor”,
“research-based teaching”, “creative instruction”, and interdisciplinary collaboration.
Missions of academic libraries: supporting intellectual goals of universities

It is within this knowledge-focused and values-driven milieu that academic
libraries articulate missions and goals. The knowledge concepts and values of universities
are reflected in missions and goals of these libraries and implicitly shape understandings
of teaching and information literacy. Libraries, through varied processes attempt to
realize the teaching goals of their institutions particularly via information literacy
agendas. References to confirm this were abundant as all 11 libraries framed their roles in
the university in a knowledge context, whether in relation to outcomes or processes to
facilitate these outcomes. So libraries articulate missions of “advancing scholarship,
critical thinking and creation of new knowledge”, “inspiring learning and discovery”,


“providing a rich learning environment where information is explored and assimilated into knowledge”, providing “intellectual leadership and extraordinary information experiences towards the advancement of knowledge”, and “partnering for creation of new knowledge”. Table 5.1 details the span of concepts expressed in missions of academic libraries as they support universities and these include fostering of ethical values such as integrity and “objective truth” and developing of social competencies toward students becoming global citizens. These concepts indicate the synergy and connection between missions of academic libraries and universities and suggest that these concepts may drive teaching agendas of academic libraries.

Table 5.1  
*Categories of concepts from mission statements of academic libraries*

<table>
<thead>
<tr>
<th>Themes</th>
<th>Concepts</th>
</tr>
</thead>
</table>
| Knowledge               | - Scholarship  
                          | - Critical thinking  
                          | - Critical Inquiry  
                          | - Constructing meaning  
                          | - Knowledge creation  
                          | - Knowledge transfer  
                          | - Knowledge sharing  
                          | - Intellectual leadership  
                          | - Discovery  
                          | - Information discovery |
| Lifelong Learning       | - Workplace success  
                          | - Future learning  
                          | - Success in professional lives |
| Values                  | - Ethics  
                          | - Ethical integrity  
                          | - Objective truth  
                          | - Human diversity  
                          | - Intellectual Integrity  
                          | - Academic Integrity  
                          | - Agility  
                          | - Collaboration |
| Social Responsibility   | - Global citizens  
                          | - Civic Leaders  
                          | - Informed Citizens  
                          | - Productive citizens  
                          | - Culturally literate  
                          | - Success in civic life |
| Information             | - Finding Information  
                          | - Evaluating Information  
                          | - Research Process  
                          | - Analyzing Information  
                          | - Curriculum Integration  
                          | - Information gathering skills  
                          | - Copyright  
                          | - Communicating  
                          | - Technology  
                          | - Information seeking |
5.1.2 Learning goals and objectives in information literacy mission statements

Meta-claims:

Information literacy is the vehicle through which libraries develop knowledge-based competencies and lifelong learning.

Information literacy missions as reflective of library and university goals and foundational information literacy values.

Understanding goals and objectives of information literacy programs is critical in gauging the espoused theories of information literacy in academic libraries. As major teaching arms of these libraries, information literacy instruction programs are presented as essential vehicles which enable libraries to implement their teaching missions in “supporting” universities. The synergy and congruence which exist between goals of libraries and their universities, is further observed in the language and goals for library instruction. It is apparent that program missions are intricately tied to missions of the libraries as articulated by Lib07, “The mission and vision of [the… University] information literacy program are embedded in the Libraries overall mission and vision statements.”

Findings indicate that activities of instruction/information literacy programs complement the goals of libraries and are intended to assist these libraries in realizing teaching/learning outcomes of the university. This is confirmed by statements expressing
the integral role of information literacy education as in: “provides a foundation for both academic success and lifelong learning” (Lib01). Statements such as “the library promotes students’ participation in inquiry through the development of information literacy skills”, “integral role of information literacy in the academic experience”, information competencies as providing “foundation for lifelong learning, workplace and civic lives”, “developing students into scholars, informed citizens and socially responsible individuals”, all speak to the essential role of information literacy instruction in realizing stated goals of universities.

When asked whether the information literacy mission supported the intellectual goals of the university, an information literacy coordinator replied:

Very much! And that terminology… including information literacy in the mission statement [is important]. We really advocated for it. We really pushed on that when the mission was being reworked and reworded. Personally, I see it as extremely connected. It’s like the foundation of what an institution of higher education is and can be and how a library can support a mission of creating intellectual discovery opportunities and allowing that to happen. So that terminology is there purposefully, and is extremely connected with the whole idea of creating an information literate student body (Lib06).

In addition to their institutional ties, information literacy programs negotiate teaching/learning outcomes in relation to other espoused beliefs and values of information literacy especially through the lens of the ACRL *Information Literacy Competency Standards for Higher Education* (ALA, 2000). So in aligning with missions of their universities and libraries, information literacy programs aim at holistic development of students, focus on developing knowledge-based outcomes including critical thinking and knowledge creation, address lifelong learning and social responsibility while aim at encouraging ethical values. The primary objective of most programs however, is towards developing a broad scope of ‘information literacy competencies’ including procedural skills and conceptual understandings. These
outcomes are however not exclusive of each other since understandings of information literacy also address these varied goals and objectives seen in institutional missions.

**Role of ACRL Standards in shaping learning objectives**

Coordinators of information literacy explain the process of developing student learning outcomes:

So my partner and I were looking at the ACRL *Information Literacy Competency Standards* and we basically measured our program, what we knew of it, against those and identified areas for growth and we shared this with our colleagues. We made modifications to our teaching program (Lib03).

And more recently we went through *Information Literacy Standards* to be very specific about what we wanted our learning outcomes for library instruction to be (Lib02).

All the learning outcomes were taken from the ACRL *Standards*. We simplified and we selected the ones which seemed relevant particularly for lower division (Lib08).

Obviously we cannot meet every single objective listed in the ACRL *Standards*. So what I have done is that I have created objectives for the E11, 12 curriculums and I mapped them to the ACRL objectives so that we can see where we are strong, what we address and what we don’t address (Lib03).

**Diverse program objectives**

The impact of overarching missions of universities and libraries results in information literacy agendas articulating multiple learning outcomes ranging from all encompassing ideals to teaching of specific skills and competencies. Far reaching objectives include “supporting the teaching and research missions of the university and library”, “meeting learning needs of students”, “promoting students’ participation in inquiry”, emphasizing “transferable skills and knowledge” and “providing foundation for research and critical thinking”. In addition, specific teaching goals include “teaching use of library material, electronic resources, books and databases” “provide instruction in retrieval and use of information resources” “teaching ethical use of information and avoidance of plagiarism”.
Critical thinking

Explicit references to information literacy instruction developing critical thinking were identified in a number of information literacy programs, reflecting knowledge-oriented missions or a foundational belief of information literacy. Critical thinking is upheld as an essential outcome of information literacy instruction intended to enable the transfer of critical attitudes to novel and varied situations. The guiding conceptual framework for understanding information literacy, the *ACRL Information Literacy Standards for Higher Education*, declares “critical discernment and reasoning” as essential components of information literacy (2000, p.3). Explicit references to enabling critical thinking and critical inquiry were identified in program overviews of eight libraries (See Table 5.2). Less explicit references to enabling critical thinking coalesce around developing competencies in “critical evaluation” of information and information sources, analyzing information and solving problems. In explaining how the library enables critical thinking, the information literacy coordinator at Lib11 responds:

We have a focus on evaluation. When we looked at the *Information Literacy Standards* there are a lot of things that overlap for critical thinking and I think we shoot for a pretty nuanced and complex understanding of those issues.

Table 5.2 details critical thinking outcome statements identified in missions of information literacy programs.
Table 5.2

**Explicit references to critical thinking outcomes in library missions**

<table>
<thead>
<tr>
<th>Outcome</th>
<th>IL Programs</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critical Thinking</td>
<td>Lib01</td>
<td>IL instruction will encourage participation in inquiry</td>
</tr>
<tr>
<td></td>
<td>Lib03</td>
<td>IL program will provide foundation for research and critical thinking</td>
</tr>
<tr>
<td></td>
<td>Lib05</td>
<td>IL develops key competencies of analysis in solving problems and critical thinking</td>
</tr>
<tr>
<td></td>
<td>Lib06</td>
<td>Instruction resources provide key competencies in analysis in solving problems and critical thinking</td>
</tr>
<tr>
<td></td>
<td>Lib07</td>
<td>IL program will incorporate critical thinking;</td>
</tr>
<tr>
<td></td>
<td>Lib09</td>
<td>Develop user competencies in information seeking and critical inquiry</td>
</tr>
<tr>
<td></td>
<td>Lib10</td>
<td>Educate students to be critical thinkers and to fulfill their lifelong information and educational needs</td>
</tr>
<tr>
<td></td>
<td>Lib11</td>
<td>Teach students information seeking as a process that involves critical thinking</td>
</tr>
</tbody>
</table>

Other espoused approaches to enabling critical thinking are expressed by librarians:

I think that our approach to instruction, overall and our philosophy in instruction is related to developing critical thinking skills, it’s not completely tools-based, that is learning what the overall framework of how information is produced and disseminated so that students can see those tools and can interpret those tools and how they function (Lib08).

The way we want to encourage critical thinking is moving away from tool-based instruction and making sure we incorporate (of course we have to teach the tools or they would not find anything) reflections whether its in an assignment or in an instruction session. Reflection before they start their search, what kind of information they may need, who had produced it what might be the reasons people might have produced that information and how that might impact what it is, how it is presented where you might find it (Lib09).

**Knowledge creation**

In addition to enabling critical thinking competencies, programs expressed teaching goals of developing knowledge-based outcomes. Outcomes were directly linked
to espoused understandings of information literacy expressed through definitions of the concept. Outcomes focused on teaching students a range of competencies including to “understand the structure of information and knowledge”, analyzing and evaluating information and “synthesizing and integrating information so it can be used to complete an assignment”.

**Lifelong learning and holistic development of students**

Developing lifelong learning competencies is a primary goal of many libraries’ information literacy programs. Espoused discourses on information literacy declare lifelong learning as an expected outcome of information literacy instruction (Hancock, 1993; UNESCO, IFLA, NFL, 2005). Lifelong learning is also communicated as explicit outcomes in university and library missions of Lib02, Lib03, Lib04, Lib06, Lib08, Lib10, and Lib11 and articulated as information literacy program outcomes in five libraries. The meaning of lifelong learning is however contested with no clear definition being articulated. The result of this is that libraries express different understandings of what constitutes competencies in this seemingly important area of information literacy learning outcomes. In a few institutions, lifelong learning skills were equated with skills of social responsibility, work and life competencies as opposed to skills for academic success. Information literacy program goals for lifelong learning were sometimes detailed as in “empowering with lifelong learning skills to identify, find, evaluate, use and communicate information” while in other cases the goal was affirmed without reference to specific skills as in the information literacy program providing “foundation for lifelong learning, workplace and civic lives”; information literacy will “prepare students for lifelong learning, careers, civic life and workplace success”; “preparing students for
lifelong learning in the disciplines” ; and information literacy gives tools necessary for lifelong learning, success in professional, personal and personal lives.

**Ethical values**

Reflecting the stance adopted in university and library missions, information literacy programs aim at also developing outcomes of human and ethical values. However most of these outcomes coalesced around teaching students ethical use of information, and academic integrity issues including the avoidance of plagiarism. A few explicit outcomes were presented as developing “respect for each other, spiritual growth (Lib01), “develop socially responsible individuals” (Lib03), students will use sources ethically and avoid plagiarism (Lib03).

**Using information sources**

Teaching students skills in locating and engaging with information sources was a key priority of information literacy programs. Most program agendas included explicit outcome statements relating to competencies for utilizing information sources (See Table 5.3).

### Table 5.3

<table>
<thead>
<tr>
<th>Outcome</th>
<th>IL Program</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using information sources</td>
<td>Lib01</td>
<td>“Teach users to identify, locate, assess and use appropriately a full range of information resources to create new knowledge”</td>
</tr>
<tr>
<td></td>
<td>Lib02</td>
<td>“Help students learn to use databases… find and use best web resources… find books”</td>
</tr>
<tr>
<td></td>
<td>Lib03</td>
<td>“Offer formal teaching of use of library material, electronic resources, indexes and abstracts, books and periodicals</td>
</tr>
<tr>
<td></td>
<td>Lib04</td>
<td>Teach “strategies for finding quality information sources”</td>
</tr>
<tr>
<td></td>
<td>Lib05</td>
<td>&quot;provide instruction in retrieval and use of information resources to groups and individuals&quot;</td>
</tr>
<tr>
<td></td>
<td>Lib07</td>
<td>&quot;instruct students on …using the library catalog, using indexes, navigating electronic resources, finding specific types of information or publications and evaluating information sources&quot;</td>
</tr>
</tbody>
</table>
Comprehensive outcomes: Knowledge and skills

Specific individual outcomes of developing competencies in critical thinking, synthesis and creating new knowledge, lifelong learning, ethical values and the use of information sources represent singular outcomes of programs. Programs however articulated comprehensive goals which coalesced around addressing a range of competencies which could be summed up as, to “teach students strategies as well as mechanical skills for information seeking” (Lib11). This seeming attempt at addressing a balance of knowledge outcomes and procedural skills is observed in a number of programs as they articulate the teaching of “basics of finding articles and books, as well as more complex concepts such as how to avoid plagiarism and recognize the elements of a citation”. Program objectives include:

- Teach users to identify, locate, assess and use appropriately a full range of information resources to create new knowledge (Lib01).
- Program focuses on “transferable knowledge & skills” (Lib03).
- Teach students “understanding the structure of information and knowledge and creating and executing strategies for finding the needed information” (Lib04).
- Set of skills and overarching concepts, critical thinking processes, thinking standards (Lib05).
- Strengthen students’ abilities to locate and evaluate information and advance ethical uses of that information (Lib06).
Basic information gathering and synthesis and analysis in solving problems and critical thinking (Lib06).

Teaching information sources and search strategies (Lib08).

Develop user competencies in information seeking, research, and critical inquiry (Lib09).

Provide instruction to teach concepts and skills (Lib10).

Teach students to define their information needs, identify and select appropriate sources of information and to evaluate these sources and teach students information seeking as a process that involves critical thinking and decision making (Lib11).

**Library and information literacy competencies**

Specific references to developing library and “information literacy competencies” were articulated by a few instruction programs as in:

- Providing high-quality instructional materials and services that foster diverse learners’ information literacy competencies; these competencies, which include the ability to articulate an information need, and to locate, evaluate, and use information effectively and ethically, provide a foundation for lifelong learning and for success in the classroom, the workplace, and civic life (Lib02).

- Build skills-set to be competent and effective library users; teach basic library resources and college level research tools and strategies (Lib11).

- Teach key competencies of information literacy: information gathering; synthesis and analysis in solving problems and critical thinking (Lib06).

**Instructional collaboration and curriculum integration**

Although not representing learning objectives, information literacy programs made numerous and explicit references to initiating and enabling collaboration and
partnerships with university constituents for successful integration of information literacy outcomes in disciplinary curricula.

5.1.3 Definitions or explanations of information literacy

*Meta-Claim: Information literacy is understood as intentional utilization of information*

Conceptions of information literacy are also embedded in the definitions and explanations articulated by academic libraries. Publicly expressed definitions of information literacy indicate close connections with missions of academic libraries. Comparative analysis of concepts and themes identified in definitions suggest that information literacy is predominantly understood by academic libraries as competencies on a continuum from accessing information to the effective use of information for specific purposes including the creation of new knowledge. This understanding and focus on the use of information is also reflective of the influence of the much quoted definition of information literacy by the *Information Literacy Competency Standards for Higher Education* (ALA, 2000). More than 50% of libraries indicate some level of association with this definition (See Table 5.4). This confirms that understandings of information literacy are shaped by the defining “gold standard for academic libraries who teach information literacy”, the ACRL *Standards* (MacDonald, Izenstark, Gallagher, Kinnie, & Larsen, 2006, p.472).
While there is this obvious association with the ACRL understanding of information literacy, seven libraries crafted unique definitions of information literacy reflecting a possible distinctive approach to their teaching activities and as possible means of branding their programs. Although each definition is unique in language and confirms the multiplicity of definitions of information literacy discussed earlier in this research, all coalesce around the intentional utilization of information for specific purposes. With concepts such as “to construct meaning”, “solve problems” “communicate conclusions persuasively”, “to be effective information creators and consumers of information”, these purposes also reflect knowledge creation outcomes which are embedded in the missions of libraries and universities associated with these information literacy programs.

The focus on using information in the definition articulated by Lib04 is explained by the librarian:

### Table 5.4

*Information Literacy Competency Standards linked to definitions of information literacy and learning outcomes*

<table>
<thead>
<tr>
<th>Information Literacy Definitions</th>
<th>Teaching/Learning Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lib02</td>
<td>Lib02</td>
</tr>
<tr>
<td>Lib03</td>
<td>Lib03</td>
</tr>
<tr>
<td>Lib05</td>
<td>Lib06</td>
</tr>
<tr>
<td>Lib06</td>
<td>Lib07</td>
</tr>
<tr>
<td>Lib07</td>
<td>Lib08</td>
</tr>
<tr>
<td>Lib09</td>
<td></td>
</tr>
<tr>
<td>Lib10</td>
<td></td>
</tr>
<tr>
<td>Lib11</td>
<td></td>
</tr>
</tbody>
</table>
I think the using is really different for us and very intentional. Most information literacy programs deal with a very small spectrum of information literacy which is basically the ability to find information… some programs will have the ability to evaluate as well but we are really trying to move more into using, manipulating it to create something new (Lib04).

The process of developing understandings and definitions of information literacy is described by coordinators of information literacy:

We actually crafted this definition looking at the ACRL Standards and looking at the mission of …University. We found common grounds there and also with the Bruce’s article and with the wisdom conception…. We did not have a lot of ideas for the wisdom one as that seems to be dealing with experience. But we targeted strategies, how we would teach based on these levels of information literacy and based on the mission of … (Lib03).

…that definition in our mission statement…has been developed side by side with the new core curriculum for undergraduates and one of the guiding principles of this curriculum is encouraging critical inquiry and critical thinking when you start school. And we have always thought of information literacy as basically thinking critically about information whether it’s an information need or before you even get started searching and evaluating what you find. So that’s why our definition has emerged to look the way that it does (Lib09).

[Ours represent a]…different way of framing the definition of information literacy. I like the detail. I agree with every one of them as philosophical statements… When the Standards came out I thought they incorporated what we were doing…. the ACRL Standards in many ways capture much of what we have, not completely but it certainly demonstrated to me that we were on the right track (Lib06).

