Meaningful Research Projects: Perspectives from High School Students

Lois Barranoik
PhD Candidate, Department of Elementary Education
University of Alberta
Canada

This study explored what students view as meaningful in a curriculum-based research project. A participatory action research approach was used to investigate the experiences of one classroom teacher and nine students while completing a curriculum-based research project in a senior level high school English course. The design of the research project was based upon the students' shared definition and understanding about what comprised a 'meaningful' assignment. Choice, relevance, reflection and application were considered essential components by the students. Feelings played a primary role in the choices made and significantly influenced student learning and project completion.

Introduction

How do senior level high school students view their school experience in general, and their research experience in particular? One student reflected,

> It just scared me, the fact that nothing really stands out, like I don't remember ever learning something that I felt like "oh wow, this is totally cool." ... that nothing's really memorable about junior high or high school. Like I don't remember anything really striking and neat.

Another student mused,

> The last time I remember doing a research project was in elementary school. I just remember because they want to get you into the library when you're a little kid. Once you get to junior high and high school it's more structured. It's like the teacher has this curriculum and they teach you that.

In my practice as a teacher-librarian, I have observed that many young people do not have a positive view of their school experience and especially dislike completing research projects. They do not consider information as valuable to themselves. Because their topics are assigned rather than chosen, their use of information is simply seen as 'important to the task at hand' rather than a fundamental way to enhance and increase their own knowledge base. Therefore, when educators design research projects, it is necessary to not only address curricular requirements and information skills, but to also consider what is meaningful and relevant to students.

Prior research in this area has addressed the importance of both cognition and affect in the information search process (Kuhlthau, 1993) and the value of motivational strategies to enhance instruction in information literacy and research (Small, 1999; Small & Arnone, 2000). However, student experience still needs to be examined more deeply: what do students view as meaningful in a research project? It is important to hear the voice of students since their formal school experiences strongly influence their adult engagement with literacy, and adults' alienation from literacy activities has economic, social and political costs.

The following questions guided this research:

- What do high school students view as meaningful in curriculum-based research projects?
- How can teachers and teacher-librarians design and carry out curriculum-based research projects that are viewed as meaningful by students?

For this study, curriculum-based research projects were defined as assignments based on subject-specific course content requiring individual study and investigation through the use of multiple resources, resulting in a final product to be shared with both peers and teacher.

Review of the Literature

Literature from three areas provides a grounding for this study: constructivist theory, information search process, and effective research assignments. These three areas provide an overview of the various components contributing to meaning-making in research projects and assist with understanding what is meaningful from the students' perspective.

Constructivist approaches to education, in contrast to traditional transmission models, are seen as assisting with increased understanding, with supporting learners in making meaning for themselves. This view of learning proposes that students develop personal understanding when confronted with new ideas and/or new experiences through interaction with their environment. Dewey (1938) stated "that there is an intimate and necessary relation between the processes of actual experience and education" (p. 20). In other words, students must experience in order to learn. The constructivist theory of Dewey (1933), Kelly (1963), Bruner (1973), and Vygotsky (1978) is the foundation of Kuhlthau's uncertainty principle and information search process model. One aspect of Kuhlthau's uncertainty theory is the interest corollary which holds that the learner's interest increases as uncertainty decreases. "Motivation and intellectual engagement intensify along with construction" (Kuhlthau, 1993, p. 122). The research process therefore, is a process of construction and meaning-making. Dervin (1989), a communication scholar, also viewed information seeking as sense-making, "as personal creating of sense" (p. 5). An emphasis on understanding and the creation of personal sense will make both the research process and the information gleaned through this process more meaningful to the student (Kuhlthau, 1998). The importance of making learning meaningful and relevant to students is reflected in current curricular reform initiatives (Hartzell, 2001).

A common assumption about research assignments is that they help the students learn the course content and develop new understanding related to their studies. However, effective research assignments must do more. They must meet the goals of the curriculum, encourage new learning, have current significance for the students and prepare them for their future. The professional literature in library and information studies and in education identifies key elements in effective assignments. A discussion of each element follows:

Understanding the research process

Students need to understand what is included in the information search process prior to beginning research projects. Different information search models adequately identify the steps involved in the information search process: topic selection, information location, information use, and product creation. However, the format of the models is often linear (see, for example, Irving, 1985; Stripling & Pitts, 1988; Eisenberg & Berkowitz, 1990; Joyce & Tallman, 1997). The implication of a linear model is that the research process is also linear and follows a sequential order of steps. Unfortunately, when teachers and teacher-librarians do not completely understand the information search process themselves, they may mislead students regarding the nature of the research process resulting in both student and teacher frustration when expectations for the project are not met. Part of this process includes learning to select the most useful and appropriate information for a particular topic. Therefore, information search skills need to be taught within a relevant and meaningful context (Todd, 1995).

