
This study measures the impact of authenticity – the operation of one’s true self in one’s daily activities – on student engagement and learning in one specific library context, information literacy instruction for English 105 classes at the House Undergraduate Library at the University of North Carolina at Chapel Hill. A classroom modeling exercise was developed to help students choose authentic topics of interest. Students then filled out a questionnaire to assess whether choosing authentic topics led to (a) increased engagement and (b) increased learning according to ACRL information literacy standards. The data collected shows that the exercise successfully helped students choose authentic topics and that these students’ motivation to learn was higher than students in the control group. Students in the experimental group also on average rated their learning of ACRL information literacy standards higher than students in the control group. The study provides initial evidence for the positive impact authenticity can have on student motivation and learning in the context of information literacy instruction.

Headings:

Student engagement – Motivation

Authenticity – Philosophy – Psychology

Academic libraries– Information literacy – Library instruction
AUTHENTIC ENGAGEMENT: ASSESSING THE EFFECTS OF AUTHENTICITY ON STUDENT ENGAGEMENT AND INFORMATION LITERACY IN ACADEMIC LIBRARY INSTRUCTION

by

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Introduction and Literature Review

A central problem facing educators is how to motivate one’s students to want to learn. Student motivation is an important focus for educators because motivation – “the level of enthusiasm and the degree to which students invest attention and effort in learning” (Barkley, 2010, p. 9) – bears directly on student learning. For, as Pascarella and Terenzini note, “the greater the student’s involvement or engagement in academic work […] the greater his or her level of knowledge acquisition and general cognitive development” (1991, p. 32). Put simply, increased engagement leads to greater knowledge and skill acquisition in our students (Elliot et al., 2000, p. 349).

One method of increasing student engagement in the classroom is increasing student autonomy. “To be autonomous,” writes Edward Deci, a leading contemporary empirical psychologist studying human motivation, “means to act in accordance with one’s self … [w]hen autonomous, people are fully willing to do what they are doing, and they embrace the activity with a sense of interest and commitment. Their actions emanate from their true sense of self, so they are being authentic … To be authentic is to be true to one’s self” (Deci and Flaste, 1995, pp. 2-4). Thus, an implication of Deci’s work is that if we as educators want to motivate our students, we ought to be interested in facilitating students’ authenticity in the classroom. In order to do so, it is worth clarifying the concept of authenticity and its role in human functioning.
Authenticity

The psychological construct of authenticity has been directly tied to human well-being and increased meaning in life at least since the Ancient Greek philosophers began to ask Socrates’ question – “How should one live” – over two-thousand years ago (Williams, 1984, p. 1; Kernis and Goldman, 2006, p. 284; Schlegel et al, 2009, p. 473; Kreber and Klampfleitner, 2012, pp. 34-35). Indeed, for Greek moralists such as Aristotle, the flourishing human life was a self-actualized one, in which an individual performs actions that reflect one’s true calling as a human being (Kernis and Goldman, 2006, p. 284; Schlegel et al, 2009, p. 473, 486). In this picture of the good life, authentic activities “do not have happiness or pleasure as their desired end; instead, pleasure is a consequence of a life in which one successfully manages to perform these activities well” (Kernis and Goldman, 2006, p. 285). Thus, in these theories, an authentic life is taken to be fundamental. It is the core component of human flourishing and the basis from which all other goods derive.

The primacy of authenticity’s role for human happiness was later, in the 19th century, promulgated by proto-existential philosophers such as Kierkegaard and Nietzsche, and then further developed by 20th century existentialists such as Heidegger and Sartre (Kernis and Goldman, 2006, p. 285; Schlegel et al, 2009, p. 473). These philosophers had a major impact on a core group of Humanistic and Existential Psychologists, such as Karen Horney (1991), Rollo May (1981), Carl Rogers, (1961) and Irvin Yalom (1980), who shared the beliefs of their philosophical forbearers, rather than continuing the reigning Freudian psychoanalytic orthodoxy
favored by their professional colleagues. The extension of these philosophical insights into the clinical setting and therapeutic encounter created a fundamentally new way to think about human functioning and well-being in the psychological realm (Wood et al., 2008, p. 385; Schlegel et al., 2009, p. 473; Kernis and Goldman, 2006; Rogers, 1961, p. 166; Yalom, 1980; Grogan 2013).

According to one contemporary researcher, these humanistic and existential psychologists, like those in the philosophical tradition from Aristotle to Nietzsche, “define the fundamental human good in terms of the principle of authenticity” and “emphasize the responsibility that individuals have to be true to themselves and the fulfillment of their unique potential for being” (Medlock, 2012, p. 39). This point is echoed in a recent empirical study conducted by Wood et al, who noted that “in many mainstream counseling psychology perspectives, authenticity is seen as the most fundamental aspect of well-being. These researchers see authenticity not simply as an aspect or precursor to well-being, but rather the very essence of well-being and healthy functioning” (2008, p. 386). They then go on to explicitly mention Horney, May, Rogers, and Yalom as representatives of this tradition.

Indeed, in providing his own answer to Socrates’ question, Carl Rogers drew explicitly from this tradition, writing that “The best way I can state this aim of life, as I see it coming to light in my relationship with my clients, is to use the words of Søren Kierkegaard – “to be that self which one truly is” (Rogers, 1961, p. 166). Similarly, Yalom argues that one achieves happiness by “plunging oneself into the “true” vocation of the human being, which, as Kierkegaard said, “is to will to be oneself” (Yalom, 1980, 285), and cites approvingly the Hasidic rabbi, Susya, “who
shortly before his death, said, “When I get to heaven they will not ask me, ‘Why were you not Moses?’ Instead, they will ask ‘Why were you not Susya? Why did you not become what only you could become’?” (Yalom, 1980, p. 279; see also Horney, 1991, pp. 17-18).

In more recent years, the authenticity construct has begun to draw attention from contemporary empirical research psychologists in the social sciences. These researchers, drawing on the philosophical and existential psychological tradition, have sought to provide an empirical basis for the importance of authenticity for human well-being. For example, a 2003 study by the psychologist Michael H. Kernis, following Deci and Ryan (1995), posits that secure self-esteem is correlated with personal authenticity. He writes that “high self-esteem develops when one’s actions are self-determined and congruent with one’s inner, core self, rather than a reflection of externally imposed or internally based demands. Activities are chosen and goals are undertaken because they are important to the individual” (Kernis, 2003, p. 8). An authentic way of being is correlated with self-esteem and, in turn, increased feelings of personal worth which are not contingent on others’ evaluations. For authentic individuals, the research indicates, esteem comes from within.