Table 5.5 details information literacy definitions as articulated by eleven academic libraries reflecting commonalities and differences in understandings which may impact practice.
### Definitions of Information Literacy

<table>
<thead>
<tr>
<th>Library</th>
<th>Information Literacy Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lib01</td>
<td>Information literacy is a person’s ability to respond to an intellectual challenge or information need by adapting his or her skills to locate information efficiently, analyze it critically, and use it responsibly in order to construct meaning.</td>
</tr>
<tr>
<td>Lib02</td>
<td>Information literacy—the ability to determine when, why and what information is needed and then to find, evaluate and use information to solve problems, make decisions and communicate with others— is more than just knowing how to use the library. It is a critical 21st century skills-set that provides a foundation for both academic success and life long learning.</td>
</tr>
<tr>
<td>Lib03</td>
<td>IL defined as ability to recognize when information is needed; to effectively locate and organize information while considering the myriad of information sources; to logically and critically evaluate and assimilate information while seeking objective truth and personal meaning; to synthesize and use information to communicate conclusions persuasively; and to apply these skills ethically and legally throughout life with a sense of social responsibility.</td>
</tr>
<tr>
<td>Lib04</td>
<td>IL refers to a set of competencies students need to be effective information consumers and creators in the information society. IL competencies include: understanding the structure of information and knowledge; creating and executing strategies for finding the needed information; analyzing and evaluating the information; synthesizing and integrating information.</td>
</tr>
<tr>
<td>Lib05</td>
<td>Information literacy is the set of skills needed to find, retrieve and use information. Information Literacy content includes overarching concepts, critical thinking processes, thinking standards.</td>
</tr>
</tbody>
</table>
| Lib06   | Information literacy is composed of four interconnected components:  
  - Knowledge of information sources, the organization of information, and the nature of knowing — the attributes of scholarly knowledge.  
  - Skills in finding, evaluating, using, and effectively communicating information.  
  - Generalization of knowledge and skills to various applied settings with a positive disposition toward the use of new and extant information sources and information technologies.  
  - Social context for the use of information, equal access to information, and the dissemination of knowledge. |
| Lib07   | Information literate students can find, evaluate and use information with confidence. |
| Lib08   | Competence in locating, retrieving, organizing, critically evaluating, analyzing, synthesizing and communicating information in a cohesive, logical and ethical manner. |
| Lib09   | Information literacy is the ability to think critically about information. It’s a fundamental part of critical inquiry in the Information Age. |
| Lib10   | Information literacy is the ability to identify, retrieve, evaluate and use information that is appropriate to a need. |
| Lib11   | Information literate persons: determine information needed; access efficiently; evaluate information and its sources; incorporate selected info into knowledge base; use information for a specific purpose; understand economic and legal issues and access and use information ethically. |

Expanded understandings of information literacy by these libraries were derived from further analysis of these definitions. Firstly, implicit in a number of definitions is that information literacy involves a range of skills and attitudes and is in response to an
information or cognitive need. Information literacy is understood as both mastery of procedural skills and conceptual knowledge and understanding of when and how to use those skills. This is summed up and clearly explicated in the all encompassing definition of Lib06 which speaks to information literacy including knowledge, skills, application of knowledge and use with a social context. So information literacy is explained as “critical 21st century skills set” (Lib02), competencies for “creating and executing strategies for finding needed information” (Lib04), and “the set of skills needed to find retrieve and use information” (Lib05). At the same time these libraries present the ‘other side’ and information literacy is also explained as knowledge: “ability to determine when, why and what”, “understanding the structure of information and knowledge” and “critical thinking processes”.

Libraries were unambiguous in their stance on the meaning of information literacy as “more than how to use the library” and that “information literacy goes beyond instruction of information finding tools” and so attempted to create a balance in the projected competencies to reflect both procedural skills and conceptual understandings.

Definitions also reflect institutional culture so that while Lib03 references the definition of the Information Literacy Competency Standards, the library’s definition includes concepts of “objective truth and personal meaning” which mirror the university’s mission of fostering “ethical and religious values”. Information literacy is therefore understood as a process for enabling ethical values.

5.1.4 Assumptions and claims regarding information literacy

Assumptions and claims present another lens through which to understand the espoused theories of information literacy in academic libraries.
The rhetoric of information literacy as seen in missions of academic libraries suggests that libraries believe that:

1) Information literacy is central to students’ academic success.

2) Engagement with information sources will lead to creation of new knowledge.

3) Enactment of information literacy is a collaborative endeavor.

4) Information literacy instruction will enable transfer of competencies and skills to other academic and life situations.

There is widespread agreement among libraries that information literacy instruction is more effective when learning outcomes are integrated with academic disciplinary content. All libraries concur that instructional collaboration is at the heart of information literacy.

“...students are more likely to learn concepts and skills in the context of an academic course when they have an information problem to solve” (Lib9).

5.1.5 Summary: Conceptions of information literacy: Espoused theories

Varied understandings of information literacy in academic libraries emerged from the data. Espoused theories of information literacy are reflected in the knowledge-based outcomes and processes seen in mission documents, were identified in definitions of information literacy and in learning outcomes and goals articulated by information literacy programs.

Information literacy is conceptualized and understood as:

- Knowledge outcomes and processes including critical thinking, knowledge creation, scholarship and intellectual habits.
• Enabling academic success, social responsibility and lifelong learning.

• Effective and appropriate utilization of information for specific purposes e.g.
  o constructing meaning, solving problems, making decisions, completing an assignment.

• Knowledge and skills in accessing and using information sources.

• Deep engagement with information sources towards information delivery

• Enabling ethical and human values.

• Most effective in collaborative discipline-based environments.

• Most effective when outcomes are integrated in academic curricula.

5. 2 Practice of Information literacy as demonstrated in online tutorials:

Theories-in-Use

In this study the practice of information literacy is investigated through instructional tutorials accessed via web pages of academic libraries. Theories-in-use therefore relate to implicit and explicit indicators of information literacy expressed in statements, concepts, and outcomes in these tutorials. Argyris and Schön (1974) explain that theories-in-use of practice must be inferred from an examination of behavior and representations of action. The online tutorial represents a single mode of instruction employed in information literacy instruction. The limitation associated with employing this mode to represent practice of information literacy in academic libraries is understood since information literacy is practiced via multiple methods. However the online tutorial has become a most pervasive method used in instruction and is therefore an ideal representation of action of information literacy. This widespread use suggests that these tutorials are developed to address a span of competencies towards enabling information
literacy agendas and instruction missions of libraries. In addition the essential role of the
tutorial in instruction initiatives is confirmed by librarians.

**Sub-areas addressed**

In investigating the practice of information literacy in academic libraries via
online tutorials, the following sub-areas were explored in relation to online tutorials:

1. Explicit and implicit learning outcomes and goals of online tutorials.
2. Indicators of the continuum of information literacy from access to use of
   information; critical thinking; information use and knowledge
   construction/change
3. Teaching/learning strategies/approaches employed to facilitate deep
   learning
4. Theoretical frameworks reflected in IL tutorials
5. Strategies and specific tasks for assessing learning

**Meta-claims developed**

Rigorous unpacking of concepts and verbatim outcomes statements seen in
approximately 150 online tutorials and learning objects of 11 academic libraries
suggests that goals and learning outcomes of information literacy programs are partly
realized through online tutorials. Meta-claims which emerged from the indepth
analysis confirm the practice of information literacy via these tutorials:

- Online tutorials address multiple information literacy competencies with a
  focus on developing strategies for accessing and using information
  sources.
- A few tutorials give attention to critical thinking and other knowledge
  outcomes.
• Critical thinking is addressed primarily via evaluation of sources and in plagiarism tutorials.

• Ethical dimensions in missions of universities and libraries are addressed via plagiarism and citation tutorials.

• Some tutorials offer avenues for curriculum integration of information literacy learning outcomes.

5.2.1 Explicit and implicit learning outcomes and goals of online tutorials

Types of and purposes of tutorials: Towards enabling goals and learning outcomes

Information literacy agendas are realized through multiple modes of practice including face-to-face instruction and online resources. Of the sample of libraries investigated, nine offered face-to-face sessions. Online teaching resources incorporate a rich selection of tutorials developed to address varied competencies and to enable a range of learning outcomes of information literacy. This selection includes but is not limited to 1) modular research tutorials, 2) subject-specific discipline-based tutorials, 3) topic and resource-specific tutorials, 4) point-of-need tutorials and how-to tutorials which address strategies for locating and using multiple information sources, 5) tutorials and guides which focus on issues of academic integrity, plagiarism and ethical use of information, 6) tutorials which detail strategies for evaluating information and information sources and 7) tutorials encouraging the use of libraries and library services. Objectives and goals for tutorials are not always explicitly expressed by libraries yet it appears that these tools are designed for multiple purposes and perform varying roles in information literacy programs including point-of-need instruction, stand-alone instruction tools, supplementary resources to face-to-face instruction, and tools for integrating information
literacy outcomes in academic courses and disciplines. Table 5.6 reports the spread of types of tutorials identified in the sample of academic libraries.

Table 5.6

Types of tutorials by libraries

<table>
<thead>
<tr>
<th>TUTORIAL/MODULE TYPES</th>
<th>LIBRARIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citation</td>
<td>Lib01, Lib04, Lib05, Lib07, Lib08, Lib09, Lib10, Lib11</td>
</tr>
<tr>
<td>Disciplinary/Subject</td>
<td>Lib01, Lib05, Lib06, Lib07, Lib10</td>
</tr>
<tr>
<td>Evaluating Sources</td>
<td>Lib01, Lib02, Lib03, Lib04, Lib06, Lib07 Lib08; Lib09, Lib10, Lib11</td>
</tr>
<tr>
<td>Finding/Using Sources</td>
<td>Lib01, Lib02, Lib03 Lib04, Lib05, Lib06, Lib08, Lib09, Lib10</td>
</tr>
<tr>
<td>Plagiarism/Academic Integrity</td>
<td>Lib01, Lib02, Lib03, Lib05, Lib06, Lib07 (2), Lib09 (2), Lib10, Lib11*</td>
</tr>
<tr>
<td>Research/Information Literacy</td>
<td>Lib01(2), Lib02 (2), Lib03 (2), Lib04 (2), Lib05, Lib06, Lib07(2), Lib08, Lib09, Lib10, Lib11</td>
</tr>
<tr>
<td>Specialty/Topic</td>
<td>Lib01, Lib04, Lib06, Lib08</td>
</tr>
<tr>
<td>Using Library/Services</td>
<td>Lib03, Lib07, Lib08, Lib11</td>
</tr>
</tbody>
</table>

Note. * Links to plagiarism tutorials on web sites of other academic institutions.

The varied roles played by this span of online tutorials in information literacy programs are confirmed and explicated by coordinators of information literacy:

**Integral/Foundational**

They are important for the foundational skills. They are important for anyone trying to teach at the upper level as they can serve as pre-requisites. They are like the bread and butter. Without them we have a much bigger task ahead of us. They ease the burden on a lot of the librarians and faculty. Faculty are burdened by content, they don’t have a lot of time to release their class into the library. It gives the faculty choices and freedom. Lots of freedom! (Lib04).

**Supporting**

I guess the easiest way to think about it is that we have information literacy learning outcomes established for our freshman program and the way we achieve those learning outcomes is developed on a course by course basis in conjunction with a faculty member, and if they choose an instruction session, or if they choose a tutorial that is what we do. It’s just a tool in our toolkit. Every learning object that we have ever created is in that tool kit so it includes tutorials and people can self serve and never talk to us at all. So I guess for us it’s a lot less about the format and more about the content (Lib09).
Basically the tutorials are really meant as support materials. The real learning outcomes are going to come from the assignments and the way the tutorials are used and administered by faculty. (Lib8).

**Multipurpose**

So one role that they play is that someone coming to the website for information could quickly find out how to get one of their questions answered. The ideas for them come from questions that we get frequently and these are things we think people should know. They serve a second probably more important programmatic purpose as we have course pages for individual classes and we embed the short research videos into the content that we develop for classes (Lib11).

Part of the vision is the increasing emphasis in the university on distance education. We see a research tutorial as a way to reach students who are not ever going to come to campus. We have a lot of those, we have students who are taking classes in various parts of the state and that is needed. Also we wanted to do a lot of these mini tutorials that are very quick on one very specific thing (Lib05).

students were heavily relying on Google (it may have been seven years ago) and we wanted to elevate the understanding of subscription databases and open some windows into understanding the differences between what you find on the free web vs. what you find in library research databases (Lib01).

These multiple roles and purposes are realized through the range of types of tutorials from the comprehensive research tutorial to the short tutorial addressing a specialized resource or competency.

**Multiple goals and learning outcomes: Comprehensive research/information literacy tutorials**

The comprehensive research tutorial is considered the defining instructional tool and hallmark of information literacy programs. Initial investigation of online instruction programs of academic libraries revealed that all libraries offered these modular research tutorials designed to realize a multiplicity of learning outcomes including research competencies towards developing assignments, searching skills for accessing information sources, skills in evaluating and citing sources as well as effective use of library and
library resources. Many of these tutorials are representative of the early online face of information literacy in academic libraries and became flagships of instruction in these libraries. Most were designed with individual discrete modules or chapters, each addressing a separate aspect of the information gathering and use process. The following are modules in a comprehensive information literacy research tutorial:

- Defining your topic
- Identifying resources
- Using periodicals and journals
- Searching online databases
- Locating resources
- Evaluating your search
- Citing resources
- Using information ethically and legally

The comprehensive research tutorial emerged during an era when a single tutorial met the needs of information literacy programs and were therefore designed for several functions. They performed as stand-alone instruction tools for students, as resources used by librarians in face-to-face sessions and as material to be used by faculty within academic courses and programs. Speaking to the importance of the research tutorial in the current instruction program at Lib06, the coordinator of instruction describes the tutorial as “a kind of basic map of a lot of different information literacy components”.

Although the face of and some roles associated with the comprehensive research tutorial have changed significantly over the duration of this research study, it remains an important enabler of major goals of information literacy agendas in academic libraries.
This is evident from goals articulated in both traditional and ‘new’ research tutorials. The following goal statements from a selection of research tutorials confirm the range of expected learning outcomes from these tools:

A modular tutorial with information on when to use the internet and when to use the Libraries' research databases. It also includes instruction on searching the web efficiently, evaluating websites, and citing information from the internet and research databases (Lib01).

Improve your research and information literacy skills with [Research Tutorial], a series of five modules designed to equip you with the research skills you'll need for college success (Lib02).

Eight-module tutorial will familiarize with strategies for approaching research as well as online resources needed (Lib04).

[The tutorial] provides research skills to students who do not have opportunity to attend instruction; will introduce new users to the basics of research. After completing the tutorial users will be able to:

- Prepare a research project
- Choose the right information tool or tools for the project
- Compose and revise effective search strategies
- Search for material in our collections by author, title and keyword
- Search for magazine, journal and newspaper articles
- Search for information on the internet using a search engine and an internet directory
- Integrate your research into your writing skillfully and responsible
- Cite sources in APA or MLA using simple examples (Lib05).

The Libraries have developed these modules to help you learn concepts and skills for using the Libraries’ databases, collections and resources.”

To faculty: This will “assist in instructing students about the information gathering research process (Lib06).

Take this interactive tutorial to learn about various aspects of the research process. The five modules are 1) Selecting a Topic, 2) Finding Sources, 3) Selecting Keywords, 4) Identifying Citations, and 5) Evaluating Sources (Lib07).

Overview of what the web is, what you can find on the web and what Google searches; free web vs. deep web; differences between published and unpublished sources; information cycle; published sources more easily available at the library (Lib08).
Help you develop skills to find your way through a maze of information and succeed at…University (Lib10).

The multiple functions performed by these tutorials and the learning outcomes they enable are confirmed by librarians:

**Research skills**

Well this tutorial focuses on the research process. There is [a]section on choosing topics that’s a big issue with students and it goes in depth and encourages the use of the research log; the objective is that they reflect on their research process on their searching and that they also understand how to go about searching for information through databases and the difference between scholarly and popular material, recognize citations and also evaluating information (Lib07).

**Basic foundational skills**

They [two research tutorials] meet what we have identified as foundational skills so we have an idea of what we expect people to have in the first year, 2nd 3rd 4th. It’s a mixture and we do call these workshops, foundational workshops so that all students have these as basic skills. We want the subject liaisons to build on these skills and not have to cover the same territory again. And, then of course coupled with that they are meeting the needs of the Writing Program (Lib04).

**Lifelong learning**

The tutorial will provide skills for good research, skills for successfully complete research assignments and skills needed beyond college like when buying a car, looking for a job, planning a trip or voting (Lib10).

**Changing face and roles of the comprehensive research tutorial**

Roles associated with these modular information literacy/research tutorials in academic libraries have recently shifted. During the period of data collection for this research study, significant changes were made to the face of information literacy practice via online tutorials. Libraries retired and revamped flagship comprehensive research tutorials giving way to alternate, shorter research tutorials and in most cases to a proliferation of short interactive, how-to tutorials and learning objects. Several reasons
offered for these changes by librarians include dated content and style of the tutorials, changing programmatic goals, as well as shifting institutional and student needs:

No one is really using it and I had difficulty integrating it partly because it was this in case you have to know just in case. And that is the kiss of death for tutorials. It was more intended to help high school students to understand what was going to be required of them (Lib01).

Yes, first of all I think the [tutorial] is kind out of date now. It is pretty text heavy and so we are doing a couple different things now (Lib02)

Well to take advantage of the new technology. It’s pretty old at this point. That kind of thing has been around for ten years. At the point it was done, imbedding video in it was not possible. So the expectations from students are different. And also to improve student learning and student retention and to look a little more holistically at information literacy than we would have looked at it five years ago. And I think the tutorial has been around five years.
We will keep some elements, some principles but more in line with what we are doing now. We have been very fortunate that the university supports information literacy (Lib05).

…we are phasing it out as I mentioned before and so the other materials you saw will be replacing it at the lower division along with support teams…. [The tutorial] is essentially a text book that students go through and take quizzes. That’s not the way most people learn. People learn by practical application and so what we are striving towards is a model that creates an environment where students are engaged in practical application, not simply reading an online textbook which and then they take quizzes and its second guess whether its applied in their experience or not (Lib08).

[The tutorial] was created between 1997 and 1999 when the web was a completely different thing. And so people replicated how you read on paper on the web. So what we ended up with was a website was that was extremely text heavy and way too text heavy for the way that people learn on the web now. In my opinion anyway and I get those comments from people who send me email. And this new generation, the millennials who are in college now, they are visual learners. And it was like each module was 30 minutes long.
Further we are moving away from the idea of one tutorial meeting the information literacy learning outcomes for the campus. Its not just course integrated enough (Lib09)

One of the main [reasons] was all of the research coming out about the nature of millennial student and the changing needs of our student population. There were a lot of technical issues as well that led to some more backend changes that were not as obvious to the user. But the actual user interface, the main reason why we changed those things was to address multiple learning styles. We wanted to try and make them more easily understood by students who are more auditory, visual. We tried to include more interactive elements for kinetic learners… We wanted to try and make each segment more streamlined so that there were fewer concepts presented in a shorter period of time, rather than overwhelming them with two many concepts that they could not…
All the research indicated that students really focus on one or maybe two concepts at a time. And we wanted to streamline the tutorials to increase effectiveness rather than bombarding them with so much information even if it was useful information if they did not remember it at the end then it wasn’t actually useful (Lib10).

Streamlining of concepts, addressing millennial learning, the need for more point-of-need instruction, integrative tools, these are some reasons offered for developing short research tutorials and an abundance of shorter, resource and competency-specific learning objects. In many instances these short tutorials appear to be reconstructed individual modules of research tutorials as they highlighted similar competencies found in the comprehensive tutorials. However they achieved the purpose of being visible how-to tools. Most of these shorter tutorials aim at developing searching competencies for using multiple information sources.

*Enabling accessing and using of information sources: How-to and subject tutorials.*

Instruction in the location and use of information sources has always been an essential goal of online information literacy tutorials. Engaging students with information sources towards the use of information and for knowledge creation is a stated goal of information literacy programs. It appears however, with the move towards the development of short, point-of-need tutorials that this objective has become more significant. The data indicate that the short how-to and point-of-need tutorial which aims at developing competencies and strategies for locating and using specific types of resources has become an increasingly important tool in information literacy instruction. These tutorials are developed as additional tools or as replacements for modular research tutorials. It seems however that there is an inordinate focus on strategies for using sources with less attention to developing other competencies on the continuum of access to the
use of information. The findings indicate that compared to the number of tutorials developed for realizing other competencies, the number of tutorials which focus on developing competencies in using information sources is inordinately higher. Some libraries have developed in excess of 20 short tutorials dealing with finding multiple sources of information. This finding suggests a focus on the delivery of information via information sources. Figure 5.1 shows the proportion of ‘finding’ tutorials in relation to other types.