Comprehending the subject area

Students need a clear understanding of the area to be researched. When teachers provide a clear explanation of the curricular area, the students feel more comfortable with the curriculum-based research project. In fact, Thomas (1999) indicated "that specific research topics ought not to be selected until information on the general topic has been obtained or an overview of the subject has set the stage for the information-seeking tasks that are to follow" (p. 108).

Asking an authentic question based on personal topic choice

Asking authentic questions is of utmost importance (Wehlage & Smith, 1992; MacKenzie, 1999). Part of topic selection involves composing a question about a new idea in order to explore an unfamiliar or different area. Authentic questions require "students to actively produce, rather than reproduce, knowledge" (Wehlage & Smith, 1992, p. 111). Students who own their learning must own their questions (Donham, Bishop, Kuhlthau & Oberg, 2001).

Enhancing cognitive development

It is also important to design learning activities that require mental development; "good learning is that which is in advance of development" (Bruner, 1986, p. 73). In order for students to learn, it is necessary to design and promote activities that build on past experience and understanding while being ahead of the students' developmental stage. This will set "in motion a variety of developmental processes that would be impossible apart from learning" (Vygotsky, 1978, p. 90).

Balancing process and product

Students also need to understand that process and product comprise the research project and that one is not more important than the other. In a qualitative study conducted by McGregor (1995), a relationship between the complexity of students' thinking and their orientation to either research process or product was identified. "The students who evidenced some process orientation showed more involvement in a process of making sense for themselves, of transferring information into long-term memory" (McGregor, 1995, p. 32). Another study interested in finding the students' point-of-view and concerned with identifying elements associated with meaningful research tasks found process instruction to be very important to the students and one of five elements related to satisfaction with the research process (Garland, 1995). These students also identified choice of topic, group work, and clarity of goals and means of evaluation, as related to satisfaction with both the research process and their achievement.

Promoting relevance and meaning

Research assignments should be currently relevant to the life of the students both inside and outside of school. "Acknowledging students' histories, the stories that inform their lives, and weaving such information into webs of meaning that link the everyday with the academic is a powerful way to make knowledge meaningful" (Giroux, 1999, p. 35). Another way to make research projects relevant to everyday life is using the tools and techniques of popular culture. Beaudoin (1998) stated that "popular culture is a major meaning-making system" (p. xiv). Therefore, it may be beneficial for students to have the opportunity to master the skills and technology of popular culture. Students often become so involved with the production of a final electronic product that the actual research process is seen as an important and valued means to an end, rather than an activity to be endured.

Receiving evaluation

Students want to know how they are being assessed (Garland, 1995). Part of the pay-off for students should be in the form of increased understanding and not merely the final grade for the project. "Where grades are used as a substitute for the reward of understanding, it may well be that learning will cease as soon as grades are no longer given – at graduation" (Bruner, 1973, p. 423).

Being part of the research community

The idea of the literate community is applicable to what I am calling the 'research community.' It is essential that students be given the opportunity to practice being a 'researcher' with teachers and teacher-librarians. This is a powerful way to help students become researchers and develop their ability to derive meaning from the information obtained while conducting research. However, teachers and teacher-librarians must feel comfortable with the research process, and they "must realize that inquiry takes time, it is messy, and the work must be performed by the students themselves. Teachers cannot carry out the process of inquiry for the students, although they can support and facilitate that process." (Stripling, 1995, p. 9)

This process support and facilitation by the teachers and teacher-librarians is best accomplished through understanding intervention as defined by Kuhlthau (1993).

It is evident from the discussion of the literature that the 'students who do the talking and the doing do the learning.' Although it is important for students to understand the accomplishments of the past, it is also necessary for them to continually explore new ideas to ensure both individual and societal growth and development. Students need to construct or create new ideas, not merely acquire facts for the purpose of reproduction.