In a later article, Kernis presents research evidence that indicates “authenticity relates to adaptive functioning” in several personal and interpersonal domains, such as “problem-focused coping strategies, mindfulness, positive role functioning, healthy aspects of self-concept structure, hedonic and eudemonic well-being, authentic goal pursuits, and low verbal defensiveness” (Kernis and Goldman, 2006, p. 344). A 2008 study by Wood et al. develops an “Authenticity Scale,” which is used to “provide the
first direct test of several theoretical models that view authenticity as integral to well-being” (p. 385). Furthermore, Schlegel et al. presents evidence in their 2009 study that authentic living leads to increased meaning in one’s activities and in one’s life more generally (p. 485).

**Authentic Learning**

Given the importance of authenticity to human well-being in general, it is worth thinking about how to apply authentic learning to the classroom setting. As Deci and Flaste point out, “autonomy and authenticity, as opposed to control and alienation, are relevant in all aspects of life” (1995, p. 2). Within the psychological tradition, Carl Rogers stands out as the theorist who has written the most about the application of humanistic psychological principles to the philosophy of education and learning. Indeed, Rogers devoted several essays and a book collection to discussing the impact of his client-centered therapy on education (Rogers 1961; Rogers 1969).

For Rogers, learning takes place on a continuum of meaning for the learner. On one end of the spectrum is learning that has no personal meaning to the student learner – as in the rote learning of nonsense syllables. This kind of insignificant learning, for Rogers, is “likely to be forgotten quickly” (Rogers, 1969, p. 3). Rogers theorizes that much of what counts as learning in the classroom bears a close resemblance to this kind of learning, since “nearly every student finds that large portions of his curriculum are for him, meaningless. Thus education becomes the futile attempt to learn material which has no personal meaning” (Rogers, 1969, p. 4).

In contrast, a key concept for Rogers is that of *significant learning*, that is, learning that has meaning and personal relevance to the learner (Rogers, 1969, pp. 3-
“More precisely,” Rogers states, significant learning “has a quality of personal involvement … even when the impetus or stimulus comes from the outside, the sense of discovery, of reaching out, of grasping and comprehending, comes from within … [The learner] knows whether it is meeting his need, whether it leads toward what he wants to know … The locus of evaluation, we might say, resides definitely in the learner” (Rogers, 1969, p. 5, italics in original). Significant learning takes place for the student, then, if and only if the student attaches some personal meaning to the subject of inquiry, and wants to learn about the subject matter. Furthermore, significant learning is autonomous learning: it is authentic, in the sense specified by Edward Deci, because it originates in the student’s own self. This personal meaning and sense of caring about what is learned establishes its relevance to the learner (Patterson, 1977, pp. 301-302).

It is from within this frame of reference that we can understand Rogers’s focus in his important article in the philosophy of education, “Questions I Would Ask Myself if I Were a Teacher,” with engaging student’s interests in the classroom. One of the questions Rogers says he would most focus on were he a facilitator of learning is, “Can I discover the interests of each individual and permit him or her to follow those interests? He goes on to ask, “Can I be creative in putting them in touch with people, experiences, books – resources of all kinds – which stimulate their curiosity and feed their interests?” (Rogers, 1973, p. 6). Thus, we see two main components coming out of Rogers’s views of education:

1. **Authentic Learning:** The need for the facilitator of learning to find out students’ interests in the classroom and allow them to pursue those interests.
2. **Providing of Resources:** The role of the facilitator of learning in providing students with the resources and materials necessary for them to learn about their interests.

The pedagogical need to discover student’s interests, is, for Rogers, due in part to his hypothesis that significant learning – authentic earning based on one’s true interests – leads to more *lasting* learning (Rogers, 1969, p. 5), because that learning carries personal meaning for the learner. In addition, this practice helps support students’ autonomy more broadly by demonstrating to students that the instructor values the students as individuals. This respect for students’ freedom of choice further creates the conditions for students to be self-determining in the classroom (Rogers, 1973, p. 2; Assor *et. al* (2002); Stefanou *et. al.*, 2004).

The importance of authenticity on learning also receives support in the recent literature in educational psychology. For example, according to Assor *et. al* (2002), teachers who support students’ autonomy, specifically with regard to helping them “realize their personal goals and interests” are “particularly important in terms of their effects on feelings toward learning and cognitive and behavioral engagement in learning” (272).

Much of the literature on autonomy support in educational psychology (for an overview see Shunk and Zimmerman, 2009; Stefanou *et. al.*, 2004)) has stressed the importance for student motivation of providing students with autonomous choices and autonomous control over their learning. Assor *et. al.* are unique in the current literature, however, in recognizing the importance of providing students with choices that are deemed by the students to be *authentic*. Indeed, they write that “being able to
choose one’s schoolwork may not be so important to students because none of the choices seems related to their personal goals or interests” (273). In other words, it is not sufficient merely to give students choices. The choices must be authentically meaningful. In this, Assor et. al. follow Rogers’s views of the importance of authenticity for student learning. They write that the “primary task of the teacher is to try to understand their students’ authentic interests and goals, and then help students to understand the connection between their personal goals and interests and schoolwork. In addition, teachers may also find or develop tasks that fit their students’ interests. When students do not have clear personal interests and goals, teachers may assist them in developing such interests and goals” (273).

Additionally, according to Elliot et al. “[th]e interest students show in an activity or in an area of knowledge predicts how much they will attend to it and how well they process, comprehend, and remember it (2000, p. 349). Furthermore, according to Elliot et al., “the tasks students find more interesting are the ones that provide opportunities to satisfy their needs, challenge skills they have and care about developing, and demand that they exercise capacities that are important to them” (2000, p. 349).