Examples of titles of these tutorials indicate some expected learning outcomes and reflect the focus on engaging with sources:

- Find It!
- How do I…?
  - Find books
  - Find theses
  - Find articles
- Finding Books, Finding Articles
- Searching for books; Searching for Articles
- Finding Primary sources in sociology; Finding Primary sources in history;
  - Searching Library catalogs
- Searching online databases; Searching the catalog
- Locating Information; Finding articles; Finding books; Evaluating sources;
  - Understanding citations
- How to find
  - Articles
Newspaper articles
- Opinions and opposing viewpoints
- Film reviews
- Books
- E-books

Figure 5.1: Distribution of types of online tutorials

In giving attention to these multiple sources, these tutorials perform other essential roles and enable additional learning outcomes. They enable students to acquire basic and advanced search strategies for using library tools including catalogs and research databases which are foundational competencies for the academic experience. In addition they assist in developing awareness of the “world of information” as students are exposed to the structure of information and knowledge and the range of new information sources that are available to them including course related, subject and discipline-based tutorials.
It may be that instruction in information sources and strategies for locating these are useful competencies for students within academic environments where there is seeming focus for students to include “relevant sources” rather than “relevant information” in research assignments.

The use of these short tutorials is explained by librarians:

We have created some new ones that are designed to be shorter, so that people can watch quickly and learn how to do kind of basic thing like how do I search the catalog (Lib03).

We do create tutorials like finding articles and find books but most of those tutorials we created for just on-demand like I am in the library by self and need to find an article, this will help me to do it. They are like reference tutorials. The way they are integrated into our instruction program is if a faculty member chooses to use one but they are actually point of need tutorials and less information literacy tutorials in the way we think about them (Lib09).

So one role that they play is that someone coming to the website for information could quickly find out how to get one of their questions answered. The ideas for them come from questions that we get frequently and these are things we think people should know. They serve a second probably more important programmatic purpose as we have course pages for individual classes and we embed the Research videos into the content that we develop for classes (Lib11).

**Ethical use of information: Plagiarism and Academic Integrity tutorials**

An increasing number of tutorials aimed at enabling and encouraging academic integrity and ethical use of information is developed by academic libraries. It seems that in their attempts to realize value-focused institutional missions and to satisfy the demands of information literacy professional standards which encourage the teaching of ethical use of information, academic libraries have experienced an abundance of full plagiarism tutorials and plagiarism modules in research tutorials. This intense attention to plagiarism matters may suggest that teaching students to effectively cite information sources which has been a foundational goal of information literacy tutorials, is no longer
adequate to encourage ethical use of information. Eight libraries developed plagiarism and/or academic integrity tutorials with two of these libraries displaying more than one tutorial along with additional guides and notes for students on plagiarism and copyright issues. Further, where there was not a specific plagiarism tutorial or plagiarism module, libraries addressed plagiarism issues in citation tutorials (Lib04, Lib08, and Lib11) and/or directed students to several online plagiarism resources in other academic libraries (Lib11). Libraries also provide tutorials/guides for faculty to assist in addressing plagiarism matters (Lib06, Lib11). Goals for plagiarism tutorials include:

- Alerting students to institutional and personal consequences of plagiarism whether intentional or unintentional (Lib03).
- Educating students about ethical and fair use of their own and others’ intellectual property (Lib01).
- Teaching students to define plagiarism; determine sources to be cited; paraphrase words of others; effectively incorporate quotations in your writing; describe other methods that can be used to avoid plagiarism (Lib09).

Specific learning outcomes in these tutorials focused on developing skills in writing, paraphrasing, incorporating quotations, and citing sources as methods for avoiding plagiarism. Citation tutorials explained elements of citations, using citations to find resources, as well as strategies for using citation styles.

Strategies and approaches employed for enabling goals and outcomes in these tutorials vary significantly including the use of a movie-type tutorial which addressed outcomes in a funny yet serious manner (Lib07); encouraging students to develop their
own ideas as a way of avoiding plagiarism yet using strong language such as “academic death” (Lib10); acknowledging unintentional plagiarism and encouraging students to spend time in the writing process to avoid plagiarism in a non threatening manner (Lib02, Lib05, Lib06, Lib07). Tutorials detail misconceptions about plagiarism and offer procedures for avoiding these. Of particular note is a video discussing issues of plagiarism in the context of challenges faced by a student who attempts to complete an assignment (Lib05). Questions posed after each episode reinforce concepts addressed throughout. Plagiarism and copyright issues are also explored in another well designed tutorial in which students receive visits from their “future selves” who caution them about the consequences of downloading media, using remix music and writing a paper without attention to copyright and plagiarism issues. Discussions between the students and their “future selves” present guidelines (Lib06) and students are encouraged to reflect on actions via reflective questions.

There were however instances in which it seemed that tutorials were developed on an assumption of mistrust with the use of threatening language and detailed references to negative consequences of plagiarism especially in academia (Lib01, Lib03, Lib10). Terms such as ‘arrested’ ‘expelled’ and ‘suspended’ “sued”, “lost jobs”, “academic death” were sometimes utilized without the use of scaffolding techniques or strategies for enabling students to develop their own ideas and create new knowledge. An explicit theme of ‘Don’t’ emerged from these tutorials. The negative consequences of plagiarism were also detailed in a plagiarism tutorial of Lib09, yet with attempts at scaffolding students and the tutorial included learning outcomes of students being able to:

- Define plagiarism
- Determine what sources need to be cited in your writing
- Paraphrase the words of others
- Effectively incorporate quotations in your own writing
- Describe other methods that can be used to avoid plagiarism

This approach to scaffolding and guiding students without threats is explained in detail by the librarian:

...Students [came to us] who knew what they were not supposed to do and were scared and all they were getting were threatening messages and they did not necessarily know what it was. So they did not want to do it but they did not know not to. So many questions that we would get at the reference desk and in our chat reference sessions related to is it ok for me to do this, is it ok for me to do that. And you should not feel paranoia and if you are scared on how you are going to use information, it’s really limiting in your ability to synthesize into your knowledge base.

Other librarians discuss institutional contexts behind the development of plagiarism tutorials:

Well it [plagiarism tutorial] came from a campus initiative years ago. The campus was emphasizing attention to plagiarism in class and they requested the faculty to talk about and say what it is. We have had for years the citing your sources module in the [Research Tutorial] and so we have had information about citing sources and that has always been our emphasis trying to teach students how to do it correctly as opposed to worrying about plagiarism. We did plagiarism and you tutorial and quiz after this statement on plagiarism from the University came out. A lot of times students were coming to our website and what they were thinking of was the word plagiarism rather than citing sources (Lib06).

We wanted to have something available that if we could not give a presentation… there is a lot of demand from faculty for a quick and easy way to explain plagiarism to their students, so that is something we have taken the initiative in developing something that anyone on campus can use. It helps students understand what plagiarism is how to avoid it and so on and so forth. So that’s another way we are trying to get our foot in the door to integrate library skills into the curriculum is to make ourselves a go to organization for information on plagiarism and help faculty and various programs on campus in educating their students on plagiarism (Lib05).

A few librarians cite evidence for the emphasis on teaching the avoidance of plagiarism:
Yes there really is [a focus] because there have been a number of incidences of plagiarism at the university. Students have varying views about plagiarism, sometimes this is cultural we are finding, that some cultures say this can’t be said any better so we are actually complimenting the author by using it. And that’s the way it’s viewed (Lib07)

One of my colleagues recently finished a study that was really surprising (our engineering librarian) and his study was of Masters theses from Engineering Programs around the country and he found that about 50% of them had substantial instances of plagiarism in their literature reviews and these were accepted Masters Theses (Lib10).

Varied stances adopted in tutorials to enable outcomes are explained:

… The plagiarism and you tutorial goes into detail about how to cite and so we focus on how to tell if you are doing correctly and that’s one of the reasons why we did the quiz. After giving some examples of correct use and incorrect use and an explanation for why one is correct and why another is not correct and what was wrong with it. Then we provide a little quiz with some examples and they have a chance to decide is that plagiarism or is that appropriate use. Trying to give some practice in identifying where it went wrong, here is where it went right, here is good way to do it. I think a lot of plagiarism is not done maliciously but out of ignorance. So we try to give additional opportunities to try to make the distinctions (Lib06).

On the campus we take plagiarism seriously but when we provide material we try to emphasize here are ways you can avoid plagiarism, not so much the consequences. If you understand what plagiarism is you can avoid doing it. We try to make that more of our approach rather than these horrible things will happen to you (Lib05).

We don’t want to make light of it like as long as you don’t get caught or you will probably be given another chance. We want them to understand that at least as far as the university is concerned if you are caught plagiarizing you will be expelled and it will be on your permanent record. We want them to understand that it’s a serious offense that will follow them for the rest of their lives (Lib10)

*Tutorials as enabling program missions:*

It’s really addressing the value of the information and even though there is a lot of free information out there, it’s not for the taking all the time without giving credit. So its understanding that process, that somebody spent a lot of time doing that, whether it’s a program or a research paper (Lib07)

[We want to develop] an appreciation for intellectual property. They are so used to everybody’s ideas out there on Facebook and Youtube and it’s all free and its all easily accessible so that they are not used to thinking that somebody put his time and effort into creating it and its his job and if we don’t give him money or credit for his job we are
taking something away from him. I think that is something that is a problem and is something that can really affect students beyond college (Lib10).

A potentially positive outcome of plagiarism tutorials is that in a number of instances (Lib02, Lib03, Lib05, Lib07, Lib10) instances students are encouraged to develop their own ideas when creating research projects. Advice such as “write a short draft of your paper without referring to your notes”, “think through your own ideas” and “use other people’s ideas only support your own”, and ways of integrating information into research projects, scaffold students in synthesizing information towards creating new knowledge.

Enabling critical thinking outcomes: Tutorials on evaluating information and information sources

Teaching students the evaluation of information and information sources is a key goal of information literacy agendas as this purportedly is one route towards enabling critical thinking competencies which are foundational to understandings of information literacy. Evaluating information and sources is usually addressed in modular research tutorials as part of the process approach which details strategies for locating, evaluating and using information ethically. There is a current move however towards the development of individual tutorials on evaluation (Lib03, Lib08 and Lib09). Regardless of the approach adopted however, the importance of this outcome is underscored as all libraries developed strategies for evaluating information via tutorials. Learning outcomes and goals of tutorials, while not explicitly stated in all cases, coalesced around the skills and competencies in critical evaluation of information and information sources including:

- “Sharpen critical evaluation skills”
- “Learn skills that help you evaluate various types of information.”
• “Understand what is a ‘peer reviewed’, ‘refereed’ or ‘scholarly’ source”.

• “Evaluate sources you find not only to determine their quality but also their relevance to your specific research project”

The interactive and analytic approach used is discussed by a librarian who assisted in designing and developing an evaluation tutorial:

We already had a tutorial on critically evaluating information; it might have been called the same thing. That one was simply the checklist of authority, bias etc and then we all read the article called ‘Chucking the checklist’ and so this one even though it still has the checklist in it, it is an attempt to move a little beyond that, without giving people examples…Basically we wanted them to if they had been looking at websites or articles or any kind of information, even a video, if they had been looking at it at face value, we wanted them to question this more. So look behind this and think for a moment, who produced this and what might their motive have been. Because we wanted them to see that everything has some bias, even objective things have bias. And yes you do want to teach objective things but we also want them to value subjective material so long as that subjectivity was acknowledged, recognize that too has a function in the greater discussion (Lib03).

Varied techniques are utilized in online tutorials to develop competences in the critical evaluation of information. Indepth analysis of these tutorials indicates that in addition to the traditional, “shopping list” of criteria, more libraries are employing more nuanced approaches to enabling evaluation in their tutorials. These strategies appear to encourage a more critical approach to using information. This is aptly represented in the introduction to a module on evaluating information:

Evaluation is a process in which you systematically analyze something to determine its quality, significance, or relevance. Evaluation can be about determining whether something is good or bad, useful or useless, accurate or inaccurate. But often times, life isn’t that black and white and we’re faced not with either/or but with gradations of usefulness and quality that force us to figure out the degree to which something is useful. In other cases, usefulness is context dependent. In other words, the thing in question could be useful in some circumstances but not in others (Lib02).

In keeping with this nuanced manner, tutorials employ questioning techniques (Lib01, Lib02, Lib03, Lib05, Lib06, Lib07, Lib08) in which students are encouraged to
“question the source”, as well as to “evaluate the search process” and judge “reliability of information”. In cases where criteria for evaluating are presented, they aim at providing guidelines rather than being definitive, allowing students to develop and apply other criteria including their own criteria for analyzing and evaluating information. Dialogue and a conversational style encourage students to critically assess the information found as in these excerpts from a module on evaluating information:

“…Although these are important clues about the value of a given book, you will still need to evaluate the relevance to your particular research project. What theories and basic assumptions does the text rely on? Are they similar to/different from your own? Do they support or undermine your own point of view, argument, or theory? ... Keep in mind that research is often recursive, which means it’s not a onetime thing but rather an ongoing process. Once you begin the processes of evaluating and using the information that you find in your research project, you might find that you need to go back and do more research to find additional information to back up your points or to address strong counter positions (Lib02).

A few tutorials, however maintain the linear prescriptive set of evaluation criteria.

Libraries also attempt to teach evaluation in relation to both ‘information’ and ‘sources’ allowing students to move beyond the use of information sources to using information relevant to research projects (Lib02, Lib03, Lib07, and Lib08). Connecting evaluation strategies with research assignments and real life situations is done in a few tutorials. Separate and different approaches to evaluating information (content) and sources are addressed in detail in an “Evaluating Information” module within a research tutorial (Lib02). Utilizing mnemonic instruction which is sometimes employed to link new information with prior knowledge, the module introduces the CRAAP (currency, relevance, authority, accuracy, purpose) model of evaluation for books while presenting questions for interrogating information.

The data suggest however that in many evaluation tutorials, “information” is synonymous with “information sources” and so strategies suggested relate primarily to
evaluating sources. Two separate sections in a tutorial, “Evaluating your Search” and
“Evaluating Information” address the evaluation of sources. So there is less attention
given to deep engagement with information found and the use of this information. This
focus on information sources results in most tutorials addressing differences between
scholarly and non scholarly resources and standards for determining these types of
resources.

Librarians explain other approaches used to enable critical thinking in tutorials.

*Teaching topic definition via concept maps:*

One of the things that I thought we did fairly uniquely and I am not sure I have seen
others do certainly not at the time we created this was in the first module on defining
your topic. We used concept mapping to illustrate how you might take a topic, explore all
the many different facets that might be available on the topic and choose a piece of it that
would be the piece that you would focus on so I think that that visually helps students
understand how to take an idea that they have and explore it critically and then make
some decisions about what way they want to go. So I think that there are a number of
places where we have kind of developed some ideas that helped the student. We have not
said here is how you think critically but we have tried to integrate it throughout. (Lib06)

*Varied goals/learning outcomes: Specialty tutorials*

Libraries aim at realizing other goals and learning outcomes via online tutorials.

In addition to the scope of tutorials addressed in the chapter, libraries also develop
specialized tutorials to address

- Knowledge of subject/disciplinary resources
- Familiarity with library and library services
- Specialized topics e.g. information flow/cycle

The vision behind a tutorial (movie) developed to introducing students to the library is
explained:

We wanted to meet them where they are and we don’t want to assume everyone is in the
same place but we knew something about our population based on the statistics of who
comes. We knew based on students’ newspaper articles, we gathered anecdotes and got a
sense of what would appeal to these students. So we crafted that movie …Students were
given clickers but it was a novel thing for them to be able to vote on what’s happening in
a movie.

Most of the professors liked it and reacted well to it but others reacted very negatively
and said we were trivializing the library. But what we wanted to do was to make sure that
the students felt comfortable and they didn’t see it only as a serious place. Obviously we
wanted them to have quiet, serious space but we wanted it to be accessible. We’ve noticed in the library, it really seems to work. The library even got written up in the student paper as the place to be on campus. And our reference desk was plenty busy. It just felt great. In that case we simply met them where they were and we brought them into the [face-to-face instruction] session that way and from there we started an exercise. (Lib03)

Libraries articulate learning outcomes for tutorials on the information cycle for example:

*Notes to Instructors on using the module on the information flow:*

This [Tutorial] is designed to help you start the conversation about scholarship in the academy. This is your opportunity to talk to students about the varied responsibilities of the faculty and staff with whom they will interact during their time here at [University]. Students may not be aware that professors and administrators have a variety of duties. Another point to keep in mind is that undergraduate students have the potential to leave [the University] without understanding the scholarly publication cycle. They may be told they have to read such articles, but they may not understand why, what goes into this type of information source, or the importance of these bodies of research and knowledge (Lib01)

Goals for a similar tutorial at Lib 06 are explained as follows:

One of the reasons that we developed it and we find it helpful is that when students would search a database like Proquest, they would get all links together, a scholarly article, a news magazine, a popular magazine, this and that they just got a whole list. They were not able to distinguish what is what or why they might use one over another. And they would probably end up using newspaper articles in a way where a journal article would have been much better. The news article is better for something that is very current or that is something that had a historical significance like an event. But if you are not looking for an even but information about a topic or a subject area, you are more likely to find it in journals, good information since sometimes what you would find in a newspaper might be peripheral. So, they were not having a good concept of why would I choose this one over that one. So the information cycle was designed to give them the picture of here’s how the information is developed, so when they are looking at that list they kind of fit in can … So it’s trying to give them the concept behind what they are looking for when they do a search on a database.

In summary, online information literacy tutorials address multiple learning outcomes and achieve varied information literacy goals via a seeming focus on deep engagement with information sources
5.2.2 Indicators of information literacy continuum from access to use of information; critical thinking; information use; and knowledge construction/change

Meta-claim: A few tutorials give attention to knowledge-based outcomes

As essential outcomes of missions of academic libraries and important aspects of information literacy programs, knowledge oriented goals including critical thinking, information use, synthesis and knowledge creation are given attention in online tutorials. The previous section of this chapter detailed examples of online tutorials which addressed critical thinking competencies primarily through instruction in evaluation of information and information sources. In addition, while there are explicit indicators of accessing and using information sources and several tutorials which concentrate on the ethical use of information, the data indicate that fewer tutorials speak to the use of information discovered in sources towards the creation of new knowledge. However there were implicit and explicit indicators of these espoused goals of information literacy instruction. These competencies were identified primarily in modules of comprehensive research tutorials. The continuum from access to use of information is implicitly understood in modular research tutorials that depict steps in the “research process”. Although there is a move towards modules being used discretely, the idea of a research tutorial is built on the assumption of a process from locating to using information ethically. (Lib01, Lib02, Lib03, Lib04, Lib05, Lib06, Lib07, Lib08, Lib10).

Indicators of the continuum:

- The research process including the use of discovered information is aptly described in research tutorials of Lib02 and Lib05:
When you conduct research, you’re usually not doing it just for the heck of it. Generally, you want to use that information in some way, whether that involves something academic, like writing a paper, or something more personal, like making an informed healthcare related decision...