Methodology

Setting

The research in this study took place in a large urban school for fourth and fifth year high school students located in Canada. The school was in its fifth year of operation since opening in September 1997, and attracted students from districts both in and around the urban centre. The student population was approximately 2300 both semesters. Total high school credits held by these students ranged from less than sixty to over one hundred. (Students with a high school diploma have at least 100 credits in the subjects required by the provincial government.) Approximately one-third of the students already had their high school diploma and were simply upgrading. Another one-third needed a few courses to get their diploma, and the last one-third had less than 60 credits and were considered at-risk. Eighty-five percent of these students worked part-time and many lived independently.

Data Collection and Analysis

Over a three-month period in 2002, a participatory action research approach was used to investigate the experiences of one classroom teacher and nine students while completing a curriculum-based research project in a senior level high school English course. The teacher pointed out that this self-selected group of students, five female and four male, comprised a good cross-section of the class. My role as a researcher was that of participant-observer (Boostrom, 1994) and facilitator.

The study provided a forum for discussion by students, teacher and researcher about the research process and the construction of meaning. Data were collected through audiotaped semi-structured interviews, observation field notes and conversations held in co-operative inquiry groups (Baldwin, 2001). Since interpretation is a very real part of conversation, hermeneutics, particularly moderate hermeneutics (Gadamer, 1975), was essential to this study.

Data analysis was ongoing throughout the study. Analysis and reflection on the data and processes provided the basis for replanning, acting and observing, and reflecting, the steps common to action research (Carson, Connors, Ripley & Smits, 1989). Since the aim of the action research participants was to identify what is meaningful and to increase understanding, it was important that the analysis completed by the researcher be understood and used by those involved in the study. Discussions were taped and transcribed for each session until we reached a shared understanding of 'meaningful' assignments (Gallagher, 1992). We then translated our understanding into a curriculum-based research project for the students.

Although weekly discussions regarding the implementation of the new ideas were planned, I became aware that it was more productive to meet as *issues arose*, rather than on a set schedule. This part of the methodological evolutionary process required flexibility and a willingness to 'let go'.

Findings

Defining Meaningful Assignments

How students construct personal meaning and what they consider 'meaningful' and/or 'not meaningful' when completing a research project became more evident through this exploration. Individual student and teacher participant interviews were audiotaped and transcribed. Transcripts were reviewed to find all references to 'meaningful.' These references were highlighted and categorized. The categories identified for 'meaningful' assignments and sample participant responses follow:

- Choice: *"...that is really meaningful to you if it's yours"*
- Can relate to it: *"...it's something that you can relate to"*
- Previous experience: *"you can take what you already know and build on it"*
- Present personal opinions: *"...it's important that you get to put a little piece of your own opinions ... into it because if you don't then you're just regurgitating facts and that's not meaningful"*
- Something that makes you think a lot: *"... it has to be something that will make me think a lot"*
- Helps you understand the way the world is: *"... because there's lots of points of view being thrown out and you get to look at things in a new light all the time"*
- Increases understanding of self: *"...it should be about getting to know yourself"*

What was considered '**not** meaningful' was also identified during the initial participant interviews. One participant suggested that "[in] junior high and high school we took notes and we read textbooks and that's it, and I didn't learn. I mean I memorized and that's it and I didn't really take anything out of it." Following this line of thought was another comment indicating "I don't remember anything I've ever written down on a worksheet." One student stated "Why regurgitate something that somebody else wrote that doesn't teach you anything?" Multiple choice tests, memorization, regurgitating facts, and completing worksheets were most often identified as school activities that are **not** meaningful to students.

As the participants were interviewed, they were given their transcripts to read and initial. Once the students had positively verified the interpretation of their interview, all ideas for 'meaningful' assignments were compiled and displayed on a large chart (Miles & Huberman, 1994). The discussion chart was organized in the following manner:

1. What meaningful assignments include
2. Activities that are course-related, interesting and help with learning
3. Activities that are not meaningful

This discussion chart formed the basis for our initial co-operative inquiry group discussions. At times the discussion became philosophical, rather idealistic and insightful. One participant suggested;

> All these things tie in together because something that makes you think a lot will help you understand the way the world is and it'll increase your understanding of the way you are ... so use your previous experiences and, of course, you'll relate to it and you'll choose something that you're interested in.

