Module 1: Synthesis

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Design and Implementation of Instructional Strategies for Information Professionals

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I – Educational Theory

I had only rudimentary knowledge of educational theories before I started doing my research in this area. I had an awareness of behaviorism and B.F. Skinner’s role in developing behaviorist theories, though I did not know what they were.

My reading focused on the role of the federal government in shaping educational goals, in particular the push by the Obama administration to focus on increasing enrollment in junior colleges as a stepping stone to increased enrollment in four-year institutions. I also reviewed a discussion of various theories and models of constructivist teaching in academic settings. In the K12 arena, I read an article defining multiple intelligences, and the necessity of taking them into account when teaching students who may respond differently to different areas of knowledge. In addition, I read an article that defended the theory of brain-based education.

Summary

New trends include a move away from the behaviorist model of teaching towards the constructivist model. In behaviorist theory, the teacher is the source of knowledge and imparts it to the students who have to meet benchmarks in order to progress to the next step. Right answers lead to rewards and progress, whereas errors are a cause for remediation – students don’t progress until they get the right answers. Constructivist teaching is social and collaborative in nature. Students are encouraged to build on their own knowledge and understanding to either expand it, and incorporate this new learning into their worldview (assimilation), or adjust their worldview to accommodate the new information they have received (accommodation). Piaget developed the ideas of assimilation and accommodation and the cognitive aspect of learning, where as Vygotsky recognized that learning is a social activity and that people learn more when they have an opportunity to share their ideas with others. As students have more information at their disposal, they are also able to make better moral choices.

Brain-based education states that environmental factors constantly influence the brain’s development, and that it is in the interest of promoting health brain development that will have the effect of enhancing learning ability. Factors that affect brain development include stress, social interactions, diet, physical activity and exposure to the arts. Educational experiences should take these factors into account and create activities that enhance healthy brain development.

Schools and libraries are also beginning to focus on various models of online distance
learning, as well as creating learning spaces within libraries in which students can either choose to collaborate with each other (and in which noise and talking is permitted), or to work individually.

Cognitive and constructivist approaches favor problem- or project-based learning, in which students come to conclusions through a process of inquiry. Students are given a problem to solve and then work on finding the information that will lead to a solution. Learning takes place just as much in the process of researching and synthesizing knowledge as it does in the end product. Librarians can also use this theory in teaching information-seeking skills to students by encouraging them to keep asking questions that will lead them to the next stage in the information-seeking process.

In the area of higher education, the Obama administration is influencing academic education by promoting attendance at junior colleges as a means to increase overall college enrollment. In the K12 arena, a rethinking of the principles behind the No Child Left Behind Act (NCLB) is currently underway. NCLB uses on standardized testing to attest school performance and ties this to either increased funding or remedial measures and instead of assessing actual learning.

“Multiple intelligences” is a theory that was defined by Howard Gardner and which states that people have different ways of incorporating information. – some people excel in the are of people skills, while others excel in reasoning, or thinking it terms of pictures. It is important for teachers to take this into account when teaching, so as not to use a “cookie cutter” approach. Differentiated instruction is one way of putting this theory into practice, in that the teacher will teach to each student based on his or her ability and understanding, and not by having all the students conform to an overall model regardless of ability to absorb the information. In “Understanding by Design”, a lesson is developed based on the desired final goal (i.e., what does the teacher want the students understand at the end of the lesson?). All of the instruction and other activities that take place in the lesson are geared toward moving the students towards this goal while ensuring that they are actively engaged in the learning process. This is the basis for the transformations that we have been doing in this class.
2 – Curriculum and Assessment

Before starting this class, I was aware that curricula were developed at the state level, with performance standards set by the No Child Left Behind Act (NCLB).

In the K12 arena, I read about the role that librarians can play in helping teachers create curriculum, as it will help students also see the value of the library as a resource and learning tool. I also read an article on the importance of creating an interconnected core curriculum for high school students that would create connections among different subjects, as well as with the students’ outside lives. In addition, I read an article that questions the idea of high-stake standardized testing which only measures whether or not students are meeting curricular goals, and not how well they are actually learning.