...once you have found some sources, you have to be able to use them well in your writing. Your goal should be to read what you've found for comprehension, understand how it furthers your research, and then work it into your writing in such a way that you get maximum benefit from the ideas without creating a scrapbook of quotes or falling into the trap of plagiarism.

- The use of interactive dialog to discuss the process of developing research projects detailed in research tutorials of Lib11, Lib07, Lib08, and Lib10. These tutorials employ varied strategies including faculty explaining the process from finding appropriate sources to producing an assignment; a research assistant answering students questions about finding and using appropriate information for a research paper.

**Indicators of information use and knowledge creation/change**

References to using information towards a project are however few and in most instances they stop short of including procedures for developing the product. Most research tutorials, while purportedly covering the research process end with evaluating sources and/or citing sources with little or no reference to analyzing or synthesizing found information. ‘Using information’ which has become a hackneyed term in information literacy agendas is primarily addressed as ethical approaches to information which are discussed either in plagiarism or citation modules in these research tutorials or in full plagiarism tutorials discussed earlier in the chapter. Modules entitled ‘Using information’ dealt with citing resources and rarely operationalized this term to other ways of engaging with information.
Closely linked with using information is the notion of creating knowledge with the information found by the student or changing existing knowledge. There were few references to the writing process within modules in research tutorials. Minimal attention was also given to developing products other than a research paper:

- Write a draft as you think through ideas (Lib10).
- From Research to Writing module in research tutorial employs as the context for all skills taught in the tutorial a student’s approach to developing a research paper. Steps from locating to integrating information into writing. Synthesis of information is addressed very briefly (Lib05).
- “Visit, analyze and write about” is a short assignment on evaluating websites which is required in a tutorial on evaluating resources (Lib03).
- The use of a Research Log in two research tutorial in which students develop and record their understanding of concepts taught (Lib06, Lib07).
- A tutorial developed primarily to assist students to complete assignments on time: Includes guidelines for accessing, evaluating and using information towards different assignments including research paper, a speech, video, and lab report (Lib04). Includes a section which details the writing process.

Scrutiny of modules which addressed the creation of new information/knowledge revealed that strategies for developing these including procedural skills were not always addressed in detail. Much attention was given to enabling the start of the research process, with strategies for developing topics as well as research and thesis statements.
There was no explicit detail in developing the complex skills of synthesis and writing except in tutorials Lib04T3 of Lib04.

5.2.3 Teaching/learning strategies employed to facilitate deep learning

Tutorials employ varied teaching techniques including constructivist and conceptual change strategies to realize their varied knowledge-based and skills outcomes and to facilitate deep learning.

1. Constructivist approaches

- Activating prior knowledge
  - Concept mapping (Lib06)
  - Mnemonics (Lib02)
  - Apply what you know (Lib10)
- Learning by doing
  - Worksheets, Research Plans (Lib01, Lib03)
  - Research Log (Lib06, Lib07)
- Reflection, self regulation strategies
  - Research Log
  - Reflecting on search process: Lib01, Lib06, Lib03, Lib08, Lib02,Lib07
- Relevant, authentic activities Lib07, Lib02, Lib03, Lib01
- Problem-solving, higher-order thinking skills
  - Problem Based Learning activities: Lib01
  - Evaluating strategies: Lib08, Lib02,Lib07,Lib03, Lib10
- Assessment interwoven in the instruction
  - Pre and post tests
2. Active Learning approaches

- Use of dialogue: Lib07, Lib02, Lib06, Lib10
- Students generating questions: Lib06
- Practice exercises throughout Lib10, Lib02

3. Conceptual change approaches

- Use of the refutation text to address misconceptions about searching: Lib05, Lib08, Lib10
- Analogies: Lib01, Lib02, Lib08
- Generative questions used as prompts: Lib10, Lib07

5.2.4 Theoretical frameworks reflected in tutorials

The use of theoretical frameworks was not readily evident in tutorials. In interviews, librarians spoke of learning theory, active learning, the relational model of information literacy, inquiry, as well as constructivist theories guiding the design of instruction initiatives as in the following interview excerpt:

I would say constructivist theory. We really started moving towards active learning which can be linked directly to constructivist. And the inquiry learning framework, getting students to ask good questions, we were really striving for that (Lib03)

However not all these models and frameworks were identified in most tutorials. Where underlying theories were not made explicit, techniques and approaches used suggest constructivist frameworks (Lib03, Lib06, Lib01) and conceptual change learning (Lib08).
5.2.5 Strategies and specific tasks for assessing learning.

Information literacy programs articulate commitment to “measuring student learning to improve practice” and “evaluation of student learning”. As part of this commitment, varying techniques were employed in tutorials aimed primarily at gauging students’ understanding of concepts and strategies.

1. Quizzes: Lib01, Lib02, Lib03, Lib05, Lib07, Lib10
2. Research Plan Lib03
3. Exercises Lib03, Lib05
4. Research Log Lib06, Lib07

The use of quizzes and certificates of completion were used in many tutorials. Librarians spoke to the inadequacies of these methods in measuring deep learning and the use of alternate assessment models.

Well… It’s a very limited window into the learning. It basically tells you right and wrong answers. But it does not tell you what they did not understand. The quizzing software is not a good assessment measure. …But we are hoping to do pre and post tests in those classes and also in classes that we don’t meet with to do some comparison (Lib01).

Within the tutorial we have two kinds of quizzing; quizzing they have to complete to move through the content and the quiz that they have to get a certain score on to turn into their Instructors to signify that they have completed the tutorial. What we have tried to do in the context of the Communication Age class is to assess the module as a whole, the module being that they have completed the tutorial and attended a library instruction session and finally completed the course itself. In the library instruction session which happens after the module, we have them complete a worksheet which is connected to a database so periodically we look at the students’ responses on the worksheets with a rubric and look at their performance and a lot of the things we are looking at are addressed in [The Tutorial] as well as in the library session so the idea is that the library sessions builds on what they learn in [The Tutorial]. So we have this worksheet approach (Lib11).
Multiple approaches:

Well we have a wide variety of forms of assessment that we use. The different library instructors have assessment that they use within their classes about their teaching and immediate feedback from students about how they felt about the class and what they felt they had learnt and so if the tutorials are use and we get some feedback there. We also get assessments, not always but many of the librarians get assessment from the faculty either after the class or at the end of the semester, asking questions about how they felt it affected the papers or class assignments. And we do peer reviews of teaching so we get some assessment information from that. And we have used some of the Research logs to have a look at how these are doing (Lib06).

We are doing more pre test post test sort of assessments. Two of our librarians are doing a pilot project in administrating a pretest and a posttest through Blackboard. And these are classes they are actually working with in person but they ask the professor to administer a pretest via Blackboard. They review the results and then they do the session and later on in the semester they administer the posttest to see how many of the skills the students picked up in the session that they did not have in the pretest (Lib05)

There is also a move to replace the use of quizzes with assessment which is based on learning outcomes:

We do it [assessment] in three ways. It’s part of the course expectations and the learning objectives for specific courses. And these courses have to be approved by a process that goes to committee and we have a librarian on every one of these committees. So that’s the first step. So it’s there in the policy, there in the goals, there in the course expectations. But the key piece is the assessment because you can have that in the initial syllabus and what happens to it. And it seems to me from the way this campus is structured and moving, we are moving towards eportfolios. And so that piece is going to happen. Part of what we are doing is giving up control. In [The Tutorial] we have utter and complete control over it but if it’s not an effective teaching tool what do we have control over. The only way we assessed it or what they learnt in [The Tutorial] was the multiple choice quiz (what I have heard referred to as multiple choice guess). ..[But] There is a conscious effort both in the library and on the campus to move away from automated Standardized tests and move to more practical application, hands on learning experience (Lib08).
5.3 Relationships between conceptions and practice of information literacy: Holistic understanding of information literacy instruction in academic library settings.

Themes and concepts which emerged from the indepth investigation of mission documents of academic libraries, established the conceptions, beliefs and understandings of information literacy espoused by these libraries. Claims which were developed from this analysis indicate that information literacy is conceptualized within a knowledge framework towards realizing the intellectual missions of universities and libraries. This knowledge framework shapes the overall direction of information literacy agendas.

A comparable rigorous unpacking of outcome statements, teaching strategies and indicators of knowledge creation in online tutorials revealed that libraries attempt to realize their missions through these pervasive tools of practice. Varying approaches to the practice of information literacy emerged from the analysis which confirm that “theories-in-use are complex” (Argyris & Schön, 1974 p.37). Claims developed confirm that tutorials give attention to enabling multiple competencies including knowledge outcomes. While addressing these varied outcomes, a predominant source approach to information literacy emerged in which competencies in these online tutorials focused on an engagement with an assortment of information sources.

This section of the chapter attempts to develop a holistic picture of information literacy in academic libraries by establishing the nature of relationships between the beliefs and conceptions of information literacy and the realization of these in practice. The approach adopted in this analysis is that espoused theories of academic libraries gleaned from official mission documents provide the criteria to judge the practice of information literacy as seen in online tutorials.
In attempting to describe the relationships between conceptualizations and practice of information literacy, a number of related questions were addressed:

1. What if any are the consistencies/congruence and contradictions between espoused theories and theories-in-use of information literacy?

2. What are explanations offered by information literacy educators for congruence and incongruence?

3. What are the common characteristics of IL programs?

4. What are emerging trends in information literacy practice?

5. What might constitute an effective information literacy program?

These related questions were used to interrogate the relationships between espoused theories and theories-in-use as proposed by Argyris and Schön (1974) who propose that detection of dilemmas between espoused theories and theories-in-use is done a step towards achieving effective practice. Effective practice happens when there is agreement and congruence between espoused theories and theories-in-use. Congruence means that one’s espoused theory matches one’s theory in use. Argyris and Schön caution that there is little virtue in congruence alone since congruence between an inadequate espoused theory and a theory-in-use is useless.
5.3.1 Congruence and incongruence between espoused theories and theories-in-use of information literacy.

Findings relating to research questions 1 and 2 indicate varying levels of congruence and incongruence and complexity in relationships between espoused theories and theories-in-use of information literacy.

Congruence

Levels of congruence were detected in missions and in aspects of practice:

- Explicit and unambiguous consistency exists between knowledge-focused missions of all 11 academic libraries, their parent universities and in most instances, information literacy agendas. Instruction missions of libraries complement and are intended as part of the process towards realizing learning outcomes and missions of universities.

- Definitions and explanations of information literacy strengthen the knowledge focus established in mission statements. These definitions articulate knowledge outcomes of information use for specific purposes, critical thinking and knowledge creation via information sources.

- It appears that deliberate attempts were made in some programs to realize the goals and objectives of information literacy programs via online tutorials. Congruence was observed in what appeared to be an aligning of learning outcomes of tutorials with intended outcomes of program e.g.
  - Critical thinking outcomes addressed in tutorials which dealt with the evaluation of information sources (ten libraries) and in teaching strategies employed including reflection and analysis (three libraries).
Disciplinary approaches to information literacy addressed in subject-oriented tutorials which were present in five libraries.

Addressing ethical values in plagiarism and citation tutorials of eight libraries.

Congruence between goals for teaching the use of information sources and the focus in tutorials on search strategies for accessing and using sources was seen in eight libraries.

Espoused values of curriculum integration realized with online tutorials which were integrated in curricula of four libraries.

Goals of providing “convenient instruction” and “point-of-need instruction” realized in the short how-to tutorials developed by eight libraries.

**Incongruence**

Major gaps exist however between espoused theories and theories-in-use, between missions, values and goals of academic libraries and information literacy practice via online tutorials:

The knowledge focus in missions and understandings of information literacy was fully realized in only four tutorials. With a majority of tutorials focused on procedures and strategies for locating and using sources, a source approach to information literacy emerged rather than a knowledge approach. This is confirmed in the following:

- There was greater emphasis on procedural techniques than on building conceptual understandings and knowledge creation.
- Theme of “Finding it” emerged from the analysis.
Only one tutorial adequately covered strategies for creating new knowledge.

Critical thinking competencies were not developed beyond evaluation techniques.

- Significant disjunctions exist between espoused conceptions of information literacy and the practice in tutorials. Criteria developed for information literacy in explanations and definitions were not fully realized:
  - Information literacy is defined and understood as competencies on a continuum from access to use of information. Tutorials however focused on a few aspects of the continuum, i.e., finding sources and evaluating sources without a corresponding attention to developing other equally important aspects of the process.
  - Use of information for specific purposes towards knowledge outcomes is emphasized in most definitions. Information use was operationalized mainly as ethical use of information. Only two libraries gave adequate attention to specific uses including communicating, constructing meaning, solving problems.
  - Tutorials focused on delivery of information so that students will become ‘consumers of information’ without the parallel process of ‘creating information’.

- Developing lifelong learning is espoused by libraries yet minimal attention is given in tutorials to developing competencies that would be used outside academia. This lack of attention may result from the apparent vagueness of the
term alluded to earlier in this chapter and that no clear definition exists as to what constitutes life long learning competencies in the information literacy literature.

- **Dilemmas in instruction goals for supporting knowledge-oriented missions:**
  - Libraries espouse intellectual support of universities yet frame instruction goals in relation to engagement with sources.

- Libraries espouse “tiered learning”, “sequenced instruction”, “multiple learning environments” and an “accumulative process” yet sequenced instruction was observed in only three instruction programs over the freshman year.

Further, only in the program of one library was there evidence of online instruction throughout students’ academic enrollment. First year experiences were presented as foundation without indicating a continuous process.

**5.3.2 Explanations offered for incongruence between what is espoused and what is observed in tutorials**

Voices of librarians intimately involved in both policy development and the practice of information literacy in academic libraries clarify the emerging profile of relationships between espoused theories and theories-in-use that have been identified through analysis of mission documents and online tutorials. These librarians, as designated coordinators of information literacy and instruction in academic libraries, enrich the views of information literacy as they highlight strengths and weaknesses of programs, present explanations and justifications for the consistencies and seeming inconsistencies between conceptualizations and practice of information literacy and they identify barriers and enablers to achieving missions. These librarians assist with the development of a holistic picture of information literacy practice as they fill gaps by
expounding on collaborative initiatives, assessment models and approaches to teaching and instruction which were not visible from documents and online tutorials.

**On information use and knowledge creation**

“The library does not own information literacy” is a defining statement offered as an explanation for the minimal attention given to knowledge-based competencies in online tutorials. Pointing to the essential role of collaboration in knowledge-creation process, librarians concede that information use was not easily captured in online tutorials. A few were skeptical of the possibility of addressing information use and acknowledged the apparent gap between what they espoused and what is portrayed in their online tutorials for this important area of information literacy. It was agreed that information use and knowledge creation were effectively achieved only in collaborative initiatives.

Librarians speak to the challenges in incorporating information use in tutorials and in instruction programs:

I am yet to encounter online tutorials that do an excellent job of addressing that area.[using information] So much of that work of using information to accomplish a specific purpose happens in a particular context and the kinds of skills and abilities that are involved are much more complex (Lib11).

Our approach is from the idea that the library does not own information literacy or information competency. So the areas we are talking about synthesizing and utilizing and ethically using information, we expect that to happen in the context of the classroom not in the context of the library. We can offer support and we are experts in the tools and how to teach accessing information and we can facilitate the use of information. But when it comes down to the wire, the ethical use of information, as well the heavy duty evaluation of the material and the context of the course, have to happen with the teaching faculty. (Lib08)

The big concern that I have, it’s a K-12 problem in the US and a higher ed problem, that nowhere in the curriculum that anyone takes ownership for this and so it’s very hit or miss (Lib01)
It’s hard to do that [teach use of information to solve problems] particularly well when you don’t have consistent access to students. Our working with students is just the one shot and it leads to frustration. So it’s pretty much hit or miss, some of librarians work more closely with certain professors than others, are able to contribute by consistently going to classes or working in designing assignments but I would not say that’s typical (Lib02).

They share approaches to knowledge creation in and outside the online tutorial in collaborative initiatives:

I think the using is really different for us and very intentional…We are very much moving into ethical use piece so we have been moving for years now to expand the notion of what information literacy is to encompass some of those things… We have developed information commons that are called Smart Learning Commons here and the information commons has a huge production component. So we are really taking on an active role on campus to help students create and manipulate media…. So we are moving beyond the written word paper. For our assignment calculator we just created a new beta version and within that we have writing lab reports as one assignment calculator. So we are really moving beyond the kind of research paper paradigm. We have a librarian who is primarily focused on media literacy. We have him working closely with our digital media center on campus. This summer he did a whole week with faculty to help them integrate media into the classroom (Lib04)

I think like most instruction programs we have been historically focused on the finding and evaluation and the information literacy spectrum. But we are always looking for ways to get involved in the full spectrum of information literacy skills. One way that we do that is that we are a part of the communication requirement curriculum so we work really closely with those programs in a very structured way that’s written into the campus curriculum so that students get a full experience of not just finding information but also using it to accomplish a specific purpose. So it’s more of collaboration with instructors. We have also been more recently exploring projects like how can we work with instructional technologists on campus with courses that are creating multi media projects. So we are always looking for ways to be a part of the broader spectrum moving towards the production and I think that a number of libraries are still working on that. (Lib11)

I would say…that [synthesis] comes from the generic assignments. The assignments are focused on getting students to structure their thought process so that they can use the tools that they need to use effectively. Then we also have evaluation sheets where we are asking the students to evaluate information and in the case of one of the classes one of the assignments where we are asking them to synthesize information they found as part of their assignment (Lib08).

It’s [using information] either in the face-to-face or the materials we create for Signature Course faculty to do themselves with their students without us there at all (Lib09)

I know that a lot of librarians feel that information literacy is librarians’ territory but when you look at the ACRL competencies …some things librarians are better at and some things faculty are better at so any collaboration between the two will make the whole thing work a lot better. And you can see that crossover a lot with writing. We get
questions at the desk that really are for the writing questions and the Writing Center gets questions that are really for us. And we have a good relationship with them. And then there are these sorts of murky areas, where do those really go. So if we can collaborate with Faculty in these substantially writing component courses where they are supposed to be teaching their students how to write, and these Signature courses are, then the student doesn’t have to know where to go but it will be presented in a seamless way. Because research and writing, you can’t take them apart (Lib09).

The challenges of teaching conceptual understandings in an online environment:

I don’t think its something that comes in an online learning environment because you really need dialogue, you need a kind of dialectic kind of interaction for those conceptual things to come to the surface and it’s almost impossible to do that in an automated context. In some ways they are almost symbolic representations of what really happens…And that’s what they are used for… We created them because we need the ritual of the objects but the real learning comes from the use, it comes with action and activities and challenges. That’s where the learning happens (Lib08).

I don’t know that a stand alone tutorial, I could be wrong but my gut feeling is that I am wondering if that is even the right tool for reflection. They have their place but … (Lib03)

Information literacy being too wide:

…I think part of the challenge is that information literacy is so wide ranging from how to use a Boolean operator to taking information and creating new knowledge. There is this huge variety so I think to integrate so much into the curriculum is so difficult, especially the more complex things. (Lib03)

On critical thinking

Librarians also explain the challenges involved in adequately addressing critical thinking in tutorials and discuss strategies used in and outside of online tutorials:

I think the tutorial only touches on critical thinking in a small way, mostly in the way of analyzing a topic and breaking it down. The only other way might be how do you determine what type of resource is appropriate for a given situation. I don’t think the tutorial addresses that explicitly although depending on the student they may get some of that. In our [face-to-face] instruction generally we talk a lot more about types of resources and how they are effective for different situations e.g. books vs. articles vs. websites, popular vs. scholarly vs. trade, or, or when you need primary source material vs. secondary source material.. What are the pros and cons of each of these resources? (Lib10)

Given the time that we have, sometimes that is difficult in getting in as much as you would like to. That tends to take place more, we hope in the classroom where they talk about the readings etc. But one of the ways that I incorporate critical thinking is having them look carefully at the information that they have to examine it and to determine what it is that they have. They don’t always know that. To compare those scholarly journal articles with newspaper articles. What information are they getting and not getting,
what’s reliable and what is not. That’s part of what we can get in. I know that there is more that can be done with that but sometimes you have limited time and you can’t pull out as much as you would like (Lib07).