Another participant commented;

> I think that if you look at black and white, then you can't understand why people do the things that they do for the reasons that they have. So if you kinda have a broader understanding then you understand others and you understand yourself.

After much discussion by the student participants and the teacher, numerous definitions regarding 'meaningful' assignments were generated and recorded. All of the ideas were then combined into one complete definition:

> ***Meaningful assignments are open-ended, thereby allowing for choice, personal interest and the expression of personal opinions, while encouraging thought and decision-making about the world and yourself.***

The students agreed that this definition captured their ideas regarding 'meaningful' assignments and that the design of the curriculum-based research assignment in their English class should be based on the definition.

Further discussion and analysis revealed that the agreed upon definition was comprised of four components: **choice, relevance, reflection** and **application.** A discussion of the findings for these components follows.

Choice: Being given choice was very important to the student participants. However, the definition of choice varied considerably and indicated a range in sophistication of thought and understanding. One student believed that it should include the choice of the book to read as well as the topic (i.e., "we got a choice on like the topic but we actually didn't get a choice on like [the book]"). At the other end of the continuum, another student felt that being allowed to express personal opinion provided sufficient options since a variation in perspective ensured that there was choice in the expression of ideas. Although the students' understanding about what constitutes **choice** varied, the final consensus was that choice was an essential part of 'meaningful' assignments. One student summarized this in the following manner: "Like, if you choose what you get to do, it's meaningful to you and you can do what you want. Obviously you wouldn't choose something you didn't want to do. Yeah, that's pretty much it."

Relevance: Student participants indicated that 'meaningful' assignments needed to be currently relevant to their life both inside and outside school. Ideas for discussion and/or research need to be "things that I can actually relate to in life" and topics that actually have "something to do with you" and that help with understanding "the way the world is." Students believed that a 'meaningful' assignment "makes you think right away and understand it because you're put in that situation." One student believed that a 'meaningful' assignment "also affects you in real life. I mean outside the classroom, it's something that you could take outside the classroom."

A common complaint about school expressed by the students was that "it's so distant and like when am I ever going to use this and why should I care? Like it has nothing to do with me." This belief in the importance of relevance appeared to be based upon student understanding that the goal of schooling should be about getting to know yourself better. One student suggested that school should provide an opportunity for you to learn and grow as a person. Another student felt that "school should be about getting to know yourself and what you're good at, and what you want to do." Therefore, based on the understanding demonstrated by the students, **relevance** is integral to 'meaningful' assignments as defined by the participants of this study.

Reflection: Student participants believed that being allowed to express personal opinion(s) in an assignment increased personal meaning but they also required time for contemplation and deliberation. Part of this reflection process, based on student suggestion, involved having two 10 to 15 minute blocks of class time per week for students to discuss their choice of topics and possible perspectives with other group members. This was considered valuable because it was "going to force people to make sure that when they're looking at an issue that they're looking at all sides of the issue" and was incorporated into the project after a recommendation was made in one of the co-operative inquiry group sessions. One student remarked, "I think if you talk about your issues I think a lot of people are going to be opened up to a lot of things that they didn't think about putting in their paper." Hearing the perspectives of other students was considered essential and contributed to the construction of personal meaning. According to the input provided by the student participants, **reflection** requires adequate time to think, cannot happen in a vacuum, and is elemental to 'meaningful' assignments.

Application: Although making application to personal lives is an extension of relevance and encourages personal construction of meaning, student participants indicated that before applying what had been learned to themselves, they had to be given the time to reflect and ascertain what was significant for them. One student suggested that "to really learn something you have to take something, a topic or whatever, that's got sides to it, roll it around in your head, look at the different perspectives and figure out from that what your place is." Another student indicated;

> I think maybe before the project, and I think possibly maybe other students as well, didn't, may have felt that it would not affect them in real life or affect them themselves out of the classroom. But I was amazed how afterwards or during the process of research, it very slowly changes you … to gain different perspectives and … a better understanding.

The same student then went on to elaborate that "years from now I'll still remember doing this project and be able to pertain things in life to it." It would appear that for some students, personal application does not necessarily end upon completion of the project. It is ongoing and, as such, basic to the construction of knowledge and meaning.