This is not surprising, given the long tradition – from philosophy, to humanistic psychology, to contemporary empirical theories of human behavior – that individuals find increased meaning from authentic activity. Thus, I believe that one challenge of this literature is to (1) help students develop topics that authentically interest them, and (2) help students find the resources they need to satisfy their interests.
**Problem Statement**

Although I believe any educator can benefit from increasing student authenticity, it is interesting to note that librarians are actually uniquely situated to make good on Rogers’s challenge. For, not only does librarians’ primary expertise consist in providing students with educational resources, but also many librarians are in a position to directly influence the topics students choose to write about. For example, instructional librarians, within the context of a library instruction session, can (1) discover student’s interests and encourage them to pursue their interests in their research and (2) provide students with the resources and skills needed to search for, and locate materials on, the topics that interest them.¹

This study measures the impact of authenticity on student engagement and learning in one specific library context, information literacy instruction for English 105 classes at the House Undergraduate Library at the University of North Carolina at Chapel Hill. English 105 is a required course for all UNC Chapel Hill freshmen, and 105 instructors typically bring their students into the library for instruction at least once per semester. One of the main information literacy and research skills House Undergraduate Library instructors are asked to teach students by English 105 faculty is how to develop an appropriate topic for their research and then to help students find the resources they need to write papers on their topics. My idea, based on the

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¹ Note that this is also possible during a standard reference interview at the desk.
literature review outlined above, is to develop a classroom exercise to help students choose authentic topics of interest that they could then research using UNC Library resources. I will then measure whether or not authentic learning leads to (a) an increase in student engagement and (b) an increase in student learning (as defined by certain ACRL Student Learning Outcomes).

Following Kernis and Kernis and Goldman, authenticity was defined as the unobstructed operation of one’s true, or core, self in one’s daily enterprise (Kernis, 2003, p. 13; Kernis and Goldman, 2006, p. 294). Since one’s “true” or “core” self can be difficult to define, and hard to know, (Kreber, C., & Klampfleitner, M., 2012; Schlegel et al, 2009) I will, following Schelegel et al, understand authenticity in terms of the “true self concept.” The true self-concept may be defined as a cognitive schema representing those aspects of the self that are considered, by the person, to be most emblematic of his or her true nature (Schelegel et al, 2009, p. 473). Thus, an authentic topic is a topic that is considered by the student to reflect the student’s own true interests.

The research of Schelegel et al. demonstrates that when the true self-concept is in operation, an individual’s experience is deemed to be meaningful (Schelegel et al, 2009, p. 473). As they put it, the extension of the true self-concept to experiences imbues those experiences with feelings of meaningfulness, the simple activation of the true-self concept itself should be sufficient to elicit a corresponding increase in meaning in life” (Schelegel et al, 2009, p. 486). Put simply, if an educator can create the conditions in which students can be their true selves in their schoolwork, one should see an increase in meaning, and in turn, student motivation, engagement,

² http://www.ala.org/acrl/standards/informationliteracycompetency
and learning.

The extensive literature, both in the philosophical tradition, in humanistic psychology, and in contemporary psychological research on the topic, supports this contention. My hypothesis is that authentic topics will lead to *significant learning* for the student – both in terms of increased *engagement* with their project, and to increased *learning* – because that learning, driven by the core human value of authenticity, is meaningful and personally significant to the student.
Methods

Modeling Authentic Topic Selection

A classroom exercise was needed to help students select and develop authentic topics to research. My method for teaching students how to choose authentic topics was to model this activity for the students. This method seemed intuitively plausible, based on my own teaching experience, and from discussions with other library instructors. The effectiveness of this method also received support from the educational psychology literature. According to Elliot et al., educators should, “when possible, allow students to select topics that they are curious about” because this will give them “the freedom and the direction to explore for themselves” (2000, 349). This strategy, of course, will satisfy Rogers’s criterion of allowing students the freedom to pursue their own interests (Rogers, 1973, p. 6) which should in turn promote significant learning that comes from within the student’s own internal locus of evaluation. This, too, will satisfy the autonomy condition set out by Deci and Ryan for a perceived internal locus of causality (1995).

The best way to teach students to do this, according to Elliot et al., is to provide an effective model for students. They write that the instructor ought to “[t]ell students the things you [the instructor] are curious about and model some of the resourceful behavior that curious people use to solve problems” (2000, 349).
This was the approach I took for the study. I designed a keyword modeling exercise (see Appendix B) where I demonstrated for students in the classroom how I would go about choosing an authentic topic (based on my own personal interests) relative to, and that fit with, the assignment they were working on.

At the House Undergraduate Library, library instructors work with the English 105 instructor prior to the session to design learning outcomes for the instruction session based on the research skills the students will need to successfully complete the assignment they are working on when they come into the library. I selected random clusters of classes coming into the library (where these classes were at the stages of topic selection and searching for resources on their topics) and created an experimental design to measure the effects of authenticity on student engagement and ACRL Information Literacy Learning Outcomes.

The participants in the study were UNC-Chapel Hill English 105 students who were brought to the House Undergraduate Library for library instruction by their faculty instructors. I measured the effects of authentic learning on eight different classes: four in the experimental group and four in the baseline group.³ The division of classes into the experimental and control group was done in random clusters as courses came to the library for instruction. My procedures as the instructor of these sessions were as follows:

I modeled for one group of English 105 students (the experimental/treatment group) how to choose a topic that authentically engaged their interests and how to use the library resources to find appropriate sources for their paper topic. A second group

³ I also conducted an initial pilot study that fit all the criteria described here to see, initially, if the modeling exercise proved to be effective. The results of that study were consistent with the outcomes of the research presented in this paper.
(the baseline/control group) received “standard” library instruction, where the library instructor modeled how to search library databases with a generic topic that fit their assignment. Students then completed a 15-item questionnaire designed to measure engagement and learning (see Appendix A) at the end of class. Results between the two groups were compared and analyzed with an Independent samples T-test (see Results and Discussion section below).

The structure of the treatment sessions were as follows.4

I. A Brief Introduction to the Session

In the first part of the library session, which typically lasted just a couple minutes, I, as the instructor of the session, introduced myself; welcomed students to the library; demonstrated to students how to contact a librarian online at (www.lib.unc.edu); and gave a brief outline and overview of the session.

II. Part one of the Treatment: Modeling Choosing a Topic

In this part of the session I modeled for students how to choose a topic based on their own interests by showing them, relative to the constraints of their assignment, how I might choose a topic that interests me. Often in this portion of the session, prior to demonstrating my own topic, I asked students what topics they were thinking about working on to get a feel for their selections.

I used a keyword exercise handout (see Appendix B) to write down several of my interests and related terms that I might be able to search relative to those interests. I might, for example (depending on the specific content of the assignment) write down several of my personal interests as headings:

4 The exact flow, content, and subject matter of each session, of course, varied slightly with each class. But this format was followed in each group.
e.g., "Creative Writing," "Tennis," "Music," or "Fashion."