I think we definitely want to encourage students to look for themselves. We want them not just to look an answer but a variety of ways that address an issue. So on an individual level when we say a student has this research topic we don’t want them to look for the book that answers their research question but we want them to look for information which addresses the topic and how do they feel about that information. Do they agree with it or disagree with it and why? If there are two books that address the topic differently possibly contradictorily, which do they agree with and why? Who do they feel makes the more compelling argument? That part of research, when you have multiple perspectives, finding information to back up or contradict these multiple perspectives and develop your own perspective out of that, your own way of thinking out of all the information, pro and con for the issue. That is definitely something that we feel that we try to address which is a big part of critical thinking and intellectual inquiry (Lib10).

**On lifelong learning**

Libraries’ espoused theories on lifelong learning and the enactment of these in online tutorials is explained by librarians who offer alternate paths to enabling these competencies. These differing interpretations of what constitutes lifelong learning competencies confirm the vagueness of the term.

**Multiple opportunities for learning**

Oddly enough one of the strategies to make lifelong learning happen is not to have students in a situation where they are having a one shot session as the height of their library/information literacy experience. The fact that we have embedded information literacy goals and course expectations for a minimum of eight different courses that students will take while they are students here and probably for some of them it will be more than that…. We will be contributing to lifelong learning because they will be getting it from slightly different perspectives and because they are getting from different perspectives, we are hoping they will have the ability to bridge that (Lib08).

What we are hoping, and we speak to them about this all the time and how it works, is that the skills they are applying to an academic endeavor are the same things they can apply to any endeavor that they have in their lives. Which is one of the reasons that we try to do a lot of concept talk and a lot less tool talk as they are not going to have these tools when they graduate. But they will have these ideas and the critical thinking skills when they graduate. So I guess its that people have information needs all the time, and we talk to students about this, so what do you do when you need to know something, well they all go to Wikipedia. So we want students to think about the fact that that you will always have information needs, you had them before you came here, when in high school, [but] they are not just school related. We talk a lot about their regular behavior, what do you do when someone mentions something at a party and you don’t want everyone to know you don’t know what it is. So what will you believe and not believe.
So by trying to talk about these concepts they are applying like evaluating information that they would apply to something they will use for a college level research paper but talking about it in the context of you do this stuff, you don’t believe everything you read on the web. How do you make these decisions? So we are trying to reinforce and hopefully raise their standards as to what kinds of information they would believe and think about the context that they are in when they are looking for information since something may be fine in one situation and not in another. And so we are hoping that by tying it back into their regular behavior, and sort of demystifying it a bit it will help them to see how it applies to every information need they have no matter where they are or what they are doing, whether its at school, at work or at home on Sunday afternoon whatever. (Lib09)

Definitely we do some things in the library. Right now we have two persons who are responsible for developing programming that gets beyond the library. For example we have a speaker series that we sponsor. The one coming up next week is a discussion led by a sociology professor on John Grisham’s book, the Innocent man, so they are going to talk about Justice in American society. We do about 5 of those a year. We just had a story teller, the library sponsored him and we had school children in to hear this story teller. And he had a session for teachers and librarians. These are some of the things we are doing for lifelong learning, offering the kinds of programs and opportunities for persons in the community to hear speakers they might not have heard otherwise.

…That being said I think the concept of understanding the types of information that exist, the huge variety of ways in which we gather information from everything from the traditional library sources to Internet sources to video and music and interviews and surveys and experiments; understanding all of those types of gathering information is very much something that impacts students for the rest of their lives (Lib10)

**On the focus on skills in using sources**

Librarians are clear on the matter of the seeming imbalance in favor of tutorials which focus on strategies for using information sources. They present justifications based on the vision behind the development of these tutorials, and their multiple uses in instruction programs. They are very clear that short finding tutorials were never developed to address critical thinking but to assist students with accessing and using resources.

*Tutorials created as point of need reference tools:*

We do create tutorials like finding articles and find books but most of those tutorials we created for just on-demand like. I am in the library by self and need to find an article; this will help me to do it. They are like reference tutorials. The way they are integrated into our instruction program is if a faculty member chooses to use one but they are actually point of need tutorials and less information literacy tutorials in the way we think about them. The article one does include all these things about brainstorming keywords and choosing databases and thinking about who produces information. But it does not force reflection (Lib09).
**Focus on sources enable ‘information discovery’**

Well I think that intellectual discovery is often based on a certain foundation of knowledge. Most people don’t discover things until they know something about a field and the more they know they make new connections but they don’t usually discover when they are novices. So I think that the whole idea of using information resources both within the curriculum and beyond the curriculum, the idea that intellectual curiosity inspires people to look something up and read about something else that helps them to think about something else, whether they are doing it for an assignment or for their own intellectual curiosity is the road to discovery. So the more they are empowered with information literacy skills, the more opportunities they have creativity and intellectual discovery (Lib11).

**Faculty expectations that libraries will focus on sources:**

I think it’s hard for libraries to get away from being tool-based because teaching faculty in a lot of ways are looking to us for support for knowledge about the tools and tools not just our library resources but how the new technologies and emerging technologies are interacting with our library resources. That’s what they are looking to us for and it does not mean that we are not doing conceptual work in terms of our teaching but it does mean that that might not be as explicit in the objects themselves so personally that does not worry me too much because I think that happens through their use, not in the objects themselves (Lib08).

A few librarians spoke of the development of missions being the beginning of an on-going process towards effective practice:

We are moving towards these values as much as possible. We are trying to move away from just single one shot sessions and there are a number of ways… It’s a gradual process. And so we do as much of the information literacy as we can. We try to collaborate with faculty, we try to get it integrated in the curriculum but we are still doing things that may be considered bibliographic instruction (Lib05).

**Barriers and enablers as explanations for inconsistencies and consistencies**

**Barriers**

Librarians addressed the complexities and difficulties in achieving information literacy program missions by highlighting barriers of institutional structure, time, staff and faculty:

**Institutional structure**
The main one [barrier] is how fragmented the campus can be in terms of trying to do anything consistently across campus. It’s hard to target anything. It makes it tough (Lib01).

Another huge barrier at… is that right now there is no one course that every student is required to take. So it’s difficult to see how you would have a continuum of development of information literacy skills. There are departments looking at that aspect but I don’t think there will ever be a single course university wide or even on this campus that we could work with. That means we will have to be in a number of different places and it will not be convenient to do that in terms of a program. But it means we will have to be in a lot of different directions because they will be doing it in a number of different ways which personally I think it’s healthy but it just makes it for us less convenient. But maybe for the students the approach of the university is probably a healthy one, for different needs, for different students (Lib07).

The lack of capstone courses, university level structural barriers, those need to be worked on. Without capstone courses and standardization in the curriculum, it presents challenges for us to figure out how we are having an impact (Lib01).

**Staff**

“And I would say just trying to get buy-in from folks that information literacy doesn’t equal just telling people how to use the library (Lib02).

We are so understaffed. If you look at comparable institutions we are always at the bottom in terms of the numbers of people. I think another barrier is the kind of staff. Traditionally we hired for collections, we didn’t hire for outreach and instruction so we have this legacy staff who don’t really care as much as the newer folks (Lib04).

Not everyone believes that we should be so involved. We don’t agree. So really having that support that you need to do the collaborations. And part of that is tied to not only attitudes and perceptions but also number of people we have relative to the number of programs and departments at Rutgers. Size is a factor to us (Lib07).

**Faculty**

For the ones that we talk to, we are excited about what we are able to achieve… [But] the faculty that we can’t get to respond to us. Our goal which is written on paper and is approved by the Dean of Undergraduate Studies is that we are going to achieve these learning outcomes for every freshman and that way we are building a foundation that they can then take as they move up to their majors. And then subject librarians do more advanced research sessions with them. The reality and the barrier to our ever being able to achieve that is that not all faculty will do it. And that’s just the reality. We are really happy with the program and and hope our involvement will continue to grow but we know that although every …course faculty is supposed to work with, we know that will never happen and that is our biggest barrier (Lib09).

I think another barrier is faculty. It’s really hard to work with faculty, they are lone rangers and they want to do what they have been doing and there is just too much competition. The content for all the disciplines is enormous and to add another flavor, another element is just sometimes just too much to ask (Lib04)
I think one of the barriers was just not having enough of a seat at the table with the English professors (Lib03).

**Enablers**

Librarians also described successes with instruction programs and expressed what they considered strengths and enablers.

*Collaborative environments* came out as the number one enabler of achieving program missions:

We are so well integrated into campus wide curriculum related committees and groups. We had a librarian who two years ago chaired the Faculty Senate. That gives a tremendous amount of influence and ability to communicate with the entire teaching faculty on matters relating to university governance and curriculum (Lib05).

I would say collaborative relationships that we have had. I think that has been the driving force and the inroads that we have been able to make. We do have representation on campus on the various committees that are curriculum driven and we have been able to make inroads not only in the disciplines with the faculty and our liaison program but also in the professional development wing of the university for faculty too which is huge and coveted because a lot of libraries are not able to do that and we have that. That has always been my personal goal to make sure that whatever happens staffing wise here we don’t let that go. And a lot of this hinges on the personal relationships that you are able to develop. And we also pay close attention to that when we interview people, try to recruit new librarians, will they be able to collaborate (Lib01).

Another thing that is important is that information literacy has been actually appearing in campus curriculum documents over a long period of time so the outcomes for student learning that you saw are pretty new but even in the 90s when they redesigned the General Education requirement, information literacy found its way into those documents and that creates a situation where I can sit on a lot of campus committees and have a seat at the table, which I think is critical for the strength of the program. I think the program is also visible on campus (Lib11)

I think that the strengths are that it is integrated into some programs and that it is supported by those programs. And that more people are buying into it, there is a demand for what we have to offer. (Lib08)

I think one of the major strengths is that we are tied so closely with the programs that we are serving. That we have built a sense of partnership across a number of different areas a kind of co-ownership. I can give you more examples. …I think the thing that I have not talked about is that we try to have contact with every single student at some point in their careers and we have very extensive orientation and outreach program that we are very proud of. We are pretty much everywhere (Lib04).

I think the strengths are in the librarians working with the faculty and reaching the students with basic and more advanced information literacy strategies (Lib06).

*Staff was also stated as an enabler to achieving missions:*
We have had a couple of young and extremely energetic librarians who are willing to try new things and are adept with technology. We have people who are dedicated and are willing to work with Faculty (Lib05).

In some places that I have worked, instruction was something that you did at the beginning of your career and then you moved on to something else. On this campus we have a number of people for whom instruction and information literacy is their true specialization and they have done it over the course of their entire careers so many persons who have retired as instruction coordinators have been excellent. It’s sort of viewed as something that is important that creates depth in staff here that is not in all places. (Lib11).

I think mainly it is the collaborative vibe, the fact that we really drew in everybody’s voice, we consider everyone’s points, we encourage them to voice their feelings. And some people would participate heavily and some persons would almost not give us anything but that’s fine, because we want people to be honest, not manufacture some kind of enthusiasm. Most people were enthusiastic and some people were overworked and felt that well I should not be teaching, I don’t have time for this. Even some persons who are wonderful teachers. Yes it was that collaborative spirit and support (Lib03).

And one library expressed multiple enablers:

I think the push for collaboration. The focus on critical thinking over tool based instruction and then I think is my staff. I love working with them. They are creative, they energetic, they are not afraid to take risks, they are not afraid to be wrong and they are really focused on student learning. And I think that keeps us flexible and it keeps us fresh. If we got to a mode where we kept doing the same things all the time then we would not be changing in the way that our students change and the way that our faculty change (Lib09).

5.3. 3 Common characteristics of IL programs

This research study aims at a richer understanding of information literacy education in academic libraries by investigating conceptualizations of information literacy in mission documents and concurrent practice as observed in online tutorials of 11 academic libraries. Interviews with coordinators of instruction/information literacy augmented the findings. Rigorous unpacking of these data sources revealed commonalities among information literacy programs. These common characteristics assist with defining current information literacy instruction and relate to focus of missions, outlay of online tutorials, content of instruction, collaborative initiatives and
enablers and barriers to realizing congruence between espoused theories and theories-in-use.

Common characteristics of information literacy programs:

- Missions emphasizing knowledge creation, critical thinking, lifelong learning.
- Information Literacy/Instruction Programs as essential teaching arms of libraries to enable institutional missions.
- Multiple modes of instruction including face-to-face and online instruction.
- Varied types of and roles for online tutorials.
- Online tutorials developed to address multiple learning outcomes: procedural skills, conceptual knowledge.
- Learning outcomes guided by ACRL Information Literacy Competency Standards for Higher Education (ALA, 2000).
- Information literacy defined on a continuum from locating and using information for specific purposes including communicating, problem solving, writing an assignment and constructing meaning.
- Knowledge outcomes addressed more in face-to-face initiatives
- Information use operationalized mainly as ethical use of information.
- Information literacy practiced mainly as developing strategies for engaging with information sources: “Find it” theme observed in many programs.
- Collaborative initiatives as enablers of missions.
- Emergent and current models of university-wide integration of information literacy outcomes in curricula.
- Emergent and current models of assessment

5.3.4 Emerging trends in information literacy education

i. Increasing use of short point-of need tutorials

ii. Retirement of comprehensive tutorials

iii. Role of online tutorial: as one tool and/or integral to information literacy instruction

iv. Increasing attempts at true collaboration “So we work closely to deliver content to faculty and also have faculty to deliver content and strategies for us. The Writing Center and the Learning Resource Center are here in the library now. We are still trying to feel our way through ways of collaborating”.

v. Improved methods of assessment of information literacy

vi. Increased use of plagiarism tutorials: DO and DON’T themes.

5.3.5 Model of an effective information literacy program

Argyris and Schön (1974) explain that effective professional practice means congruence between espoused theories and theories-in-use. The authors declare however that “theories-in-use are complex” and further that “constructing models of theories-in-use is difficult” (p.37). The complexity of information literacy education has been described elsewhere in this thesis and this is assumed in the possible creation of an effective program. However guided by the framework of Argyris and Schön, and
interrogation of the composite findings of this research, several approaches are suggested towards this end.

Constructing a model of an effective information literacy program may involve identification of what constitutes congruence between espoused theories and theories-in-use. However it would also address processes libraries engage in towards building theories-in-use. Additionally an effective information literacy program would speak to the barriers and enablers identified by practitioners. Current trends in information literacy programs which indicate an aligning of practice with espoused goals and objectives and realizing institutional missions must be taken into account in the development of this ‘effective program’.

**Best practice elements of current programs which may be included:**

- Explicit and implicit attempts at aligning practice with mission as in three institutions.
- Methods of enabling of knowledge creation in instruction Lib05, Lib02, Lib03
- Tutorials adequately addressing outcomes to fulfill missions and goals.
- Assessment models beyond self assessment and quizzing: outcomes-based
- Culture of Collaboration Lib09
- Curriculum integration models: curriculum mapping, embedding outcomes Lib09, Lib03, Lib01
- Enabling values and social responsibility via tutorials: Lib09, Lib05, Lib03
- Tiered approaches to instruction. Lib04
- Team approach to developing instruction tools. Lib03, Lib06, Lib07

An effective program may also include possible ways of addressing incongruence between espoused theories and theories-in-use. Some of these issues fall outside the scope of this chapter and are discussed in Chapter 6.

5.4 Chapter Summary

The purpose of the research was to investigate how information literacy is conceptualized and practiced in academic libraries. Three main research questions and a number of related and explanatory questions were developed to address the main research question. This chapter presented detailed and rich descriptions to provide answers to these questions. Meta-claims were developed from indepth comparative analysis of institutional statements of claims from eleven institutions. These meta-claims established the conceptions and practice of information literacy in these libraries.

Table 5.7

Meta-claims of espoused theories and theories-in-use of information literacy

<table>
<thead>
<tr>
<th>Espoused Theories</th>
<th>Theories-in-Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Libraries as environments of learning become agents for fulfilling missions of universities.</td>
<td>Online tutorials address multiple information literacy competencies with a focus on developing strategies for accessing and using information sources.</td>
</tr>
<tr>
<td>The espoused discourse of academic libraries indicates intellectual support for universities by advancing knowledge, critical thinking and learning.</td>
<td>A few tutorials give attention to critical thinking and other knowledge outcomes.</td>
</tr>
<tr>
<td>Information literacy is conceptualized primarily as intentional engagement with information for specific purposes</td>
<td>Critical thinking is addressed primarily via the evaluation of information sources.</td>
</tr>
<tr>
<td>Libraries espouse a “culture of collaboration and integration” as essential to achieving information literacy</td>
<td>Information literacy is practiced primarily as locating, using and evaluating information sources.</td>
</tr>
<tr>
<td>Information literacy agendas address multiple</td>
<td>Ethical dimensions in missions of universities and libraries are addressed via tutorials.</td>
</tr>
</tbody>
</table>
learning outcomes to enable holistic
development of students, including academic
success, social responsibility and lifelong
learning.

- Some tutorials are designed to be used by
  faculty for integration of student learning
  outcomes

These findings were augmented through the multiple themes concerning practice
of information literacy as reported by librarians via interview transcripts. Librarians
provided clarification and confirmation for the patterns of congruence and incongruence
observed between their missions and goals for information literacy and instruction via
online tutorials. They reported on barriers and enablers to achieving their missions and
ideals. Librarians shared their vision and emergent initiatives in realizing these.
CHAPTER 6
Discussion and Conclusions

6.0 Chapter Overview

This research was conducted to investigate the relationships between conceptions and practice of information literacy in academic libraries. The overall purpose of the study was to develop richer understandings of the relationships between espoused theories and theories-in-use of information literacy towards a holistic picture of information literacy education.

A detailed review of the literature revealed that while extensive research has been done on the practice of information literacy, there were significant gaps in understandings of relationships between foundational beliefs of information literacy and instruction practice in academic libraries. The review demonstrated that substantial research exists that has examined beliefs and conceptualizations of information literacy in a range of settings including academic environments. A comparable body of work has explored the development of multiple models and frameworks of professional practice. Questions remained however about whether and how the beliefs and conceptions of information literacy shape instruction initiatives in libraries. This research study focused on investigating these relationships and has added to the body of literature by providing rich understandings of the complexities in information literacy education.

To create a structure for the investigation of conceptions and practice of information literacy, the research adopted the framework of Argyris and Schön (1974) in which professional practice is investigated via theories of action, namely espoused theories and theories-in-use. The research process was guided by advice from Kane,
Sandretto and Heath (2002) in a comprehensive meta-analysis of studies using theory of action framework. The authors proposed, based on their extensive findings that research on theories of action of professional practices should 1) utilize multiple data sources to allow the emergence of several points of view; 2) adopt appropriate methodologies to gain access to both espoused theories and theories in use; 3) avoid assuming practice (theories-in-use) based on beliefs and conceptions (espoused theories); 4) avoid comparing espoused beliefs of action with self reported practice. The authors suggest that effective theory of action research tells the “full story” by comparing espoused beliefs of action with observed practice. This reiterates a premise of Argyris and Schön that theories-in-use must be inferred from an examination of behavior and representations of action.