Developing the Research Assignment

Once the students had reached an agreement about the definition for 'meaningful' and about what constituted a 'meaningful' assignment, the teacher and the researcher created an assignment based on the definition. It was especially important to incorporate all the identified components into the assignment to ensure that the students' ideas and thoughts were formally acknowledged and that the student participants felt valued. A copy of the curriculum-based research assignment follows:

English Research Assignment

1. Choose an issue of interest to you that is found in The Great Gatsby.
   You will need to read the book carefully and, perhaps more than once, in order to do this.

2. Begin collecting various pieces of information about that issue. Sources may include dictionaries, quotations online or in print, encyclopedias, magazines, newspapers, and interviews as well as the book itself.

3. Focus on one aspect of the issue in order to write your thesis statement.

4. Your final product is a research paper of approximately 1000 to 1500 words typed (4 to 6 pages) that covers the following:
   - Introduction to the issue
   - Discussion and examples from the novel
   - Discussion and examples from current life
   - Personal opinion about the issue
   - Conclusion

The assignment was introduced to the class and the students were encouraged to ask questions and/or make suggestions. During the second round of co-operative inquiry group discussions, one student participant remarked, "Actually everything is very good. You have prepared it [the assignment] very well for us." Another stated, "Well from what I read, it's exactly what we talked about." Students indicated that the curriculum-based research project designed and based on their definition was, indeed, 'meaningful' because they were allowed choice, encouraged to express personal opinions, and focused on relevance through locating current examples for their area of interest. They were also given time to think and reflect on their learning.

Feelings and Meaningful Assignments

Student participants made over 400 references to feelings, both positive and negative, during co-operative inquiry group discussions and interviews. Although there were more positive than negative feelings, it became apparent that students experienced an emotional reaction to the assignment and freely expressed this.

Slightly more expressions of feelings, both positive and negative, were associated with the process, rather than with the product and/or content. Eight of the nine participating students indicated that they lacked prior experience and were uncomfortable, as well as unsure, about the process of research. Since prior experience contributes to feelings of confidence with process, it was not surprising that initially students were more concerned with the "how," than with the final product. This confirms the importance of discussing and identifying feelings throughout research (Kuhlthau, 1993) and identifies the immense influence feelings have upon cognition (Damasio, 1994).

Personal feelings played a primary role in the choices made. For example, students commented on the necessity "to do something that affects me personally and something that I can write on passionately," the importance of doing something that "was deep and profound and really interesting," and the idea that "if it appeals to you, you'll learn about it." One student also discussed the positive feelings that come with the reassurance that "a lot of people think like I do." Another student participant, pleased with the assignment design, commented about the importance of personal opinion. He said "Well, I got to write about something that I was able to speak out against, you know. I could actually put my personal opinion in there and I could actually say what I felt, instead of what the teacher wants to know." More than one student indicated that being given choice and choosing a topic of personal interest helped to make the process of writing and assignment completion easier.

Discussion

Defining Meaningful Assignments

The first interview with student participants asked about course-related activities that were most interesting to them as well as what makes an assignment meaningful to them. All assignments contain activities, but not all activities are part of an assignment. Asking about activities helped to set the context, opened up the inquiry process and provided indications of the students' preferred learning styles. The discussion about classroom activities helped to not only clarify what the student participants considered interesting, but also assisted with the design of the curriculum-based research project. Knowledge about what classroom activities the students considered 'meaningful' and 'not meaningful' ensured the use of those activities viewed positively by the student participants. As outlined in the findings, choice, relevance, reflection and application were identified as essential to the composition of 'meaningful' assignments.

Choice: Student participants in this study considered choice to be of utmost importance when completing a curriculum-based research project. When students were allowed choice, they began to feel that they were able to pursue a topic of interest to them and began to feel more control. Positive feelings about the curriculum-based research project accompanied choice (Garland, 1995). Allowing choice may initially seem risky but, as with any new foray into unfamiliar territory, the end result is often worth the uncomfortable beginning. Students want to be given choice (Smith & Wilhelm, 2002). One student suggested that choosing something "passionate to me" was paramount. Once the choice had been made, everything else seemed to "come to me nicely." As indicated in Kuhlthau's (1993) Information Search Process Model, once a focus has been formed, feelings of clarity and confidence follow, and the students can more easily identify relevant information.