I then brainstormed further keywords and synonyms under each heading, depending on the general topic about which students were assigned to write about. For example, students in English 105 are often given the choice to write about any topic concerning Memory and the Brain. I would now show the students how I brainstormed with my keyword exercise further things to research under each topic that would have to do with memory and the brain. Under "Music" I might write down "Piano" because that's what I'm interested in regarding music. I might, further, write down "muscle memory," since this is a possible topic I can research regarding one of my interests (the piano), relative to the context of the assignment (memory and the brain).

This can also be done for each of my concept headings. The purpose of this exercise was to give students a variety of possible keywords based on their interests that they could then search in the UNC library databases.5

III. Part two of the treatment: Searching the UNC databases

In this next part of the class, I modeled how, based on my topic selection keyword exercise, I searched the main UNC articles database (Articles +).6 The goal here was to show students how to take their keywords and use the information available in library resources to find articles and further hone in on a topic to find scholarly resources (Rogers’s second criterion).

For example, when I typed in "Piano Muscle Memory" into UNC's "Articles

5 I observed that many students changed their initial topics at this stage. Some students, however, already seemed to have been choosing topics that interested them. In this case, students could use the keyword exercise to brainstorm concepts related to their topic, as normal.

6 http://www.lib.unc.edu/index.html?searchtab=article
"database, and limited my search to scholarly articles, I saw that there is an article called “The Psychophysiology of Flow During Piano Playing” (de Manzano, 2010). This article is interesting to me personally because it lines up with one of my authentic interests (piano playing) and also with another personal interest, flow psychology. Thus, now my topic was something like, “What is going on in the brain when people experience flow while playing the piano?” This topic deals with ‘memory and the brain’ and the choice of the topic was driven by an authentic interest of the learner. I have now modeled how to take a generic authentic interest (Playing the piano) and use that to narrow down a very specific, but researchable topic. I was also, then, able to conduct some related searches, about jazz piano and what is going on in the brain during improvisation, which further related to my interests. I was thus able to approach my topic from a variety of authentic interests.

IV. Student Active Learning Keyword Activity

In the next part of the instruction session, students filled in their own interests in their keyword exercise. I gave the students approximately five minutes to do this. I often invited students to share with the class how they filled in their exercise. This allowed other students to see how their peers, and not just the library instructor, completed the exercise.

V. Students searched databases and further honed their topics

The rest of the sessions were dedicated to the students searching the library databases based on their keywords. I walked around and attempted to speak with each student individually to help him or her hone their topics and search the library databases.
VI. After students completed the session, they were asked to complete an online questionnaire about their experiences.

I used Qualtrics software that allowed students to fill out the questionnaire online at their computer station at the end of the session. The questionnaire took the students about five minutes.

The structure of the baseline group instruction session was similar, but different from the experimental group, in important ways:

I. A Brief Introduction to the Session

In the first part of the library session, which typically lasted just a couple minutes, I, as the instructor of the session, introduced myself; welcomed students to the library; demonstrated to students how to contact a librarian online at (www.lib.unc.edu); and gave a brief outline and overview of the session. This was the same in both the experimental and control groups.

II. Modeling Choosing a Topic

In this part of the session I modeled for students how to choose a topic by using a more generic topic, e.g., from a list of possible topics assigned by the instructor. If no such list was available I simply chose a topic that fit the assignment, whether or not it interested me. For, example, if the general topic of the paper was “Memory and the Brain” instructors have, in the past, assigned “Alzheimer's and Memory” as a possible topic. I then used this as my demo topic for searching and in showing students how to find keywords (e.g., “dementia”) to search for their topic.

The purpose of this exercise was, again, to give students a variety of possible keywords related to their topic that they could then search in the UNC library
databases. Furthermore, separating out their concepts also allowed students to conduct different searches about each concept with which they were working, so they could use their sources in a sophisticated manner, and to provide evidence for the various points that they need to make in their paper. This way, students sources could cover different aspects of their research, and avoid redundancy.

Part III. Searching the UNC databases

In this next part of the class, I demonstrated how, based on my topic selection keyword exercise, I would use those keywords to effectively search the UNC databases. The goal here was to show how to take keywords and then use the information available to you in library resources to find articles and further narrow down a topic to find scholarly resources.

For example, if I typed in “Alzheimer's” and “memory” into UNC's Articles + database, and limit my search to scholarly articles, there are articles about a variety of different topics that I might choose from. There are articles about Alzheimer’s and working memory etc. So I might be able to write about Alzheimer’s and its effects on working memory as my topic. This topic deals with 'memory and the brain and the student now has been shown how to choose a topic and how to use a database to find that topic.

IV. Student Active Learning Keyword Activity

In the next part of the instruction session, students filled in their own topics and keywords in their keyword exercise. They were given approximately five minutes to do this. I then requested that a few students share what they filled in about their own topics with the larger group. This allowed other students to see how their peers
completed their exercise.

V. **Students search databases and further hone their topics**

The rest of the session was dedicated to the students searching the library databases based on their keywords. I spoke to students individually to help them hone their topics and search the library databases for articles.

VI. **After students complete the session, they will be asked to complete an online questionnaire about their experiences.**

This part of the session was identical to that of the experimental group. The students filled out a 15-item questionnaire online at their computers.

**Measuring Engagement and ACRL Information Literacy Outcomes**

I used a questionnaire with 15 items in order to measure authentic topic selection, student engagement, and ACRL Information Literacy outcomes. For the authentic topics questions, I adapted questions from the “Authenticity Scale” in Wood *et. al* (2008) that were designed to measure the effects of authenticity on happiness. The questions were adapted for the purposes of this paper to measure whether or not the keyword exercise, in fact, led students in the experimental group to choose authentic topics at a higher rate than students not exposed to the treatment. If so, it would relate to the first ACRL Information Literacy Standard, that information literate students can define and articulate their need for information. Students who chose authentic topics would be able to successfully define an information need – based on their paper topic and their authentic interests.
Another group of questions attempted to measure student engagement. It was assumed that engagement could be measured in terms of students caring about finding answers to the questions that they were working on; whether the students cared about their papers independent of the grades they expected to receive; and whether students looked forward to working on their papers in the future. My hypothesis was that engagement would be rated higher for students in the experimental group over students in the control group.

The next group of questions attempted to measure, based on students’ perceptions, whether there was a difference in student learning based on the different treatments. In order to measure this, I chose selected learning standards from the Association of College and Research Libraries (ACRL) Information Literacy and Competency Standards for Higher Education. I chose the ACRL Standards because they provide an objective measure generally agreed upon in the library profession among instruction librarians for how to assess student-learning outcomes. I chose the specific standards I chose because I believe they best reflected the particular learning outcomes agreed upon prior to the sessions by the English 105 instructors and myself as the library instructor for the sessions.