In this study espoused theories were examined by investigating the conceptions and understandings of information literacy as seen in mission documents of eleven academic libraries. Theories-in-use were identified by analyzing how information literacy is practiced via a range of online tutorials which are utilized by these libraries in instruction initiatives. To add to these documents and representations of practice, semi-structured interviews were conducted with practitioners of information literacy education at each of these libraries. A constant comparison approach (Strauss & Corbin, 1998) was used to develop concepts and broad themes, and statements of claims from these multiple data sources. Rich descriptions and understandings of how information literacy is conceptualized and practiced emerged from this analysis.

The previous chapter described in detail the findings of the study in relation to the major research questions, sub-questions and sub-areas towards building an understanding
of the relationships between espoused theories and theories-in-use of information literacy in academic libraries. The chapter detailed the major conceptions of information literacy espoused by academic libraries, how information literacy is practiced via online tutorials and other modes of instruction and revealed the complexities in relationships between these conceptions and understandings of information literacy and instruction initiatives.

The purpose of this chapter is to briefly discuss the findings of the research and present general conclusions. Since this study focused on professional practice of information literacy, the chapter also discusses implications of the research for practice and the application of research findings to the academic library community. It proposes areas for future research.

6.1 Espoused Theories and Theories-in-use of Information Literacy:

Conclusions

Overview

The research findings establish that information literacy education in the selected academic libraries is multi-dimensional, complex, and contradictory. There appeared to be no single consistent conceptualization of information literacy either espoused or in practice in this academic library community. These findings support and add to the research literature on theories of action by identifying dilemmas in theories-in-use of information literacy as well as areas of incongruence between widely accepted beliefs held by the information literacy community and actual practice in academic libraries. These findings also echo the literature that indicates that as a concept and as professional practice information literacy is contradictory. The analysis reveals 1) multiple and explicit espoused theories of information literacy articulated by academic libraries which
coalesce around knowledge creation and lifelong learning themes; 2) varied, less explicit and sometimes conflicting theories-in-use which emphasize engagement with information sources; 3) varying levels of congruence and consistencies in the relationships between espoused theories and theories-in-use as indicated by the few successful attempts to realize goals and outcomes both in online tutorials and in other instruction initiatives 4) major contradictions and incongruence in the relationships between the espoused theories and theories-in-use as indicated by significant gaps in addressing goals and missions. The discussion addresses these findings.

**Espoused theories: Institutional goals vs. professional values**

These research findings indicate that espoused theories of information literacy in academic libraries emphasize knowledge outcomes, and coalesce around developing competencies of knowledge creation, critical thinking and lifelong learning. These outcomes are reflective of 1) missions of universities and 2) foundational beliefs of information literacy such as instructional collaboration and curriculum integration promoted by the ACRL *Information Literacy Competency Standards for Higher Education* (ALA, 2000). Conversations with librarians supported this documentary evidence. The research suggests similarities and differences between these major influences on espoused theories of libraries which shapes outcomes in practice.

The findings indicate a clear espoused connection between the teaching aims of libraries and missions of universities and imply that academic libraries negotiate their roles within universities as learning environments with intellectual goals and responsibilities. Libraries promoted themselves as integral to the academic missions of the universities. However libraries were equally explicit in articulating values and beliefs
of the professional library community. They also negotiated their teaching goals around the ACRL Standards although this was less publicly stated than their allegiance to institutional missions. As indicated in chapter 2 of this study, professional standards become important in guiding practice and the ACRL Standards are sometimes viewed as a mantra for effective information literacy practice.

There are indications of connections between the institutional goals and what may be considered professional goals. The clear focus of libraries on espousing instructional collaboration and curriculum integration as essential values and processes of information literacy is supported in the conceptual and research literature of information literacy. Collaboration is an essential, foundational paradigm in information literacy. “Information literacy is more than library instruction and requires an additional involvement that extends beyond the library” (ALA, 2000, p.5). The Standards advocate that faculty as well as library staff will be required to take ownership for developing course assignments that ask students to demonstrate higher order skills and critical thinking (ALA, 2000). However collaboration and curriculum integration are processes towards realizing knowledge outcomes of universities and are bridges between the intellectual and the “profession-generated” outcomes. Many universities also espouse collaborative initiatives.

This research suggests that the dual influence on espoused theories of information literacy is intricately connected. Institutional knowledge outcomes of critical thinking and knowledge creation are advocated in the Standards. Libraries have always espoused ethical use of information as this is detailed in the ACRL Standards. Furthermore the findings demonstrated that the intensity now observed in teaching initiatives of libraries
towards plagiarism and academic integrity is linked to changing emphasis in universities concerning plagiarism as suggested by librarians.

However this research proposes that differences between institutional and professional values result in discrepancies between espoused theories and theories-in-use. There is the feeling that since the ACRL Standards offer guidelines towards building competencies and skills related primarily to library endeavors, libraries may actually gravitate more towards realizing these goals in practice. Professional standards may in fact inhibit the full realization of intellectual goals since there may be focus on building skills and competencies historically associated with libraries which are seemingly more doable and easier to address. This may explain dilemmas in which libraries espouse intellectual and knowledge-focused goals and explicate these through an explicit approach to teaching students to engage with information sources.

**Espoused theories: Multiple understandings of information literacy**

Variations in information literacy definitions articulated by libraries are also supported by the literature that indicates a multiplicity of understandings of information literacy. There appears to be no strong consistent conceptualization of what information literacy is in theory across the institutions. These varied definitions of information literacy may be reflective of the contradictory nature of information literacy and the lack of a cohesive understanding of the concept discussed in Chapter 2 of this study. While there is merit in this rich diversity and individuality in definitions and may be seen as ways of self expression and branding their programs and very commendable, at a broader level this range of conceptions among a fairly small sample may indeed contribute to a confused, muddled and chaotic conception of what constitutes information literacy.
What is noteworthy also is that all these definitions highlight information literacy as a continuum, a process of engaging with information and the intentional use of information for knowledge creation outcomes of solving problems, completing assignments, constructing meaning, and communicating. So there was agreement on the process and use but variations in understandings of what constitutes “use” in information literacy programs. This finding is also supported by the literature which indicates that several theoretical frameworks including Information Intents, learning theories, Sense-Making and constructivist theories including the Information Search Process guide definitions and explanations of information literacy. Figure 1.4(Chapter 1) of this thesis confirms these multiple underpinnings. These varied understandings of information literacy as espoused may represent a possible explanation for the variations in the working out of these in practice.

**Theories-in-Use**

Research findings indicate that the online tutorial played an important, sometimes essential role in information literacy programs and demonstrated multiple theories-in-use of information literacy practice. Strategies and approaches used in instruction initiatives via these online tutorials ranged from teaching procedural skills in finding resources, to enabling students to think critically about information, and fostering ethical approaches to the use of information. A few tutorials addressed procedures for developing research plans towards creating assignments. These multiple approaches to instruction are supported by the literature. Kuhlthau (1987) identified three approaches to education including a source approach, the pathfinder approach and the process approach. Sundin’s (2005) research on Scandinavian information literacy tutorials extended these as he found
four different approaches, source, behavioral, process and communication. The findings for this research on information literacy indicated that although these multiple approaches were observed in tutorials examined, it seems that a source approach dominated. There was little emphasis on the knowledge process approach.

The research findings also suggest that libraries were open to change in constructing theories-in-use. They retired and revamped seminal flagship tutorials to provide resources more relevant to student populations. In a few cases tutorials were developed as tools to assist with integration of information literacy competencies in academic curricula. It appeared, though that only three of these newly created or amended tutorials addressed deep learning and knowledge creation as most changes appear to have focused on visual effects and active learning methodologies which however assisted in the learning process.

6.2 Relationships: Congruence between Espoused Theories and Theories-in-use

The range of online tutorials developed and the varied competencies addressed via these tools allowed for ad hoc realizing of stated goals of libraries and information literacy programs. Levels of congruence achieved between espoused theories and theories-in-use are also partly supported by other research which indicates that online tutorials display evidence of effective information literacy practice. The criteria are many and varied as Dewald’s extensive research (1999a) showed. The author applied what she considered characteristics of good instruction to the online tutorial which included the teaching of concepts and mechanics, and active learning strategies which are goals articulated by information literacy programs. It may be that these characteristics were
also tied to the espoused outcomes for learning. What this study found was that libraries were explicit in instruction missions that programs would provide a balance of teaching conceptual understandings and knowledge based outcomes while addressing skills in accessing information sources. Congruence was partly achieved as most tutorials realized one aspect of this equation i.e. they focused on developing skills in accessing information sources. In addition, ten institutions gave some attention to developing knowledge outcomes of critical thinking by including modules or tutorials which addressed evaluation of sources. Only two tutorials addressed knowledge creation in detail and demonstrated attempts at achieving this espoused balance. In addition three tutorials used teaching methods in an attempt to realize these outcomes. Research by Chau (2006) and Gordon (2000a) confirmed that the use of constructivist strategies such as concept mapping as seen in only one tutorial, encourages critical thinking and affect information behavior of students.

Of signal note are the successful attempts by academic libraries to address institutional values and specifically ethical and social responsibility via tutorials which addressed areas of plagiarism and academic integrity. In addition four of these plagiarism tutorials or modules addressed issues of creating a product.

**Areas of congruence outside the online tutorial reported in interview transcripts**

There were indications from the research findings that libraries attempted to realize congruence between espoused values and instructional activities outside the use of online tutorials. Themes which emerged from interview transcripts indicated that libraries addressed areas including critical thinking, instructional collaboration, curriculum integration and lifelong learning in other instructional initiatives. This may substantiate
the stated limitation of utilizing the online tutorial as a single indicator of practice in research which examines relationships between philosophy and practice of information literacy. What emerged from rich discussions with librarians is that collaborative initiatives are more widespread than would be ascertained from online documentary evidence. A theme of “culture of collaboration” emerged from a few online programs in which there was seemingly robust activity between librarians and faculty. In addition, more librarians spoke with enthusiasm about collaboration with faculty as the strength of their programs and indicated that this was the route to addressing outcomes of critical thinking, reflection and knowledge creation not always dealt with in online tutorials. Further, according to the reports from librarians, integration of information literacy competencies within curricula, observed in the use of some online tutorials, was more widespread. These reports may throw additional light on the relationships between what librarians set out to do and what is actually achieved in information literacy practice. Detailed descriptions of curriculum mapping projects in two libraries; the move towards the integration of information literacy outcomes in curricula as part of campus wide initiatives at two other institutions speak to apparent evidence of the work of libraries in achieving goals and values.

In addition there was report in one library of tiered instructional activities not connected to online tutorials. Models of information literacy assessment which move evaluation from a seeming dependence on quizzing were also brought to the fore as ways of achieving stated mission and goal of assessing to address learning outcomes. The research findings provide evidence of areas of best practice in which there was consistency between what was espoused and what was addressed in practice. These
indicators of successful attempts at realizing goals have implications for the future of information literacy practice. Reported enablers for achieving mission including institutional support and innovative instruction staff are also areas worthy of note.

The researcher notes the richness added by the voices of librarians. Based on these additional findings, this study acknowledges the possible need to revisit the use of the online tutorial on its own as singular evidence of information literacy practice to judge espoused theories especially in light of current moves towards real collaboration and integration of competencies in academic curricula.

**Matter of caution**

The researcher is cautious not to deviate from a principle of the framework of theory of action (Argyris and Schön, 1974) and the advice of Kane, Sandretto and Heath (2002) that effective theory of action research examines espoused theories and observed theories-in-use. Argyris and Schön are very explicit that persons should not simply be asked about their theories-in-use since responses sometimes reflect espoused theories, what people and institutions would like to do. Theories-in-use must be inferred from behavior or representations of action and practice.

Argyris and Schön suggest however, that “constructions of theories-in-use” will account for “regularities of behavior and deviations due to external or internal inhibitions” (1974). There appears to be online evidence which would suggest regularities in relation to collaboration and curriculum integration and in these cases therefore it is assumed that what is reported constitutes theories-in-use.

Major contradictions in the relationships between espoused theories and theories in use were identified from the research findings. Unambiguous and explicit espoused theories including knowledge creation goals for information literacy practice did not materialize in instruction initiatives. Rigorous unpacking of concepts and verbatim outcomes statements seen in approximately 150 online tutorials and learning objects of eleven academic libraries suggests that goals and learning outcomes of information literacy programs are only partly realized through online tutorials. A “Find it” theme emerged from what was clearly a focus on accessing multiple information sources in these tutorials. This was inconsistent with the knowledge creation and lifelong learning focus seen in missions and goals. Instances of enabling students to process, analyze and synthesize information were not widespread in the tutorials yet all definitions of information literacy espoused these outcomes.

The findings confirm the inherent complexity in studying espoused theories and theories-in-use (Argyris & Schön, 1974; Kane, Sandretto, & Heath, 2002). The research literature on theory of action in academia and other professions corroborates the findings of this study. For example, Willis’ (1993) research on assessment practices of teachers concluded that assessment methods used by teachers were technicist in nature and were at variance with espoused theories of learning. Willis was very candid that references to lifelong learning and the rhetoric of curriculum reform in education become meaningless unless assessment practices of teachers reflect similar theoretical principles. The findings of this research on contradictions between the espoused theories for teaching and learning...
and the methods used in information literacy online instruction add to this body of work on theory of action.

Other research in information literacy and information seeking can be compared with findings in this research study. Sundin’s (2005) study of Scandinavian information literacy tutorials while not investigating relationships between missions and practice, found conflicting approaches to teaching in these tutorials. All four approaches identified -- source, communication, behavioral and process -- were sometimes seen in a single tutorial. While all these approaches were also seen in tutorials in this research, the source approach was dominant with tutorials also exhibiting a behavioral approach. The behavioral approach is linked with the behaviorist paradigm of teaching and learning which focuses on the development of skills. Sundin found that tutorials with a source approach focused on “sources leading to an emphasis primarily on description of different types or genres of primary, secondary and tertiary sources” (p.5). He says however that this represents librarians’ expertise and so is given much weight in instruction. Kuhlthau (2004) says the source approach and source related interventions are important for assisting students to access information but these must be followed with enabling the process of constructing knowledge from the information or instruction remains in the bibliographic paradigm. Although a few tutorials included strategies on the process of developing knowledge, this aspect was absent from most.

The source approach as a focus is also inconsistent with espoused goals of developing lifelong learning. The approach falls short of social and cultural contexts of information (Andersen, 2006; Kaptizke, 2003b; Todd, 2000b; Touminen, Savolainen & Talja, 2005) which are essential for encouraging lifelong learning. Aligning information
literacy instruction to meet lifelong learning goals would mean a repositioning of instruction to focus on social contexts with students understanding knowledge consumption and production. Knowledge production is espoused in information literacy understandings and yet only two tutorials addressed this concept in depth. Further there was less instruction on procedures and the process of engaging with and analyzing information. Dewald posits that successful learning of complex knowledge requires the student to engage in the production of new knowledge, self evaluation, reflection and application of that knowledge (1999b). Most online tutorials failed to engage students in these practices.

**Shades of incongruence**

Negative stances towards encouraging ethical approaches to information are also incongruent with espoused values of developing social responsibility and lifelong learning. The explicit “Don’t” theme which emerged from some plagiarism tutorials which excluded accompanying scaffolds to encourage students through a process of synthesizing new information into their knowledge base may not build competencies for life. Students’ inabilities to synthesize and a possible resulting lack of confidence to develop their own ideas may be underlying causes of plagiarism. Unless these are addressed, strong negative approaches to avoiding plagiarism may assist in realizing institutional and professional goals of developing ethical values but this approach contradicts and inhibits other goals for information literacy. Research by Dee and Jacob (2010) indicates that intense attention to plagiarism in higher education may in fact be misplaced as there was little objective data on the prevalence. In addition the authors asserted that incentives are not well aligned to support institutional norms. The research
also suggested that positive intervention “reduced plagiarism by increasing student knowledge rather than by increasing the perceived probabilities of detection and punishment” (abstract).

**Barriers to achieving mission as incongruence**

Barriers to achieving mission and effective practice as reported by librarians must be addressed in discussions of inconsistencies between mission and practice in information literacy education. Librarians reported barriers of institutional structure, faculty, time and funding as inhibitors to achieving goals of collaboration, and building knowledge creation outcomes and critical thinking. These obstacles have implications for the future of information literacy practice and contribute to understanding the complex arena of information literacy education.

**6.4 Discussion: Espoused Theories and Theories-in-use**

Further remarks can be made on the findings of inconsistencies and incongruence. The focus on this finding derives from a premise of the framework of Argyris and Schön (1974) that deep reflection on espoused theories and theories-in-use should provide valid information which makes dilemmas recognizable. This recognition creates tension to resolve them and this “tension motivates learning” (p. 97). This section offers explanations for dilemmas and contradictions observed in an attempt to resolve them.

Firstly, a plausible argument which has been put forward to this researcher in an attempt to justify the gaps reported in this study between espoused theories and theories-in-use of information literacy, and which should be addressed, is that information literacy practitioners may not be stakeholders in developing mission statements and may therefore not identify with these stated institutional missions and goals. This contention is
not consistent with the research findings in this study. The data indicate that libraries explicitly support the missions and goals of universities. Further, information literacy programs and librarians working in these programs hold the purposes and values of universities and libraries as true and endorse these purposes. Indepth interviews with librarians intimately involved in the development of information literacy goals as well as the implementation of these in practice confirm this documentary evidence. This research established therefore that academic libraries espouse knowledge creation outcomes and articulate understandings of information literacy that are consistent with these outcomes. Since it established that there was no evidence of lack of knowledge on the part of librarians regarding values and missions, there remain other possible explanations for the obvious disjunctions and gaps between articulated missions and practice.

One possible explanation for inconsistencies identified comes from Argyris and Schön (1974) who declare that few people think about their theories-in-use and the paradox is that “their theories-in-use prevent them from doing so” (p. 37). This research suggests that it is possible that academic libraries have become so fixed on providing instruction on varied and multiple information sources that they are not aware that this focus, unless followed with other instructional scaffolds, inhibits the intended purpose that these sources were meant to realize, the building of critical thinking skills, lifelong learning, and the creation of new knowledge. Argyris and Schön also contend that asking people to think about their theories in use is not only unusual but it contradicts much of what they have learned. The authors say “theories-in-use are means for maintaining certain kinds of constancy” (p.15). They specify what variables people are interested in. It may be that what has been learnt by instruction librarians is still entrenched in the
bibliographic tool-based paradigm even though most libraries are explicit that their teaching is more than library resources and tools.

A closely related explanation comes from research by Greenwood (1993) on the practice of nurses. The author suggests that espoused theories and theories-in-use differ because “theories-in-use of real world situations are constructed in and through repeated exposure to such real world situations” and these “function to render subsequent experience of similar situations meaningful and manageable” (p. 1184). Greenwood calls for the adoption of “real world theories of action”. Maybe libraries have created what are real-world theories of information literacy and these have become accepted and “acceptable” as practice in the academic library community. A focus on engagement with multiple sources is probably more manageable within the library environment than attempting to engage students in more complex tasks of analysis, synthesis and creating knowledge which as all librarians confirmed, must happen in collaborative environments. Further the constraints and barriers expressed by librarians may indeed merit real world theories of action for information literacy. However the challenge for the academic library community is that real world theories of action may lead to information literacy education being reverted to bibliographic instruction. In similar manner to the work of Greenwood, Willis (1993) calls for “compatible theories of action” to address matters of incongruence in professional practice of teachers.