Summary

As things stand, curriculum design does not take place at the teacher level, but instead takes place at the state level meaning that teachers have no input into content development. Studies have shown, that teachers often teach the curriculum based on their own personal beliefs, and not on the actual content of the curriculum. Much controversy has been generated by NCLB in that it sets performance standards that schools must meet in order to qualify for federal funding. Assessment of these standards takes place through the use of annual standardized testing. Schools that do not meet the standard are designated “in need of improvement” and are at risk of further remedial action if they do not improve their performance. Students with disabilities are held to the same standards as non-disabled students, therefore setting the stage not only for their failure, but also for the school’s failure to meet the NCLB-imposed standards as well. The pressure to measure up to NCLB-imposed standards would tend to reinforce behaviorist teaching in an effort to ensure that all the students are meeting the required benchmarks.

Alternatives to this approach include the design of curriculum at the local district level, based on an assessment of the district’s needs and goals. Additionally, librarians can be included in the creation of curriculum, so that the library becomes an additional segment of the student’s learning experience, and not just a place to get books or other information needed to complete an assignment. Librarians can also provide feedback to teachers as to students’ responses to assignments, therefore helping the teacher to design more effective instruction. Teachers and librarians can also become more involved in decisions as to what classroom books and other
equipment are purchased, as these decisions usually take place at a higher level, meaning that teachers and librarians are forced to work as best they can with what they are given, which can be inimical to providing the best learning experience for the students.

There is a move away from a behavioral design to developing curriculum and lesson plans and towards a constructivist approach. In this approach, students would be placed in the center of their own learning process, and teachers would act as guides, helping students along the path to creating knowledge. In other words, having students take an active role in their own education would make the experience more meaningful and help them to retain knowledge as well as to create it. One model for lesson planning is “Understanding by Design” in which lessons are geared towards the desired outcome in terms of the development of the students’ knowledge and skills, and not just inculcating them with disconnected facts. Learning works best when students make their own connections.

An alternative to the annual high-stakes testing that measures standards imposed from above, would be to use more frequently administered assessment tools that measure how well students are learning and gaining knowledge, and not just how good they are at taking a test. With high-stakes testing, all curricular instruction is geared towards having the student do well on the test, and not towards assessing how well the student is actually learning. If a student does not do well on such a test, he or she may feel discouraged from continuing with their studies. One idea is creating assessment tools that measure how well the school as a whole is measuring up to its own stated goals, as opposed to measuring students individually. There has also been experimentation with online forms of assessment in which results are received almost instantly, thus allowing for a quicker response and adjustment of the curriculum and goals as needed.
3 – Collaboration

Before starting this class, I had no knowledge of theories of collaboration or techniques for fostering collaboration. I had some awareness of interdisciplinary medical training from my current job at UCSF.

For this section I read a definition of behaviorism, which included an example of how behaviorism might be used in a classroom. I also read a definition of collaborative learning that described how it works, and how it differs from individualized instruction. I read two studies that focused on developing collaborative learning activities in academic and K12 settings. I received much of the information on integration of information literacy into academic curricula from the interviews I conducted with librarians early in the semester.

Summary

Collaboration in teaching and learning does not work with the behaviorist model in which teachers impart a pre-determined set of facts to students and tries to influence their learning through rewards or punishments. Instead it works best when following constructivist principles, in which students are encouraged to expand their own knowledge base to incorporate new learning. Constructivist learning is also social in nature. Students are able to share their ideas with others, including teachers and other students, and receive feedback that further enhances their learning.

A key factor contributing to successful collaboration between teachers and librarian is a commitment by both parties to the act and process of collaboration. The roles of the teacher and the librarian must be clearly delineated, and most importantly the teacher and the librarian must have a shared set of goals and be willing to share responsibility. The environment of the school is another key contributing factor. Many times, the school administration does not have a clear idea of what the librarian actually does or can contribute to the learning process, and it is up to the librarian to educate them and provide evidence of successful outcomes from past collaborations, such as studies that show that combining research skills with actual projects make both activities more meaningful and relevant to the students conducting them. The administration and other organizational structures in the school must also be committed to promoting the growth of their students in a holistic manner, as opposed to having their focus be on meeting benchmarks imposed from above.