The first question, whether students viewed themselves as confident that they could use library resources to find the information they were looking for, was asked because student’s confidence in their own skills can significantly impact their motivation to learn (Schunk and Zimmerman, 2009). For example, Elizabeth Barkley writes that, “Students’ expectations are inextricably linked with their self-perceptions.

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http://www.ala.org/acrl/standards/informationliteracycompetency
Students must have confidence that, with appropriate effort, they can succeed. If there is no hope, there is no motivation” (2010, p. 11). Edward Deci explicitly ties students’ confidence levels to their need for autonomy and authenticity, writing that “[t]o be intrinsically motivated people need to perceive themselves as competent and autonomous; they need to feel that they are effective and self-determining. Someone else’s opinion does not do the trick” (Deci and Flaste, 1995, p. 86).

It is interesting to note that, according to Deci, students’ confidence levels in their own knowledge and abilities need not be epistemically warranted; the mere feeling of confidence suffices. Given these assumptions, it is reasonable to assume that increased autonomy and authenticity would lead to a differentiation of confidence levels in students’ perceptions of their own searching abilities between the experimental and control groups.

I also asked students whether they were able to find the information they needed for their paper effectively. This question directly bears on a major ACRL information literacy standard – Standard Two – which states that, the “information literate student accesses needed information effectively and efficiently.”

A further information literacy standard relevant here is that an information literate student is able to “incorporate selected information into one’s knowledge base” (ACRL Standard Three). By choosing topics that authentically engage their interest, students should be more likely to choose topics that build on their previous knowledge base. One reason for this is they are more likely to choose topics that they have previously thought about. They should then better be able to incorporate new

8 http://www.ala.org/acrl/standards/informationliteracycompetency
knowledge into their long-term memory. This is because, as the cognitive psychologist Daniel T. Willingham points out, “a number of studies have shown that people understand what they read much better if they already have some background knowledge of the subject” (2009, p. 35). As Willingham succinctly puts it, “comprehension depends on background knowledge” (2009, p. 37).

Thus, that students would be able to use their background knowledge to select topics in this way would be significant on a number of levels. First, these students should be better equipped to learn more information more quickly about their chosen topics than students in the control groups. Second, with more space freed up in working memory, these students should have more space available in working memory to focus on research skills (rather than acquiring background information on their topic). This result should be particularly welcome to instructional librarians.

I also sought to measure whether authenticity would have an effect on whether or not students cared about their sources being reliable. My hypothesis was that students would be more likely to care about their sources being reliable if their topic reflected their true interests. The assumption was that if they cared about the answers to the question they were working on, they would be more likely to want their information to be accurate, since it matters to them what the outcome of their research is.

Lastly, I sought to measure student perceptions of whether or not they felt able to find information to back up all the points they wanted to make in their paper. One reason to use sources, of course, is to provide source evidence for the claims one is
making. Thus, I sought to test whether there would be any specific differences between the means of the experimental and control groups in this regard.
Results and Discussion

Students were asked a total of fifteen questions and filled in their answers online at the end of their instruction sessions through a Qualtrics questionnaire. The results are here broken down into the four main question categories: (1) Questions related to their topic; (2) Questions about engagement; (3) ACRL Information Literacy Competency Standards for Higher Education Questions; and (4) General Questions about the session. Results and discussion are presented here in turn. The statistical results of the Independent Samples T-Test comparing the means between the experimental and control groups are presented directly below each question. For the experimental group, N = 60. For the control group, N = 55. P < .05. Discussion will follow each of the four sets of questions.

1. Topic Related Questions Results

Table 1 shows participants’ responses concerning topic selection. In each of the four questions, participants in the experimental group rated their topics significantly higher than those in the control group. One of the first questions the results addressed is whether or not the keyword exercise successfully helped students in the experimental group choose authentic topics. The data demonstrates that a far greater percentage of students in the experimental group chose topics that truly interested them than did those in the control groups.
<table>
<thead>
<tr>
<th>Item</th>
<th>Experimental M (Sd.)</th>
<th>Control M (Sd.)</th>
<th>t</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>My topic reflects (at least some of) my true interests as a person.</td>
<td>4.37 (.712)</td>
<td>3.6 (.874)</td>
<td>5.18</td>
<td>113</td>
<td>.000</td>
</tr>
<tr>
<td>I feel alienated from (not very interested in) my topic.</td>
<td>1.65 (.712)</td>
<td>2.16 (.874)</td>
<td>3.734</td>
<td>113</td>
<td>.000</td>
</tr>
<tr>
<td>My topic relates to my personal interests outside of class.</td>
<td>4.30 (.814)</td>
<td>3.49 (.720)</td>
<td>5.66</td>
<td>113</td>
<td>.000</td>
</tr>
<tr>
<td>My topic changed as a result of this session.</td>
<td>2.82 (.720)</td>
<td>2.20 (.814)</td>
<td>3.38</td>
<td>113</td>
<td>.001</td>
</tr>
</tbody>
</table>

Table 1. Questionnaire Items Related to Topic

One reason this is interesting is that it might be natural to assume that students will, in general, choose topics that interest them. The results give us reason to believe, however, that students do not automatically choose topics that authentically interest them. Indeed, many students seemed to engage in mere satisficing behavior and choose topics that will get them by for the purposes of the assignment, even if they are not interested in the material. However, it does seem to be the case that most students will choose authentic topics when that behavior is modeled for them. Students, according to the data, were not equally likely to choose topics that reflected their interests outside of class. Some were antecedently inclined to do so prior to instruction, but many were not. But, almost all students chose authentic topics after
receiving the authentic topics modeling exercise.

Furthermore, the students in the experimental and control groups not equally likely to have their chosen topics influenced by the library instructor, as would be the case if authenticity had no effect on the groups. Students in the control groups were less likely to change their topics after having been shown how to find keywords with a “generic” topic than were students exposed to the authentic topics modeling exercise. This is interesting because it demonstrates that instructional librarians can, in fact, satisfy Rogers’s first criterion for authentic teaching, that facilitators of learning find out what students interests are and encourage them to pursue those interests. The data seems to demonstrate that it is possible not only to provide students with resources – as the traditional role of librarians might have it – but that librarians can have a positive and substantial impact on the content students actually choose to work on.