Still another possible reason for the patterns of incongruence observed in information literacy practice is related to the research by Bruce (2002) who says that theoretical positions determine strategies employed in practice. The author explicates:
If we believe learning to be about seeing the world in particular ways, then one important aspect of learning to be information literate is coming to see information literacy in particular ways… If on the other hand, we believe learning is about being able to demonstrate a particular skill set, then learning to be information literate is about being able to demonstrate a particular skill set and that is what will be assessed (p. 100).

Although definitions of information literacy offer multiple interpretations of “use” of information e.g. completing an assignment, communicating, constructing meaning, solving problems, in the delivery of information literacy instruction via tutorials, “use” is reduced primarily to a single approach somewhat divorced from these definitions. It seems that there is still not a clear understanding of what constitutes use in information literacy. The “chaotic vibrancy” espoused is not realized in practice. It appears that one of the weakest links in the chain between information literacy ideals and practice centers around the very small word and large concept, “use” and it may be time to address this in information literacy programs. The research suggests that the dilemma may result from how libraries understand the driving force behind information literacy programs, the professional ACRL Standards. The Standards addresses the use of information as the “planning and creation of a particular product or performance” (2000, p.13). However it may be that procedures towards realizing these outcomes have not been fully addressed which may account for a seeming fear on the part of libraries to develop knowledge creation in instruction initiatives. Libraries have expressed that teaching students to use information to create products is not within the responsibility of the library.
6.5 Implications for Practice

Public testing and interrogation of theories-in-use in relation to espoused theories, done primarily to address challenges and dilemmas in practice, is considered risky (Argyris and Schön, 1974). The findings of this research suggest that the process of evaluating information literacy education in academic libraries was indeed risky as it revealed glaring contradictions in practice while pointing to areas of congruence. The research was also linked to the proposition of Argyris, Putnam & Smith (1985) that implicit in an investigation of theories of action, is the theory of learning. Public reflection on practice is done in the interest of learning, towards bringing theories-in-use in line with espoused theories for greater effectiveness in practice. An understanding of how information literacy practice is implemented in academic libraries becomes critical for student learning outcomes and this understanding has been achieved in this study via a process of deep reflection on both conceptions and implementation in practice. The research suggests that such reflection and evaluation are useful for clarifying what is meant by information literacy to better align learning outcomes with espoused missions and goals. The process of evaluation utilized in this study as well as the research findings has implications for the future directions of information literacy in higher education.

The research is therefore presented as a model for reflecting on espoused theories of information literacy to ask whether these are appropriate to guide practice. This will involve revisiting conceptualizations, definitions and seminal values. Is there consistency in conceptualizations of information literacy to which academic libraries espouse? Are there differences which may inhibit effective practice? Differences are not always inhibitors especially as Argyris and Schön (1974) make it clear that there is no virtue in
congruence for the sake of congruence. The authors promote reflection as a means of understanding both internal and external dimensions of professional practice. What are the essential enablers that libraries should strive for to achieve and realize the goals arising from these espoused theories?

The research process is also presented as a tool for evaluating varied dimensions of information literacy practice in relation to instruction including multiple online resources and classroom initiatives. Rigorous evaluation should be done to address issues of consistency within practice and congruence between the rhetoric and the teaching practices. The teaching implications of this evaluation tool are clear since reflection and evaluation are done for more effective practice. Will instruction initiatives and tools as developed achieve the stated learning outcomes? It seems that there is a critical need to address the “use” dimensions espoused in many definitions of information literacy. This will necessitate moving beyond the current focus on finding information to address a more holistic approach which includes competencies, attitudes and dispositions inherent in the foundational values of information literacy as well as the learning outcomes which are endorsed by academic libraries. These competencies will focus on the transformation of information into knowledge, and the enabling of critical thinking towards building new knowledge. Strategies employed will address multiple approaches of enabling information literacy which are supported by the research literature. Many online tutorials investigated did not seem to have been developed on research-based pedagogical models.

Pedagogical approaches will need to be addressed. Libraries espoused inquiry yet there was only little indication of inquiry methods being used in which students had opportunities to reflect on the learning process and generate their own questions. Inquiry
learning and more specifically guided inquiry learning is an approach which addresses critical aspects of the learning process. This approach is based on the Information Search Process (ISP) which has been tested in multiple learning environments and provides a framework for understanding the information to knowledge process (Kuhlthau, 2004). Kuhlthau developed the ISP from empirical qualitative and quantitative research over a long period as a theoretical framework for explaining the process of information use. The model emphasizes knowledge construction, meaning making, collaborative behaviour and critical thinking which are foundational to information literacy. Research studies have applied the model in interventions in different academic environments (Harada, 2002; Heinström, 2006b; Todd and Kuhlthau, 2004a, b; Limberg, 1999; Todd, 2006; Vakkari, 2001) and it is proven to be successful in guiding students in the research process.

In an attempt to redefine the parameters of information literacy as it currently exists, Markless and Streatfield (2007) proposed a radical student-focused model in which making use of information is central to an understanding of information literacy. The authors draw on research based models including that of Todd’s critical information literacy model (2001). The model proposed by Markless and Streatfield has a heavy emphasis on transformation and construction of knowledge, and is designed to encourage students to stop seeing research/assignments as a process of collecting information and instead to see in terms of forming their own perspectives and creating new insights (p. 29).

The model takes students beyond the mere finding of information to connecting, interacting and making use of information to construct new knowledge and arguments.

The research findings of this study suggest that there is a need for more widespread information literacy interventions, both in the online and face-to-face
environments that support all the stages of the knowledge creation process not just finding. These research models are offered as suggestions to the information literacy community.

The results of this research also suggest that there is a possible need to examine the nature of instructional design and how it is undertaken by academic librarians.

The research findings also have implications for instructional design issues in information literacy. The results of this research suggest the need for development of modules within tutorials or short point-of-need tutorials which explicitly teach students to analyze, synthesize, construct diverse arguments and develop conclusions. While librarians say these important areas are dealt with mainly in collaborative face-to-face sessions, they also indicated their recognition of the changing needs of the millennial generation whom they serve. All libraries have therefore developed shorter point-of-need learning objects which allow 24/7 access. This thesis suggests a more widespread development of modules which speak to the knowledge creation process. These can also be used in collaborative initiatives. Working with writing centers, for example could benefit both libraries and centers.

Another design area relates to instructional interventions which aim at enabling ethical use of information. The trend towards building tools on assumptions of mistrust may inhibit rather than encourage students. Strategies adopted in three tutorials (Lib05T3 and Lib06T1, Lib09T2) may be incorporated. These address students in authentic academic and real life situations “scaffolded” through the process of creating products.

This study’s methodology could also be used as a tool for identifying enablers and barriers to effective information literacy practice. This research also identified areas of
congruence between espoused theories and theories-in-use which are important for advancing practice in information literacy education. Some libraries demonstrated or reported being in the process of developing what could be considered best practice information literacy initiatives (Lib02, Lib05, Lib08). Librarians also indicated areas of strength in their programs which allow for enactment of missions and goals. These areas of best practice, these identified strengths may be adopted by and adapted for individual information literacy programs. A few libraries (Lib03, Lib06, Lib08, Lib09, Lib11) came closest to modelling best practices or were in the process of introducing significant changes towards best practice. In addition as Chapter 5 indicated specific aspects of different programs may be incorporated into any model of “best practices”.

The process detailed in this research is offered as a framework and model for reflecting on and evaluating information literacy values and practice and the complex relationships between these. An interesting occurrence during a few interview sessions was librarians stating that they were making notes as the questions prompted deep reflection on areas of practice that had been taken for granted. Figure 6.1 details the reflection and evaluation processes.
Figure 6.1 Model showing how expressions of information literacy in policy statements and as embodied in instruction programs and tools can be compared in the interest of improving practice.

6.6 Study Limitations

This study investigated information literacy in eleven academic libraries which were recognized in two best practice sites for exemplary instruction resources. However there were constant changes to the online resources of these libraries during data collection and analysis. It is possible therefore that findings reported for individual libraries may not reflect the current online presence of these institutions.

The limitation of using the online tutorial as representative of practice has been discussed earlier in this chapter yet deserves mention in this section. A more complete
and holistic understanding of information literacy in the eleven libraries studied was sought through interviews, and therefore the results also reflect the voices of librarians.

It is possible that this researcher inadvertently changed perspectives after listening to the voices of librarians.

Conclusions made from the results of this investigation of conceptions and practice of information literacy relate primarily to the sample of eleven academic libraries, and cannot be applied to academic libraries in general.

6.7 Areas for Future Research

A rationale for conducting this research was that, as a concept and professional practice information literacy is considered critical in both social and academic contexts. Its significance nationally and internationally has been documented in the literature reviewed for this research. An endorsement by the President of the United States in establishing an Information Literacy Awareness Month (United States President, 2009) confirms the significance of information literacy.

The importance of information literacy has implications for how it is practiced in academic environments. Research into what shapes information literacy instruction becomes central in providing guidelines for more effective practice. This study provided answers to the research questions but other questions emerged during the process of data collection and analysis as well as from the research findings which might prove useful in generating future studies.

Develop a shared repository of best practice initiatives

The question of having access to best practice information literacy teaching initiatives was raised several times in the interview process. There is the recognition of several
repositories of online tutorials and these were documented in Chapter 2 of this thesis. However, a research project which develops a shared repository of teaching initiatives which address and focus on deep learning and knowledge building would provide support for coordinators of information literacy programs. This would incorporate successful collaboration initiatives being undertaken to achieve these outcomes.

**Investigate other populations**

The libraries investigated in this study were all U.S. based and were all institutions which had exemplary instruction resources. It would be worthwhile to replicate the study with libraries in other geographic areas including academic libraries in the Caribbean.

**Measure knowledge outcomes and impact of information literacy interventions**

What difference does information literacy instruction have on students’ mastery of information competencies in disciplinary matters? A proposed study will identify and target an information literacy dilemma, design the intervention using a quasi experimental design. Pre and post testing will be used to determine the impact of the intervention on students’ development especially in the areas of knowledge creation and critical thinking.

**Assess librarians’ beliefs and practice**

This research focused on libraries’ institutional espoused theories and it would be worthwhile to do an indepth study of information literacy/ instruction librarians and their individual beliefs on teaching and information literacy and how these relate to their actual teaching practices. The model in Figure 6.1 can be applied at either the institutional or individual level.
**Analyze assessment tools**

Questions concerning the efficacy of assessment instruments employed in information literacy/instruction programs came to the fore during interview sessions. Varied and in some cases new models of assessment were discussed by libraries to address the seeming inadequacies in current tools. I would like to conduct research to evaluate the outcomes of IL assessment models.

**6.8 Closing Statement**

Information literacy education in academic libraries is on the threshold of a new beginning. The significant changes made to the face of online programs over the duration of this study and the emerging trends as highlighted in Chapter 5 of this study; speak volumes to the energy and foresight of academic librarians. More robust however were the current initiatives and future plans which came to the fore during interviews with twelve vibrant, passionate and deeply engaged academic librarians. The richness of this study is in part due to their being open to sharing the strengths and challenges and complexity of information literacy education. It is the combination of empirical research and the work and foresight of practitioners which will bring about the changes to ensure that the goals for information literacy are achieved in practice.
Title of Study: Conceptions and Practice of Information Literacy: Espoused Theories and Theories-in-Use

Principal Investigator: Paulette A Kerr

Co-Principal Investigator: Dr Ross J. Todd

Dear academic librarian,

You are invited to participate in a research study that is being conducted by Paulette Kerr, doctoral candidate in the Department of Library and Information Science at Rutgers University. The study is research towards a doctoral dissertation.

The purpose of the study is to investigate relationships between conceptual understandings (beliefs, values, guiding principles) of information literacy and concurrent professional practice in academic libraries. In Phase 1 of the study, mission statements and instructional/information literacy online tutorials from the web sites of a sample of 15 academic libraries, were examined. These libraries were selected as they were recognized in two online databases as providing exemplary information literacy instructional materials. Your institution’s information literacy instruction program was identified as exemplary.
In phase 2 of the study, telephone interviews will conducted with librarians with designated responsibility for information literacy/instruction programs and/or content developers of online tutorials in these libraries. You have been identified as the person responsible for information literacy/library instruction from your library’s web site, and are invited to participate in this Phase. It is hoped that interviews will assist in developing a clearer picture of information literacy practice and fill gaps in information not found online therefore provide a richer context to the data and will further understandings of information literacy in academic libraries.

At an agreed date and time, I will ask you a number of questions via a telephone interview that will last approximately 45 minutes. The questions relate to your library’s information literacy instruction program. If you agree, I will record the interview.

Please mark with your initials that you have read and understood the information above.

____________________________

This research is confidential. Data will include some information about you, such as your institution and your job title. This information will be kept confidential by limiting access to the data and keeping it SECURELY STORED IN the Center for International Scholarship in School Libraries, CISSL, at Rutgers University. The research team and the Institutional Review Board at Rutgers University are the only parties that will be allowed to see the data, except as required by law. In published reports and conference presentations, group results will be presented and illustrative quotations used will not enable your identification. All study data will be kept for three years at Rutgers University and interview tapes will then be destroyed.
Before you agree to participate, you should know enough about it to make an informed decision. If you have any questions, please feel free to contact Paulette Kerr via email at pakerr@rci.rutgers.edu. You should be satisfied with the answers before you agree to be interviewed as part of this research study.

Your participation in this study is voluntary and you may choose not to participate, and you may also choose not to answer any question in the interview schedule with which you are not comfortable. There are no costs involved in participating in this research. For participating you will receive no automatic compensation. The research presents minimal risk e.g. loss of time in participating in the interview. However the information you provide will lead to increased understanding of professional practice of information literacy in academic libraries.

Thank you for your time and contribution. If you have questions at any time about the study or the procedures, you may contact me c/o The School of Communication, Information and Library Studies, Rutgers University, 4 Huntington Street, New Brunswick, NJ 08901-1071 or email: pakerr@rci.rutgers.edu, or phone 732-425-0837, or you can contact my faculty Advisor, Dr. Ross Todd at the same address or telephone: 732-932-7500 ext 8223.

If you have any questions about your rights as a research subject, you may contact the Institutional Review Board Administrator at Rutgers at:
You will receive a copy of this consent form for your records.

Write your name below if you agree to participate and be interviewed.

___________________________________________

Sign below if you agree to be audio-taped during the interview

___________________________________________
APPENDIX B

INTERVIEW RECRUITMENT NOTICE
(Sent via email)

Research Title: Conceptions and Practice of Information Literacy: Espoused Theories and Theories-in-Use

Dear Academic Librarian [Librarian’s name to be inserted],

I am seeking your participation in a research study which examines relationships between conceptual/philosophical understandings (beliefs, values, guiding principles) of information literacy and professional practice in academic libraries. In Phase 1 of the study, I examine policy documents and instruction/information literacy online tutorials from the web sites of a sample of 15 academic libraries. These libraries were selected as they were recognized in two online databases as providing best practice information literacy instructional materials. Your institution’s information literacy instruction was identified as exemplary.

In Phase 2, I will conduct telephone interviews with librarians designated as coordinators of instruction/information literacy/teaching and learning. You were identified as the person responsible for information literacy/library instruction from your library’s website, and I am inviting you to participate in this Phase of the study. The interview will last approximately 45 minutes to take place at an agreed time convenient for you and will focus on questions relating to your library’s instruction program. If you would like the questions in advance to assist your preparation, this can be arranged.

It is hoped that the interviews will fill gaps in the information found online and provide a richer context to the data.
This study will provide an empirical basis for dialog to examine and evaluate information literacy practice. In addition it will offer a new model and framework for the evaluation of information literacy instruction tools. Given your institution’s important role in providing exemplary information literacy instruction resources and only 15 institutions are included, your contribution will enrich the study significantly and therefore your participation in the study is valuable.

If you agree I will send you the consent form/information sheet which is required by the Rutgers University Institutional Review Board.

Sincerely
Paulette A Kerr, Doctoral Candidate
Ross Todd, Associate Professor
School of Communication, Information and Library Studies
Rutgers University
New Brunswick, NJ 08901
The questions below represent possible items to be used in the semi-structured interview with academic librarians. Since the research study is being conducted in two phases, exact wording of some questions may be amended based on the patterns which will emerge from in-depth document analysis in phase 1 of the study, in which mission statements and online tutorials of academic libraries are compared and contrasted.

*Introductory script:*
Thank you for agreeing to be interviewed for this research study. The study which is part of my dissertation research, investigates relationships between conceptual understandings of information literacy and professional practice in academic libraries. In the first phase of the study, language and concepts in academic libraries’ official policy documents were compared with their actual practice, as evident in their online tutorials. The questions in this interview will focus on the mission and outcomes of your library’s information literacy program. I am hoping that the interview will provide a richer context to the online documents and help to develop a clearer picture of information literacy practice. You may choose not to answer a particular question if you feel uncomfortable about answering.

Since you agreed to be audio-taped in the consent form, I will be taping the interview.
[Please indicate your agreement/disagreement to be audio-taped] Alternate script if waiver of written consent is granted.

1. Share with me your role in instruction.

2. Your library’s mission is to support the university’s mission in teaching and research. How do you see the instruction/information literacy goals supporting the university’s mission?

3. How would you describe the library’s instruction or information literacy program?

4. What are the goals of the program?

5. How is the instruction mission of the library implemented?

6. What are the enablers to realizing the mission?

7. What if any are the barriers to implementing the mission and goals of information literacy?

8. According to the ACRL definition of information literacy, IL is on a continuum of information access to information use. How are these facets of IL realized in the library’s instruction program?

9. Share with me the vision behind the development of the [name of the tutorial] tutorial.

10. What was the process used in developing the tutorial?

11. What are the outcomes for students who engage in the library’s tutorials?

12. How do you measure those outcomes, or know that they are realized?

13. I notice that the library is developing a set of new tutorials, what is the vision behind these and what are the expected outcomes?
14. Can you discuss the strengths and weaknesses of existing information literacy tutorials?

15. [Name of the tutorial] is heavily focused on the teaching of skills and procedures. Are there other avenues for developing conceptual understandings towards the goals of the instruction program?

16. What would see as strengths of your program which enable you to achieve your mission?

Closing script

Thanks you participating in this study. Your time and information shared were appreciated.
APPENDIX D

Pilot Study: Results

Introduction to and step-by-step procedures taken in the Pilot Study are detailed in Chapter 3 of this study.