Relevance: Student participants stated that 'meaningful' assignments were those with current relevance to all their life experiences. Linking the "everyday with the academic" (Giroux, 1999, p. 35) is an effective way to make learning meaningful. One student displayed a positive attitude towards research but suggested "It's just some of the stuff they make you research, it's like, well what the heck." In a study of secondary student perceptions of class activities, Gentry and Springer (2002) recognized that "classroom activities that are practical and related to the students' daily lives facilitate connections and learning" (p. 194) and contribute to the construction of personal meaning. Garland (1995) found that student satisfaction was based upon a clear relationship between the research assignment and the course content.

Reflection: Student participants believed that being allowed to express personal opinion(s) in an assignment increased personal meaning but also necessitated adequate time for considering, pondering and assimilating new learning. "Inquiry takes time" (Stripling, 1995, p. 9). The student participants identified the importance of being given time to make sense of their issue and requested time for discussion with group members. These students knew, apparently intuitively, that having the time to reflect and discuss their issues would both illuminate and inform their personal thinking while contributing to the construction of personal meaning (Damasio, 2003). Reflection is one of the steps common to action research, the methodology used for this study. According to Kemmis and McTaggart (1988), "reflection seeks to make sense of processes, problems [and] issues; reflection is usually aided by discussion among participants" (p. 13).

Application: Application, as identified by the student participants, included not only making use of the knowledge learned in another situation, but also embodied analyzing, synthesizing and evaluating. Prior to discussing personal opinions, the relation between ideas needed to become clear and judgements needed to be made. Making a personal application encouraged students to construct or create ideas, not merely acquire facts for the purpose of reproduction (Wehlage & Smith, 1992). Discipline knowledge from English and from Library and Information Studies assisted with this process by expanding and offering new tools with which to interpret personal experience and apply what had been learned. For example,

> What students learn as they read one text can be applied when they read the next. Moreover, when students have a stake in using texts to grapple with a question that matters, they'll be very motivated to learn the reading strategies, search techniques, or data collection tools they need. (Smith & Wilhelm, 2002, p. 191)

Feelings and Meaningful Assignments

As depicted in the findings, students demonstrated an emotional response, both positive and negative, to the research project and freely expressed how they were feeling. It became apparent that the way the students felt about the curriculum-based research assignment influenced their choice of topic as well as their successful completion. Kuhlthau (1993) and her Model of the Information Search Process was the first inquiry process model to recognize a primary role of feelings throughout the process and to identify that feelings were a part of each stage in the research process. Familiarizing the students with this model encouraged them. One student stated "It provided comfort, much comfort because then I understood it's all right to feel this way because other people feel it too and it's a normal process."

Throughout the research project, students consistently referred to the model and began to use the language associated with each stage and its corresponding feeling(s). Rather than suggesting that the project was 'stupid' and becoming disillusioned with research, the student participants were able to identify how they were feeling and to pinpoint why, based upon the model, they were feeling that way. Introducing Kuhlthau's Model of the Information Search Process prior to beginning the curriculum-based research project and reviewing it regularly with the students increased student understanding of the research process and prevented the misreading of feelings. "A misreading of feelings as a signal of failure is likely to occur when users do not have an understanding of the affective component of the constructive process of information seeking" (Kuhlthau, 1993, p. 118).

Feelings were also identified by student participants as being pivotal to the sustainability and completion of the research project; passion for the topic selected was a must. For example, one student expressed an interest in writing about infidelity, but decided that "I don't know that I feel passionately enough about infidelity … I didn't really feel that I could argue it as well so I left that alone." This implies the necessity for an emotional commitment to the chosen research topic. The neurologist, Antonio Damasio (1994) states

> I see feelings as having a truly privileged status. They are represented at many neural levels, including the neocortical, where they are the neuroanatomical and neurophysiological equals of whatever is appreciated by other sensory channels. But because of their inextricable ties to the body, they come first in development and retain a primacy that subtly pervades our mental life. Because the brain is the body's captive audience, feelings are winners among equals. And since what comes first constitutes a frame of reference for what comes after, feelings have a say on how the rest of the brain and cognition go about their business. Their influence is immense. (p. 159, 160)

During the initial interviews for this study, students fondly remembered elementary school as a time for doing research and projects that were interesting. Educators in elementary schools have always recognized the impact that feeling and emotion have on cognitive learning and, therefore, they often place precedence on teaching the individual over teaching content. However, educators in secondary schools have emphasized covering course content and have placed less priority on addressing the emotional needs of individual students. As a result, students' engagement with and commitment to, course content is often negligible.