2. Engagement Questions

The questions in Table 2 set out to measure whether authenticity would have any impact on student engagement and motivation. In all cases students in the experimental group rated their level of engagement significantly higher than the students in the control group. For example, students exposed to the authentic topics treatment rated their interest regarding whether they cared about finding answers to the questions they were working on significantly higher than the students in the control group.
Similarly, the data shows that students in both groups, after library instruction, were not equally likely to care about their work, as measured by their commitment to caring about their paper independent of the grade they receive. Students in the experimental group rated their engagement and interest with consistently higher levels than did those students in the control groups.

Authenticity also seems to have had significant impact on whether the students in these classes claimed to look forward to working on their paper in the future. Based on the results it seems clear than being engaged in research that aligns with one’s core self increases the meaning of the experience for the student and, in turn, increases their reported motivation to work on the project in the future.

3. ACRL Information Literacy Standards Questions

Although most students seemed confident in their searching abilities after
receiving library instruction, there was a slight increase in the confidence levels in the means of the students in the experimental group over that in the control group. Based on the data collected, however, we cannot with confidence consider the difference between the two groups significant. For, the p-value of this data set, .054, is just slightly higher than our confidence level of p < .05.

<table>
<thead>
<tr>
<th>Item</th>
<th>Experimental M (Sd.)</th>
<th>Control M (Sd.)</th>
<th>t</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am confident that I can use library resources to find information about the topic I want to write about.</td>
<td>4.34 (.544)</td>
<td>4.09 (.799)</td>
<td>1.95</td>
<td>112</td>
<td>.054</td>
</tr>
<tr>
<td>I care about having reliable sources for my topic.</td>
<td>4.42 (.619)</td>
<td>4.40 (.596)</td>
<td>.147</td>
<td>113</td>
<td>.884</td>
</tr>
<tr>
<td>I was able to effectively find the information I needed for the purposes of my assignment.</td>
<td>4.08 (.624)</td>
<td>3.62 (.023)</td>
<td>2.85</td>
<td>110</td>
<td>.006</td>
</tr>
<tr>
<td>I was able to use the information available to me in library resources to supplement what I already knew about this topic.</td>
<td>4.17 (.587)</td>
<td>3.87 (.802)</td>
<td>2.26</td>
<td>112</td>
<td>.025</td>
</tr>
<tr>
<td>I was able to find information to back up the points I wanted to make in my paper.</td>
<td>3.78 (.738)</td>
<td>3.64 (.893)</td>
<td>.884</td>
<td>112</td>
<td>.379</td>
</tr>
</tbody>
</table>

Table 3. Questionnaire Items Related to ACRL Information Literacy Standards

Interestingly, however, there is a significant difference between the two groups concerning the likelihood of whether they reported to effectively *find* the information they needed. Students in the experimental group on average rated their
ability to find information for their assignments higher than did those students in the control group. One reason for this may be that students in the experimental group, given their greater interest in their topics, paid closer attention to how to search the library databases than did students in the control group.

According to the cognitive scientist Daniel Willingham, the things students remember are the things to which they pay attention. Willingham writes that “[w]hatever students think about is what they will remember … To teach well, you should pay careful attention to what an assignment will actually make students think about (2009, p. 54). This greater attention might then explain the differences in the means between the two groups.

Another hypothesis that may explain this result is that students in the experimental groups were able to pay closer attention to the library skills they were being taught. Because they had spent time previously thinking about their topics outside of class, the students were therefore able to devote more space in working memory to library search skills. The more students are able to bring their background knowledge to bare on a particular topic, the greater space they will have available in working memory (Willingham, 2009, pp. 25-52). ⁹

A greater number of students in the experimental group built on their background knowledge of their topics than did those students in the control groups. This might create greater cognitive space for students in the experimental group to learn library research skills and to successfully access needed information. Based on the data authenticity seems to make a significant difference in this process. On

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⁹ It is important to point out here that working memory has a limited capacity (see, e.g., Willingham (2009, pp. 32-33).
average, students in the experimental group perceived themselves to have met this information literacy standard with greater success.

Interestingly, authenticity did not have a significant effect on whether students cared about their courses being reliable. Students cared to a great degree – and at almost identical levels – about having reliable sources.

Lastly, although there was very slight difference in the means between the groups regarding being able to back up the points they would like to make in the paper, the resulting p-values were not low enough to confidently conclude that there is a significant difference between the groups.

4. General Questions about the Session

The questionnaire asked students two general questions about the instruction session: whether the session was relevant to them and whether they enjoyed the session. The means were quite high for both groups. There were not, however, statistically significant differences between the two groups. One explanation of the results is that students view the sessions to be relevant because, at the House Undergraduate Library, we work closely with instructors to specifically teach students the research skills necessary to complete the assignments on which they are currently working. More or less the only general information shown to the students during these sessions was how to contact a librarian (and even then that is taken to be relevant, I think, by most students). They hopefully, then, enjoyed the sessions, by and large, because they found them helpful for completing their assignments.
<table>
<thead>
<tr>
<th>Item</th>
<th>Experimental M (Sd.)</th>
<th>Control M (Sd.)</th>
<th>t</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>The material presented by the instructor was relevant to me.</td>
<td>4.20 (.605)</td>
<td>4.09 (.674)</td>
<td>.914</td>
<td>113</td>
<td>.362</td>
</tr>
<tr>
<td>I enjoyed this instruction session.</td>
<td>4.17 (.615)</td>
<td>4.00 (.760)</td>
<td>1.29</td>
<td>113</td>
<td>.201</td>
</tr>
</tbody>
</table>

Table 4. Questionnaire Items Related to the Session in General
General Discussion and Recommendations

The Impact of Authenticity on Engagement and Information Literacy

The hypothesis that students who work on what they care about will be more motivated to learn may seem obvious a priori. Nevertheless, instructors rarely seem to explicitly encourage students to work on topics that interest them. It is assumed, perhaps, that students will naturally choose topics that authentically engage their interest. The data collected for this study, however, suggests otherwise: many students simply chose topics that will satisfy the demands of the assignment, whether or not they happen to interest them.

The data collected for this study also gives us reason to believe that library instructors can not only impact what students choose to write about, but can also significantly influence the degree to which students care about their work. The psychological construct of authenticity – being true to one’s self in one’s daily activities – made a difference to UNC Chapel Hill students receiving library instruction in their English 105 classes. These students seemed to care more about the questions they were working on than students in the control groups; they cared more about their papers independent of the grades they expected to receive; and they looked forward to working on their papers in the future.