Table D1

*Verbatim statements labeled and categorized from University 4 Library documents.*

<table>
<thead>
<tr>
<th>Statements</th>
<th>Evidence (Document)</th>
<th>Outcomes/Process</th>
<th>Theory of Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Partnering with teaching faculty</td>
<td>Strategic Plan 2006-2011</td>
<td>Process: Instructional</td>
<td>Espoused</td>
</tr>
<tr>
<td>Integrate IL competencies in curriculum</td>
<td>Strategic Plan 2006-2011</td>
<td>Process: Instructional</td>
<td>Espoused</td>
</tr>
<tr>
<td>Prepare graduates Life long learners</td>
<td>Strategic Plan 2006-2011</td>
<td>Outcomes: knowledge-based</td>
<td>Espoused</td>
</tr>
<tr>
<td>Collaboration of teaching faculty and library faculty</td>
<td>Policies and other documents: Memo: Instructional Services</td>
<td>Process: Instructional</td>
<td>Espoused</td>
</tr>
<tr>
<td>Basic/Advanced classes in subject areas</td>
<td>Library Instruction: Info for Faculty</td>
<td>Process: mode of instruction</td>
<td>Espoused</td>
</tr>
<tr>
<td>Effective’, ‘true’ IL as collaboration</td>
<td>Instructional policy</td>
<td>Process: Instructional</td>
<td>Espoused</td>
</tr>
<tr>
<td>Preparing students for lifelong learning in disciplines</td>
<td>About Information Literacy; Instruction Policy; IL competencies</td>
<td>Outcome: knowledge</td>
<td>Espoused</td>
</tr>
<tr>
<td>Critical thinking; resource evaluation</td>
<td>About IL</td>
<td>Outcome: critical thinking</td>
<td>Espoused</td>
</tr>
<tr>
<td>Identifies key concepts for information need</td>
<td>About IL</td>
<td>Outcome: Skills</td>
<td>Espoused</td>
</tr>
<tr>
<td>Locate and critically evaluate information sources</td>
<td>Research Tutorial</td>
<td>Outcomes: skills; critical thinking</td>
<td>In-use</td>
</tr>
<tr>
<td>Identify types of information sources and understand the use of</td>
<td>Research Tutorial Module1</td>
<td>Outcomes: skills; knowledge</td>
<td>In-use</td>
</tr>
<tr>
<td>selecting sources</td>
<td></td>
<td></td>
<td>In-use</td>
</tr>
<tr>
<td>Understand the use of diff. web tools; web search strategies</td>
<td>Research Tutorial Module 5</td>
<td>Outcomes: skills; knowledge</td>
<td>In-use</td>
</tr>
<tr>
<td>Use databases and indexes</td>
<td>Research Tutorial Module 4</td>
<td>Outcomes: Skills</td>
<td>In-use</td>
</tr>
<tr>
<td>List ways to avoid plagiarism</td>
<td>Module 6</td>
<td>Outcomes: Skills</td>
<td>In-use</td>
</tr>
<tr>
<td>Recognize parts of a citation</td>
<td>Module 6</td>
<td>Outcomes: Skills</td>
<td>In-use</td>
</tr>
<tr>
<td>Using connectors e.g. Boolean operators</td>
<td>Module 2</td>
<td>Outcomes: skills; knowledge</td>
<td>In-use</td>
</tr>
<tr>
<td>Choosing, narrowing a topic; identify key terms</td>
<td>Module 2</td>
<td>Outcomes: skills</td>
<td>In-use</td>
</tr>
<tr>
<td>Library vs. web</td>
<td>Module 1</td>
<td>Outcomes: knowledge: critical thinking</td>
<td>In-use</td>
</tr>
</tbody>
</table>

The ‘statements’ are recorded in exact language as retrieved from the documents. Categories for outcomes/ processes were developed based on broad generalizations of information literacy instruction.
Table D2

*Categories of verbatim knowledge/skills-based outcome statements retrieved from Research Tutorial and instruction documents*

<table>
<thead>
<tr>
<th>Declarative/conceptual</th>
<th>Procedural/skills</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Understanding research processes</strong></td>
<td><strong>Research processes/methods</strong></td>
</tr>
<tr>
<td>- Understand keyword &amp; subject searching</td>
<td>- Using connectors e.g. Boolean</td>
</tr>
<tr>
<td>- Research as a messy process of construction</td>
<td>- Developing a research strategy</td>
</tr>
<tr>
<td>- Understand research myths</td>
<td>- Focusing on a topic</td>
</tr>
<tr>
<td>- Understand Boolean operators</td>
<td>- Reviews/refines search strategies</td>
</tr>
<tr>
<td></td>
<td>- Research skills</td>
</tr>
<tr>
<td></td>
<td>- Choosing/narrowing a topic</td>
</tr>
<tr>
<td></td>
<td>- Identifying key terms</td>
</tr>
<tr>
<td></td>
<td>- Identifies key concepts for info need</td>
</tr>
<tr>
<td></td>
<td>- Constructs effectively designed search strategies</td>
</tr>
<tr>
<td><strong>Information literacy</strong></td>
<td><strong>Information use</strong></td>
</tr>
<tr>
<td>- Use information effectively to accomplish a specific purpose</td>
<td></td>
</tr>
<tr>
<td><strong>Understanding information structure/organization</strong></td>
<td><strong>Knowledge construction</strong></td>
</tr>
<tr>
<td>- Understand the structure of indexes and databases</td>
<td>- Organizing research/writing</td>
</tr>
<tr>
<td>- Understand the organization of the Internet</td>
<td>- Developing ideas for writing</td>
</tr>
<tr>
<td>- Recognize that knowledge is organized into disciplines that influences the way info is accessed</td>
<td>- Incorporate selected information into knowledge base</td>
</tr>
<tr>
<td>- Know how information is formally and informally produced, organized and disseminated</td>
<td>- Developing a business plan</td>
</tr>
<tr>
<td><strong>Understand use of information resources</strong></td>
<td><strong>Locating info/Using information sources</strong></td>
</tr>
<tr>
<td>- Understand the use of the web as an info source</td>
<td>- Finding articles</td>
</tr>
<tr>
<td>- Understand popular vs. scholarly lit</td>
<td>- Using [online catalog] to find books and articles</td>
</tr>
<tr>
<td>- Understand library vs. web</td>
<td>- Distinguish between popular and scholarly journals</td>
</tr>
<tr>
<td>- Understand web information</td>
<td>- Identify major types of websites</td>
</tr>
<tr>
<td>- Understand the use of different web tools</td>
<td>- Use an index to identify articles</td>
</tr>
<tr>
<td>- Understand the value and differences of potential resources in a variety of formats</td>
<td>- Identify the location of books</td>
</tr>
<tr>
<td></td>
<td>- Read a call number</td>
</tr>
<tr>
<td></td>
<td>- Choose an index appropriate to information need</td>
</tr>
<tr>
<td><strong>Understand ethics of information use</strong></td>
<td><strong>Critical thinking</strong></td>
</tr>
<tr>
<td>- Understand the reasons for copyright</td>
<td>- Resource evaluation</td>
</tr>
<tr>
<td>- Recognize parts of a citation</td>
<td>- Critically evaluate information</td>
</tr>
<tr>
<td>- Why evaluate</td>
<td>- List ways to avoid plagiarism?</td>
</tr>
<tr>
<td>- Understand</td>
<td>- Demonstrates an understanding of intellectual property, copyright, and fair use of copyrighted material?</td>
</tr>
<tr>
<td></td>
<td>- Evaluation of Internet resources</td>
</tr>
<tr>
<td></td>
<td>- Evaluate web resources</td>
</tr>
<tr>
<td></td>
<td>- select and appropriate documentation style</td>
</tr>
</tbody>
</table>
Table D3:

*Claims developed from concepts in policy documents and instruction resources*

<table>
<thead>
<tr>
<th>Statements/Claims emerging from Policy Documents of Library 4 (Espoused Theories)</th>
<th>Statements/claims emerging from instruction curriculum documents including subject guides, online tutorials, of Library 4 (Theories-in-use)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Knowledge creation and knowledge use are integral to the University's mission.</td>
<td>1. Information literacy instruction is practiced through varied modes.</td>
</tr>
<tr>
<td>2. The University Library supports the University’s mission.</td>
<td>2. Instructional collaboration is practiced primarily through subject and course related guides.</td>
</tr>
<tr>
<td>3. Preparing students for life-long learning in various disciplines is a goal of the Library’s Instructional Program.</td>
<td>3. Curriculum integration is practiced in select and isolated cases.</td>
</tr>
<tr>
<td>4. Library instruction and information literacy instruction are presented as vehicles for developing lifelong learning.</td>
<td>4. The Library’s instruction program includes a range of skills-based and knowledge based learning outcomes.</td>
</tr>
<tr>
<td>5. Instructional collaboration is the basis for effective information literacy</td>
<td>5. Information Literacy is practiced on a continuum of locating and evaluating information sources.</td>
</tr>
<tr>
<td>6. The integration of information literacy competencies in the curriculum results in successful teaching.</td>
<td>6. Critical thinking is encouraged via the teaching of source evaluation and avoidance of plagiarism</td>
</tr>
<tr>
<td>7. Information literacy is defined and conceptualized on a continuum of finding and using information appropriately</td>
<td></td>
</tr>
<tr>
<td>8. Information literacy learning outcomes focus on a range of skills and competencies, procedural and conceptual.</td>
<td></td>
</tr>
<tr>
<td>9. Varied instructional modes and models are essential for effective instruction</td>
<td></td>
</tr>
<tr>
<td>10. Outcomes for information literacy instruction guided by the ACRL Standards</td>
<td></td>
</tr>
</tbody>
</table>

Full descriptions of claims listed in Table D3 were developed and were discussed in relation to initial findings in the literature.
Discussion of Claims developed from preliminary analysis of official documents of University 4 Library

Documents analyzed:
University’s Mission Statement; Library’s Mission Statement; Instruction Policy; Information Literacy Outcomes; Library’s Strategic Plan 2006-2011

Curricula items:
Research tutorial; Short eCourse; Guides; English Course122; Plagiarism tutorial

Statements/Claims emerging from Policy Documents (Espoused Theories)

1. Knowledge creation, knowledge use as integral to the University’s mission.

The University presents a three-fold mission of instruction, research and public service. Analysis of the mission of statement reveals that outcomes of knowledge creation and the application of and use of this knowledge towards specific purposes are integral to all aspects of the mission. “Each component of the university’s mission reinforces and supports the other two. For example, research creates the new knowledge so necessary to support quality instruction and innovative public service.” (University Libraries, 2008). Further, the university’s learning goals place emphasis on the development of a range of competencies including knowledge and understanding in diverse subject areas. The goals also promote intellectual and communication competencies including critical thinking and scientific inquiry (University Learning Goals, 2008).
2. The University Library supports the University mission

Within this framework of understanding, knowledge and skills-based outcomes of the University, the Library espouses the creation of a “library environment that enriches the academic life of the university for student learning”. Creation of a rich virtual environment with significant information resources, services and tools to support research and learning and easy and powerful navigation and finding tools will integrate the libraries into the university’s research and learning programs (University Library, 2006). The university’s mission is presented as foundational to the programs of the library. Through its mission and vision statements, the library articulates “support and enrichment” of the University’s three fold mission of instruction, research and public service. “The libraries aspire to provide outstanding resources and services that advance research and learning”

3. Preparing students for life -long learning in various disciplines is a goal of the Library’s Instructional Program.

Integrally associated with supporting the University’s mission is the instructional goal of the library to “ensure that students graduate with the skills for their careers and for lifelong learning” (Strategic Plan). According to the Libraries Information Literacy Policy, librarians have a joint role with teaching faculty and administrators to prepare students for lifelong learning in their disciplines (University Library, 2007).

4. Library instruction and information literacy instruction are presented as vehicles for developing lifelong learning.

“Library research, information seeking and information management skills are important components of information literacy necessary for academic success, for competing in the
workplace, for lifelong learning and for everyday life. … As an integral part of the research and instructional programs of the university, librarians of the University Libraries provide Library Instruction and Tutorials for students, faculty and staff that facilitate the development of an information literate community and that promote the Information Literacy Standards for Higher Education developed by the Association of College and Research Libraries. The University Libraries have a commitment to research and development of new modalities for facilitating information literacy” (University Library, 2003).

5. Instructional collaboration is the basis for effective information literacy
A key objective of the Library’s Strategic Plan is to “address information competencies through material, services and programs in partnership with teaching faculty.” All policy documents confirm that instructional collaboration between library faculty and teaching faculty is the primary mechanism advocated by the library for developing information competencies. With themes of focus and integration, the Strategic Plan states that by “partnering with the teaching faculty, information literacy skills will be integrated into the curriculum to ensure that students graduate with the skills for their careers and lifelong learning” (2006). The Instructional Services Policy declares that the “key to successful development of information literacy skills is the collaboration of teaching faculty and library faculty in supporting university-wide learning goals” (University Library, 2003). Further, “library instruction is most effective when integrated into the curriculum; related to a specific class and when library and classroom faculty confer on the objectives, goals and design of course assignments.”

Instructional collaboration and curriculum integration are espoused by the University Library as the foundation of true information literacy. Instructional collaboration is proposed in 66% of all statements detailing the process of information literacy instruction. Teaching faculty is encouraged to work with the library in collaborative
projects and the library’s Strategic Plan proposes a University-wide information literacy program with instructional collaboration as its foundation. These statements reflect the philosophy of information literacy.

7. The integration of information literacy competencies in the curriculum results in successful teaching.

University 4 librarians believe that the “most successful instruction classes on any level are those which are tailored to specific assignments and curriculum.”

8. Information literacy is defined and conceptualized on a continuum of finding and using information appropriately.

Using the ALA definition of the information literate person as a guide, the Libraries Information Policy states that “information literate students can find, evaluate and use information with confidence”.

9. Information literacy learning outcomes focus on a range of skills and competencies, procedural and conceptual.

“Information literacy brings together new and old concepts: critical thinking, research methods, technological savvy, resource evaluation, active reading.

10. Varied instructional modes and models are essential for effective instruction.

The library espouses the use of “various instructional modes and models and collaboration with faculty for the design of appropriate instructional techniques and materials (University Library, 2003). The use of a range of instructional formats ranging from face-to-face instruction handouts, class guides, online tutorials, and workshops.
Statements/claims emerging from the curriculum (Theories-in-use)

1. *Information literacy instruction is practiced through varied modes.*

The instruction program of the library is realized through library developed instruction sessions, stand alone online tutorials, an e-course, online subject guides, course related guides and course related instruction sessions.

2. *Instructional collaboration is practiced primarily through subject and course related guides*

Instructional collaboration as the main mechanism for developing competencies including life long learning in the disciplines, is not realized equally across the library’s instruction program. A few isolated instances of collaborative ventures have been identified. English 122 is identified as one effort at instructional collaboration. The flagship online research tutorial is promoted primarily as self-paced stand alone instruction. Collaborative and curriculum related instruction projects using the research tutorial have not been identified. Instructional collaboration and integration of information competencies in the curriculum is emphasized and practiced through varied instructional subject and course guides.

3. *The Library’s instruction program includes a range of skills-based and knowledge-based learning outcomes.*

- Varied learning outcomes are emphasized
- Locating and evaluating information sources.
• Critical thinking is presented primarily as evaluation of sources and ethical use of information sources
• Procedural vs. conceptual
• Knowledge development competencies are realized through the teaching of the structure of information.
• Information use is relegated to the domain of teaching faculty.

4. Information Literacy is practiced on a continuum of locating and evaluating information sources.
• The research tutorial defines information literacy as knowing when and how to find information
• Modules in the tutorial emphasize understanding information structure, finding books and articles information, using information sources and citing sources.
• Information use is presented as outside the responsibility of the library.

Reflective narrative and summary

The pilot study was conducted primarily to aid the selection of appropriate research methodology as well as to determine types of institutional policy documents and instructional material to be studied for the proposed research. The process clarified a qualitative methodology with a grounded approach as appropriate and sound to provide answers on the relationships between espoused theories and theories-in-use of the complex phenomenon of information literacy. Since the main purpose of the proposed research is to provide richer understandings rather than test an existing claim, this approach provided a clearer picture of the alignment of philosophy and theory with practice. Rigorous in-depth analysis of concepts in official policy documents and online
tutorials of two academic institutions provided partial answers to a number of research questions. Predominant conceptions of the institution were identified. The practice of information literacy as realized in the online tutorial was also clarified. By comparing policy language with documents that show instruction in action, different relationships were highlighted.

Statements and claims which emerged from the analysis of policy documents of one academic library suggest espoused theories which include being guided by the ACRL Information Literacy Standards (ALA, 2000), the integral role of information literacy in the institution’s curriculum, preparation of students to be life long learners in disciplines, instructional goals of knowledge building, enhancement of critical thinking and the essential role collaborative instruction effective information literacy. Information literacy is defined on a continuum of information access to information use.

Themes which emerged from the analysis of the various modes of practice including the comprehensive research tutorial, suggest varying approaches to the practice of information literacy. IL is practiced on a continuum of locating and evaluating information sources with information use operationalized as ethical approaches to sources. The library adopts a range of conceptual and skills approaches with greater emphasis on techniques rather than on knowledge building and conceptual understandings. Critical thinking skills are encouraged primarily via evaluation of information sources. There is little indication of deep learning towards knowledge creation. These are detailed in Table D2.

The analysis of the data implies a few connections and major gaps between the espoused theories and theories in use of information literacy in the academic institution.
The library’s espoused theories on information literacy are explicit, not so explicit are the theories-in-use. The library’s mission supports knowledge creation, and although modules in the research tutorial attempt to address conceptual outcomes, a skills approach predominates. There is an emphasis on locating sources. The focus on finding and accessing is incongruent with the espoused theory of lifelong learning in the disciplines. The research tutorial does not appear to support disciplinary or collaborative approaches to teaching although these are espoused values of the institution. The research tutorial promotes a set of generic skills not contextualized to the curriculum. Further, critical thinking, although an espoused value is not enhanced beyond strategies to avoid plagiarism and the evaluation of sources.
REFERENCES


Aydelott, K. (2007). Using the ACRL Information Literacy Competency Standards for


Bruce, C. & Candy, P. (2000). Information literacy programs: People, politics and potential. In C. Bruce and P Candy (Eds.), *Information literacy around the world: Advances in programs and research* (pp.3-10). New South Wales, Australia: Centre for Information Studies, Charles Stuart University.


Candy, P. (2000). Mining in Cyberia: Researching information literacy for the digital age. In C. Bruce and P Candy (Eds.), *Information literacy around the world: Advances in programs and research* (pp.139-151). New South Wales, Australia: Centre for Information Studies, Charles Stuart University.


Cheuk, B. (2000). Exploring information literacy in the workplace: a process approach. In C. Bruce and P. Candy (Eds.), *Information literacy around the world: Advances in programs and research* (pp.177-191). New South Wales, Australia: Centre for Information Studies, Charles Stuart University.


interview-based study. Paper presented at Librarians’ Information Literacy Annual Conference (LILAC), Liverpool, United Kingdom.


Graf, E. (2000). *Designing a computer tutorial to correct a common student...*


Iannuzzi, P. (1999). We are teaching, but are they learning: Accountability, productivity and assessment. *Journal of Academic Librarianship, 25*, 304-305.


Kapitzke, C. (2003a) Information literacy: A positivist epistemology and a politics of


Kuhlthau, C. (1993). Implementing a process approach to information skills: A study


to move toward critical information literacy. Portal: Libraries and the Academy, 5, 297-311.


Sundin, O. (2005). Conflicting approaches to user information seeking education in


Todd, R. (2000b). A theory of information literacy: In-formation and outward looking. In C. Bruce and P Candy (Eds.), *Information literacy around the world: Advances in programs and research* (pp.163-165). New South Wales, Australia: Centre for Information Studies, Charles Stuart University.


http://portal.unesco.org


CURRICULUM VITAE

EDUCATION

2010 Ph.D. School of Communication and Information
Rutgers, the State University of New Jersey, New Brunswick, NJ

1992 MA History University of the West Indies, (UWI) Mona, Jamaica

1984 Post Graduate Diploma in Library Studies, UWI Mona

1980 BA History and Sociology UWI, Mona

EMPLOYMENT EXPERIENCE

2007-2010 Teaching Assistant/Instructor, MLIS Program, Rutgers University

2008-2010 Part-time Reference Librarian, Alexander Library, Rutgers University

2001-2005 Information Literacy Coordinator, University of the West Indies, Mona

1986-2001 Reference and Instruction Librarian, University of the West Indies, Mona

1984-1986 Senior Librarian, National Library of Jamaica

PUBLICATIONS