Conclusion

Students often feel powerless within the school system. However, throughout this study, student participants began to understand that their ideas and thoughts about learning in general, and research in particular, were valued by teachers and other school personnel. They began to take ownership of their learning and expressed excitement about learning something new, about teaching themselves, about "discovering things in the library, discovering books and stuff that we never had a chance to discover before." One student remarked that doing research "makes you feel smart and gives you confidence too." It is imperative that feelings be acknowledged throughout a research project and that time is taken by the teacher and teacher-librarian to identify and discuss how students are feeling.

Through collaborative planning, the students and the teacher began to understand that the integration of relevant research into the core curriculum promotes meaningful involvement on the part of students. When skills and process were taught in a way that made sense to students, they became engaged learners and achieved at a higher level of performance. The teacher stated that the completion rate for this project was much higher than the usual 67% completion for research projects in English courses in the school.

Students believed that this experience had prepared them for post-secondary education. One student stated, "When the time comes in university when it needs to be a longer research paper, I'll be more prepared." Another student said, "It's manageable now. Like I can do a research project when I get another one … I know how to do this … I know the steps." In other words, the student participants felt that experiencing a research project provided them with a template for future research. Rather than feeling distressed whenever 'research' and/or a curriculum-based research project was mentioned, they understood that taking ownership of their topic, their time and their process, ensured successful completion and a positive feeling of accomplishment.

This study should encourage the educational community to hear the voices of young people, "and then to adjust our practice based on this learning" (McPhee, 1997, p. 243). The students identified choice, relevance, reflection and application as essential components of meaningful assignments. However, due to the unique composition of each class, the teacher and teacher-librarian need to remain open to differing definitions of 'meaningful' and adjust the curriculum-based research assignment appropriately, remembering that feelings (affect) significantly influence student learning.

Notes

This paper draws on my dissertation work and earlier work published in:

Scan. (November, 2001), (20)4.
School Libraries Worldwide. (January, 2001), 7(1).
Teacher-Librarian Today. (2001), 7(1).

References

Baldwin, M. (2001). Working together, learning together: Co-operative inquiry in the development of complex practice by teams of social workers. In P. Reason & H. Bradbury (Eds.), *Handbook of action research* (pp. 287-293). London: Sage.

Beaudoin, T. (1998). *Virtual faith.* San Francisco, CA: Jossey-Bass.

Boostrom, R. T. (1994). Learning to pay attention. *Qualitative Studies in Education,* 7(1), 51-64.

Bruner, J. (1973). *Beyond the information given: Studies in the psychology of knowing.* Edited by J. M. Arglin. New York: W.W. Norton & Co.

Bruner, J. (1986). The inspiration of Vygotsky. *In Actual minds, possible worlds* (pp. 70–78). Cambridge, MA: Harvard University Press.

Carson, T., Connors, B., Ripley, D., & Smits, H. (1989). *Creating possibilities: An action research handbook.* Edmonton, AB: Faculty of Education, University of Alberta.

Damasio, A. (1994). Descartes' error: *Emotion, reason, and the human brain.* New York: HarperCollins.

Damasio, A. (2003). Looking for Spinoza: *Joy, sorrow and the feeling brain.* Orlando, FL: Harcourt.

Dervin, B. (1983). *An overview of sense-making research: Concepts, methods and results. Paper presented at the annual meeting of the International Communication Association, Dallas, TX,* May.
Retrieved from http://communication.sbs.ohio-state.edu/sense-making/art/artdervin83.html

Dewey, J. (1933). *How we think.* Lexington, MA: Heath & Company.

Dewey, J. (1938). *Experience and education.* London: Collier-Macmillan.

Donham, J., Bishop, K., Kuhlthau, C. C., & Oberg, D. (2001). *Inquiry-based learning: Learning from Library Power.* Worthington, OH: Linworth Publishing.

Eisenberg, M. B., & Berkowitz, R. E. (1990). *Information problem-solving: The Big Six Skills approach to library and information skills instruction.* Norwood, NJ: Ablix.

Gadamer, H-G. (1975). *Truth and method.* New York: Crossroad Publishing.

Gallagher, S. (1992). *Hermeneutics and education.* Albany, N.Y.: State University New York Press.

Garland, K. (1995). The information search process: A study of elements associated with meaningful research tasks. *School Libraries Worldwide,* 1(1), 41-53.