Authenticity also seemed to have an impact on information literacy as measured by the ACRL standards. The authentic topics exercise helped students
better satisfy the first ACRL Information Literacy standard, that they *define and articulate their need for information* (Standard One). Most students in the experimental groups were able to, within the context of their assignment, develop a topic that authentically interested them. They were then able to *access the information they needed efficiently and effectively* (Standard Two), through successful searching of the Articles + database. And they were able to *incorporate selected information into their knowledge base* (Standard Three) by using library resources to supplement what they already knew about their topic, and conduct research that built on their prior background knowledge.

Based on the results from this particular study at the House Undergraduate Library at the University of North Carolina at Chapel Hill, I would encourage other academic library instructors to incorporate authentic topic selection into their information literacy instruction, especially if they are asked by the faculty for whom they teach to focus on topic selection and generating keywords.

**Broader Implications**

I think, however, that the results of this study could be incorporated more broadly. One future direction for information literacy instruction in academic libraries is the incorporation of ACRL Information Literacy Standards directly into class assignments and at the curriculum level. One way to encourage faculty instructors to incorporate these standards into their assignments, and into the curriculum more generally, would be to focus on encouraging these faculty to design assignments that
help students choose authentic topics, and model for students how to do so. Many of
the reasons for doing so have already been set out in this paper.

This might be particularly valuable for faculty instructors who are teaching in
First-Year Writing programs (such as English 105 at UNC Chapel Hill) because the
primary aim of these instructors is to teach students how to write and research, not
necessarily to teach these students first-order content in other disciplines (as when
English 105 instructors are teaching on topics in the Sciences when teaching science
writing). Incorporating authentic topic selection will free up students’ working
memories enough for students to be able to focus on writing and research, rather than
on content not directly pertinent to writing instructors. Thus, reducing extraneous
cognitive load is one good reason for faculty instructors to be interested in this
research.

Library instructors are increasingly seeking to influence how faculty members
construct assignments. For example, librarians at UNC’s House Undergraduate
Library have been working with faculty to pilot English 105 instructor’s assignments
to embed ACRL Information Literacy Standards directly into these assignments. If
librarians can provide reasons and evidence to instructors that giving students room
to choose authentic topics (from within a framework set out by the instructor) may
lead to desirable outcomes for their students, faculty may be more receptive to change
their assignments based on librarians’ recommendations.

For example, if instruction librarians can provide evidence to faculty that
students engaged in authentic learning are more likely to be motivated to work on,
and care about their assignments, these faculty may be more likely to incorporate
authentic topic selection into their assignments. This would be one way to successfully incorporate ACRL information literacy standards into curriculum by imbedding exercises we know to increase information literacy directly into faculty member’s assignments. By demonstrating their value to faculty, library instructors can have a much more significant impact on student learning at the assignment and curriculum level.

I was recently able to successfully work with an instructor to do just this. Earlier in the semester, while being involved (with another librarian) in a pilot of a new English 105 faculty instructor’s assignment, I discussed with her the research I was working on for this paper. We then discussed how she might, for an assignment later in the semester, incorporate authentic topic selection into her assignment sequence. One possibility that came up in our discussion was to create an assignment sequence about music for the English 105 Humanities Unit. This music unit would incorporate authentic topic selection by allowing students to choose an authentic topic within the larger category of music writing.

One major component of the instructor’s assignment sequence was specifically about authentic topic selection. For that portion of the assignment, the instructor, following the research in this paper, modeled for her students how she herself might go about choosing an authentic music topic. Since she has a background in classical music, she chose Glen Gould’s work on Bach’s Goldberg Variations. I was then invited, as the librarian who had worked with that class on a previous unit, to come to her classroom to model authentic topic selection and to show the students how I used library resources and materials to satisfy my interests for the assignment. I
demoed for students two different examples of topics: (a) topics that there might be specific literature on, and (b) topics that there might not be specific literature on.

For (a) I chose to model how I would research into Miles Davis’s famous jazz album, *Kind of Blue*, because it is my favorite album. In my narrative to the students I focused specifically on the collaboration on that album between Miles Davis and the pianist Bill Evans. There is much research on the significance of the collaboration between these two musicians, and how Evan’s background in classical music influenced Davis and helped shape *Kind of Blue* (Nisenson 2000; Kahn 2000; Williams 2009). This demonstrated to students how to take an authentic musical interest and search the UNC library catalog for resources on that topic.

For (b) I chose as my authentic topics two examples that included musicians for whom I knew there might not be much specific scholarly literature. I did this because I suspected that many students’ own authentic interests might fall into this category, and I wanted them to have a model for how to do this kind of research. For my first example, I chose the hip-hop artist Drake, who is one of my favorite contemporary artists. I gave an example of how I read an article where Drake said that what it means to be a hip-hop artist has changed. It used to be about being a gangster. Now it is more about being young and stylish and having your act together. I explained to the students how I thought that was interesting, and then demonstrated how I could use popular sources about Drake and combine those with scholarly
materials about the history of hip hop music,\textsuperscript{10} to write a paper that satisfies the criteria set out in the assignment.\textsuperscript{11}

For the second example of an authentic topic related to (b), I chose to focus on my favorite singer, the alt-country musician Justin Townes Earle. I used some popular articles and interviews where Earle discusses the overlapping of his roots in country and how, on his new album, he combined this with his love of Memphis Soul music, to make a more soulful record (with STAX-records style horns). I again modeled for students how I would take the popular interviews with Earle and use the library catalog to find scholarly materials about my topic: the common roots of American country and soul music and how Earle combined them on his new record. There were several items in our catalog specifically about Memphis soul that could be used for this project (e.g., Bowman 1997).

This assignment was extremely successful with both the students and the instructor.\textsuperscript{12} This is one example of a successful collaboration where explaining to a faculty member the reasons why a particular instructional method might be successful for them can have an impact in terms of embedding information literacy standards into the larger academic curriculum.