There is a broad range of actual methods of collaboration. In academia, librarians are
working towards both integrated instruction, and integrated curriculum. With integrated instruction information literacy is incorporated into pre-existing curricula. Librarians actively take an interest in the faculty and their work, and promote ways in which librarians can be of assistance in promoting the faculty’s teaching efforts. Integrated curriculum is a curricular model in which information literacy is incorporated into the curriculum at every level, and in which the librarian joins with the teacher in planning curricula that has information literacy as an integrated part of the lesson plan and desired learning outcome. Librarians also find that when they act as a consultant on lessons, assignments and projects that students recommend the library to their friends and that library circulation increases accordingly. Many universities are now requiring information literacy as part of their core-curriculum and graduation requirements.

Within the classroom, there are many 21st Century tools that can be used. Among these are knowledge building centers such as Moodle and web-based tools such as wikis, podcasts, blogging and Google Docs. An advantage of using web-based tools is that schools do not have to spend extra money on infrastructure or new software. With “Just In Time Teaching”, students are given a question and can provide feedback and commentary to each other through asynchronous systems such as discussion boards or blogs. When students are able to respond to lessons at any time of day, they will be more likely to stay in a learning frame of mind when they are outside of the classroom.
4 – 21st Century Skills and Information Literacy

Before this class I was aware of Web 2.0 technologies that were rapidly becoming common place tools for learning, including wikis, blogs, and knowledge building centers. I had also learned about Kuhlthau’s theory on zones of intervention.

I read only one study, which is about the importance of librarians actually teaching information seeking skills to K12 students, as opposed to merely providing the information that they are seeking. This involves librarians making use of 21st century skills such as online/chat reference interviews and providing information about the use of online databases. I gained the majority of information I learned about 21st Century skills in the class discussions and in building the transformations.

Summary

One definition of information literacy is being able to access, evaluate, and use information efficiently. Part of the process of evaluation includes making sure that students become media aware, and that they are able to analyze the many messages they receive from the media, and evaluate this information for its veracity, or lack thereof. This is especially important in the K12 arena when children are first exposed to massive amounts of media saturation.

Librarians need to not only be aware of users’ information seeking practices and the tools that students use - such, as Google, Facebook, Wikipedia and YouTube - but also to acknowledge these tools and practices, so that they have a platform on which to help the user construct true information seeking skills. A key part of this is teaching users how to formulate questions so as to conduct a more effective query. Information literacy is best taught according to the constructivist theory, in which students are actively engaged and guided in the development of their own information literacy. One factor that is sometimes overlooked is that students sometimes view the library as an alien world in which it is difficult to locate the items they are looking for. Librarians should take the time to introduce students to the library and show them how it works, including how material is classified, where different types of media are located, and how to use the tools, such as OPACs and databases to find what they are looking for.

Teachers and librarians should be open to learning about new technologies and new ways of finding information so they can teach to the students’ present - and future - experience. Teachers are not always involved in the selection of computer-based resources, as those decisions are often made at a higher level, leaving teachers to feel somewhat alienated from the
tools and technologies they are required to use. In keeping with the awareness of tools that students currently use, information systems should therefore be designed with the users in mind. Again, this could be a point at which teacher librarians can bridge the gap between students’ current knowledge about finding information online and true information literacy.

To teach information literacy effectively, librarians must first assess the perceptions of information and information literacy held by students who often perceive the totality of information literacy as being able to find anything on the Internet. Librarians should be aware of the habits that students bring to their information seeking experience, such as “berry picking”, in which users develop an idea for a query, do the search that leads them to another query, and so on. When the users become frustrated, the librarian has a prime opportunity to intervene and teach the student more useful information seeking skills.

Colleges should foster information literacy especially through collaboration between faculty and library staff. In the academic setting, integrating information literacy into the social sphere of the students (such as having library resources available in residences) as well as into the curriculum throughout all stages of the college experience does more to foster information literacy than by having a single information literacy class in the freshman year. Integration of information literacy also helps librarians stay aware of the curricular requirements of students, allowing them to be able to meet their needs.
Appendix A – Educational Theory References


Appendix B – Curriculum and Assessment References


Appendix C – Collaboration References


Appendix D – 21st Century Skills and Information Literacy References