Gentry, M. and Springer, P. M. (2002). Secondary student perceptions of their class activities regarding meaningfulness, challenge, choice, and appeal: An initial validation study. *The Journal of Secondary Gifted Education,* 13(4), 192-204.

Giroux, H. A. (1999). *Corporate culture and the attack on higher education and public schooling.* Bloomington, IN: Phi Delta Kappa.

Hartzell, G. N. (2001). The implications of selected school reform approaches for school library media services *School Library Media Research.* Retrieved May 10, 2001
from http://www.ala.org/aasl/SLMR/vol4/reform/reform_main.html

Irving, A. (1985). *Study and information skills across the curriculum.* London: Heineman.

Joyce, M. Z., & Tallman, J. I. (1997). *Making the writing and research connection with the I-Search process.* New York: Neal-Schuman.

Kelly, G. A. (1963). *A theory of personality: The psychology of personal constructs.* New York: W.W. Norton & Co.

Kemmis, S., & McTaggart, R. (1988). *The action research planner* (3rd ed.). Victoria, Australia: Deakin University.

Kuhlthau, C. C. (1993). *Seeking meaning: A process approach to library and information services.* Norwood, NJ: Ablex.

Kuhlthau, C. C. (1998). Constructivist theory for school library media programs. In D. Callison et al (Eds.), Instructional intervention for information use: *Research papers of the sixth Treasure Mountain Research Retreat for school library media programs held in Oregon March 31- April 1,* 1997 (pp. 14-22). CA: Hi Willow Research and Publishing.

McGregor, J. H. (1995). Process or product: Constructing or reproducing knowledge. *School Libraries Worldwide* 1(1), 28-40.

McKenzie, J. (1999, November). Questions and questioning: The most powerful technologies of all. *From Now On: The Educational Technology Journal.* Retrieved April 12, 2001 from http://www.fno.org/nov99/techquest.html

McPhee, R. W. (1997). *The voices of young people: Being heard in our high schools.* Unpublished doctoral dissertation, University of Alberta, Edmonton.

Miles, M. B. & Huberman, A. M. (1994). *Qualitative data analysis.* Thousand Oaks, CA: Sage.

Small, R.V. (1999, January). An exploration of motivational strategies used by library media specialists during library and information skills instruction. *School Library Media Research.* Retrieved September 12, 2000 from http://www.ala.org/aasl/SLMR/vol2/motive.html

Small, R.V., & Arnone, M. P. (2000). *Turning kids on to research: The power of motivation.* Englewood, CO: Libraries Unlimited.

Smith, M. W. & Wilhelm, J. D. (2002). *"Reading don't fix no Chevys": Literacy in the lives of young men.* Portsmouth, NH: Heinemann.

Stripling, B. K. (1995, Spring). Learning-centered libraries: Implications from research. *SchoolLibrary Media Research.* Retrieved April 19, 2001 from http://www.ala.org/aasl/SLMR/slmr_resources/select_stripling1.html

Stripling, B. K., & Pitts, J. M. (1988). *Brainstorms and blueprints: Library research as a thinking process.* Englewood, CO: Libraries Unlimited.

Thomas, N. P. (1999). *Information literacy and information skills instruction: Applying research to practice in the school library media center.* Englewood, CO: Libraries Unlimited.

Todd, R. J. (1995, Winter). Integrated information skills instruction: Does it make a difference? *School Library Media Research.* Retrieved April 19, 2001 from http://www.ala.org/aasl/SLMR/slmr_resources/select_todd.html

Vygotsky, L. (1978). *Mind in society: The development of higher psychological processes.* Cambridge, MA: Harvard University Press.

Wehlage, G. G. & Smith, G. A. (1992). Building new programs for students at risk. In F. M. Newmann (Ed.), *Student engagement and achievement in American secondary schools* (pp. 92-118). New York: Teachers College Press.

Biographical Note

Lois Barranoik is a doctoral candidate in the Department of Elementary Education at the University of Alberta, Edmonton, Alberta, Canada. She has a BA, a Professional Diploma (After Degree) in elementary education, and an MLS. Before returning to university, she was a classroom teacher and teacher-librarian in elementary and secondary schools, as well as a learning resources consultant for Edmonton Public Schools. Lois is president of the Alberta Teachers' Association Learning Resources Council. E-mail: lbarrano@telusplanet.net