It is worth noting that I am not recommending, in the name of “authentic learning,” that instructors allow their students to work on whatever they want. Constraints are absolutely necessary. Jazz improvisation provides a good analogy for

\textsuperscript{10}E.g. http://search.lib.unc.edu/search?Ntt=rap+%28music%29&Ntk=Subject&Nty=1&sugg=s
\textsuperscript{11} One specific focus for the assignment was that students could write about a cultural issue surrounding music. They could also do a “Pitchfork” music review.
\textsuperscript{12} Here is a sample from an e-mail response from the instructor after I explained my plan for her classes’ library session: “Kevin, THIS IS SO AWESOME!!! I mean it. I love how different the examples are, and the different ways you can go about doing the research. I'm so excited for this class!”
topic selection. Good jazz musicians are excellent improvisers and can turn any standard song into a means for their own unique self-expression. But, jazz musicians are still improvising on a basic, standard melody of a song. Without the song – or the lead sheet detailing the song’s basic melody – the music would be chaotic. The same goes for paper writing. Throughout the course of this study, the most effective assignments I saw required the students to write on a particular topic, e.g., “Memory and the Brain” or “Music and Culture” but then allowed students the leeway to choose authentic topics from within that general framework. Students with too broad a topic birth do not know where to begin, and students forced to write about a very specific issue deemed interesting by the instructor without flexibility are prone to lose interest quickly. Good paper topics allow students to exercise their own authentic autonomy while still providing the students with the structure they need.

One unexpected result of the study is that the authentic topic selection exercise proved to be an excellent way to engage in what Alfred Tatum has called “Culturally Responsive Teaching.” According to Tatum, “a culturally responsive approach involves teachers’ using their students’ culture as an important source of the students’ education” (Tatum, 2005, p. 74). Culturally responsive pedagogy can be an effective way to connect with, and motivate students from, a diverse range of cultural backgrounds (Tatum, 2005, p. 74).

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13 Indeed, while discussion my project with a faculty instructor not included in this study, the instructor responded that the students would like the topic he selected (a very rigid, specific topic that did not allow for student choice). The instructor replied that the topic is “objectively interesting.” But, to me, this misses the point. For, what is interesting to the instructor may not be interesting to the students. This is why it is important to give the students some leeway in selecting their topics. My anecdotal impression from this session is that students’ enthusiasm for this assignment was extremely low. Thus, it is important to remember that, as an instructor, one cannot simply deem a topic interesting – one needs to give students autonomy to choose what interests them (within certain constraints). For more on this point, and on the value of “autonomy support” in the classroom more generally, see (Stefanou et al. 2004; Schunk and Zimmerman 2006).
Anecdotal evidence from these sessions indicates that the authentic topic selection exercise is an excellent way to reach out to students from a diverse range of ethnic and cultural backgrounds. Indeed, I personally spoke with several “minority” students who wrote about cultural issues that meant something to them that I do not believe they otherwise would have had the occasion to write about in this context. One way to approach culturally responsive teaching is to focus on providing students with specific texts that meet their needs. Tatum refers to specific texts that meet the needs of African Americans as the “missing piece” in the educational curriculum for these students (2006, p. 45). Thus, one possible avenue of exploration with the authentic topics exercise would be to encourage students to write about cultural issues that are important to them (as one example of an authentic topic).14

Limitations

The study, of course, has several limitations. One limitation of the study is that the study represents a narrow segment of college students, English 105 students at the University of North Carolina at Chapel Hill. Quite different results might be expected from a similar study at a different university. My conjecture, however, is that given that students at Chapel Hill tend to be highly motivated, the authentic topics exercise could be even more relevant at college and universities where instructors and faculty members are not able to take for granted high levels of student motivation.

14 A recent paper by Casey Rawson and Sandra Hughes-Hassell develops a rubric to help librarians identify they key features of “enabling” texts (2012).
Methodologically, a limitation of the study is I was the instructor for the control and baseline groups. Although I took pains to deliver instruction with the same effort and enthusiasm in each group, it is always possible that natural biases would influence the results.

Another limitation of the study is that, ideally, in order to assess ACRL information literacy outcomes, it would be nice to not only get student perceptions of their own learning, but also to be able to collaborate with faculty in order to assess student learning outcomes. A larger scale version of this study would, perhaps, do well to get buy in from a faculty instructor who could help measure student learning as it resulted in the products of these student’s work. Nevertheless, the student perceptions of their own learning are certainly one interesting piece in what could be a more holistic picture of how students learn.
Conclusion

I hope that the results of this study – even on this necessarily limited scale – will lead to further research into the effects of authenticity on student learning, and will both library instructors and faculty of all types to experiment with implementing authentic learning in the classroom. If authenticity is a core human value – as over two thousand years of thinking about and researching into human happiness seems to attest that it is – it would be more of a surprise to find that authenticity does not have a significant impact on student learning. It is up to student-centered librarians and faculty members to further implement and examine this impact. I expect our students will be better off for it.
Works Cited


Constructivist Psychology, 25, 34–69.


Appendix A: Questionnaire

Directions: Based on the following scale, circle the answer that most applies for each question.


1. My topic reflects (at least some of) my true interests as a person.
   1  2  3  4  5

2. I feel alienated from (not very interested in) my topic.
   1  2  3  4  5

3. I care about finding answers to the question I’m working on.
   1  2  3  4  5

4. I care about my paper independent of the grade I receive.
   1  2  3  4  5

5. My topic relates to my personal interests outside of class.
   1  2  3  4  5

6. I care about having reliable sources for my topic.
   1  2  3  4  5
7. I thought about the issues I am writing about in this assignment before I began working on this paper.

8. I look forward to working on this paper in the future.

9. My topic changed as the result of the topic selection exercise.

10. I am confident that I can use library resources to find information on the topic I want to write about.

11. I was able to effectively find the information in need for the purposes of my assignment.

12. I was able to use the information available to me in library resources to supplement what I already knew about this topic.
13. I was able to find information to back up the points I wanted to make in my paper.

1  2  3  4  5

14. The material presented by the instructor was relevant to me.

1  2  3  4  5

15. I enjoyed this instruction session.

1  2  3  4  5
Appendix B: Keyword Exercise

Generating Keywords

This exercise will help you develop a list of keywords that you can use to research your topic in article databases:

**SUMMARIZE THE TOPIC YOU WOULD LIKE TO WRITE ABOUT IN 1-2 SENTENCES:**

**IDENTIFY THE KEY CONCEPTS IN THE SENTENCE YOU WROTE ABOVE (YOU MAY HAVE 1, 2, OR EVEN 3 KEY CONCEPTS DEPENDING ON YOUR TOPIC). TIP: THE SHORTER THE BETTER – ONE WORD WILL OFTEN DO THE TRICK.**

**FOR EACH CONCEPT, COME UP WITH RELATED WORDS OR PHRASES. THINK OF WORDS AND PHRASES THAT REPRESENT THE SAME IDEA AS THE ORIGINAL CONCEPT.**

<table>
<thead>
<tr>
<th>List your concepts here and related keywords and phrases here:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:</td>
</tr>
</tbody>
</table>
These are **keywords** you can use in your searches.