

ED590 M/4 Learning Theory and Human Development

Part I: This Day in History

For my 6th grade Media/Technology class, I introduce the concepts of Internet research using a simple lesson that involves students looking up historical events that happened on their birthday. The prerequisites for this lesson include the ability to launch a web browser, enter a web site addresses into the address window and be able to perform simple searches in kid-friendly engines such as Yahoooligans. The ability to use Microsoft Word and PowerPoint is also helpful. These skills are taught in class prior to this lesson. The description of this lesson varies slightly from below and has been modified to fit the parameters of this module. This lesson, in its intended format, will be available in my worksample.

I introduce the lesson by discussing historical events that have occurred throughout our time. Furthermore, I assert that many historical events have happened on each student's birthday. I instruct the students to draw on their previous knowledge of the computer and the Internet to search for historical events that have happened on their birthday and to make a list of some of those events in Microsoft Word and to create a PowerPoint presentation. I purposely do not elaborate on how I want this to be done because I would like to assess the level at which each student is able to accomplish this with little assistance available.

I believe this lesson exhibits the following characteristics of Piaget's theory:

- Asks students to explore and discover on their own with little "direct teaching" assistance from the teacher.
- Allows students to make mistakes and to learn from them. The road of active discovery has many pits in which one can fall into but what is on the other end is well worth it in terms of meaningful learning.
- Encourages students to ask questions of themselves and to search out their own answers.
- Promotes assimilation and accommodation. Students can relate this activity with something they are familiar with, their birthdays.

I really like this lesson because it takes something of interest and importance to the students and relates it to an activity in class. By providing this relevance, students will naturally be more interested in the information that they find, have more confidence in how they obtained that information and be more independent in their procedural and intellectual process. I know from experience that this lesson will go over well with the students. As one of the first Internet activities, there is a high level of interest and even excitement because for many of my students, this is the first time they have been truly exposed to the Internet. Our social studies teacher has expressed interest in this activity

for their class because of the reports she gets when students come back from Media/Tech class. One student was particularly excited that his birthday was the same as a scientist that he was researching for another class!

As an activity, this is a winner in most aspects. The biggest shortcoming for this lesson, with respect to Piaget, is the fact that although most of my students are in the concrete operational stage, I haven't really addressed it in this lesson. The lesson is more about active discovery and creativity rather than pure logic. Procedural thought process is emphasized in that students must decide which steps to take to undertake the activities of the lesson. Hopefully, as I become more experienced, I can adjust my lessons accordingly.

Question: How would one address Piaget's concrete operational stage in a lesson deplete of logical activities?

Part II: Integrating Vygotsky

After reviewing this lesson "This Day in History", I believe Piaget offers an excellent foundation for developing an inquiry learning activity. As discussed in the previous section of this module, this lesson asks students to research events that happened on their birthday. There is no formal guidance on how to achieve this goal and therefore students are required to be independent thinkers and to come to their own conclusions as to how to finish the activity. As much as the students enjoy this lesson, I believe Vygotsky's theories can provide additional elements of learning. I noticed that students became somewhat frustrated because there was no clear sequence of steps in this research activity. In my aim to provide a purely Piagetian model, I provided only minimal teacher direction. Students were active but not always focused on their learning. To address this problem, I referred to Vygotsky's Zone of Proximal Development which differentiates between two levels of development: "the actual level of development achieved by independent problem solving and the potential level of development reached with the guidance or collaboration of an adult or a more capable peer." (Mahn) In addition to teacher direction and more clearly defined procedures, I realized the benefit of having students pair up and work with one another. I would pair up students based on their abilities. My goal would be to pair up a student with a high level of background knowledge with a student of lesser proficiency. This addition to my lesson reflects Vygotsky's belief that student learning can be increased with assistance of another's expertise.

I think this variation of the lesson adds much more focus and direction to the student. I expect students will be less frustrated (and they have) as they work through the tasks before them. By providing a procedure list, direct teaching and peer coaching, students will make better use of their time and be on a more accelerated learning curve.

While I prefer this lesson variation over the one based on Piaget, it still has shortcomings and problems. Some students will want to work alone and not with a partner. Concept connection is not addressed. The relationship between different software programs is not readily apparent. By including some appropriate direction into the inter-relations of software packages, students will be better critical users of information technology.

REFERENCES

Mahn, Holbrook. "Vygotsky's Methodological Contribution to Sociocultural Theory." Remedial & Special Education Nov/Dec 1999 : 341. MasterFILE Premier. EBSCO Host. 11/30/00 <<http://ehostvgw14.epnet.com/print2.asp?>>

Question:

How is Vygotsky's theory complementary and/or contradictory with that of Piaget?

Part III: Integrating Bruner

"While Piaget related each mode to a specific period of childhood development, Bruner saw each mode as dominant during each developmental phase, but present and accessible throughout." (Hollyman) Bruner's notion of spiral organization builds on Piaget's linear stages of development. Although Bruner agreed with Piaget regarding effective learning by personal discovery, he believed that students acquired knowledge enactively, iconically and symbolically. Vygotsky and Bruner agreed that students need teacher guidance when necessary so that students can reach their maximum potential. Vygotsky and Bruner also agree that learning must be meaningful and that previous experience and knowledge is an important component of the active learning process.

The three guiding principles of Bruner: (Byrn)

1. Instruction must be concerned with the experiences and contexts that make the student willing and able to learn (readiness).
2. Instruction must be structured so that it can be easily grasped by the student (spiral organization).
3. Instruction should be designed to facilitate extrapolation and/or fill in the gaps (going beyond the information given).

Readiness

With guidance from the teacher and peers, students better understand the mechanical procedures during this research activity. However, skills are taught not as a cohesive unit but as individual parts with no perceived inter-relation. To better reinforce the lesson, I

need to have the students understand the capabilities of different software packages and to use critical thinking skills to choose (and properly use) a program for the particular task at hand. To do this, I would introduce the programs and what their basic capabilities are and ask leading questions as to how they could apply the software to their activities. By guiding the students to devise their own solutions to a given problem, they will become interested and excited about applying their knowledge.

Spiral Organization

In order to better grasp the concepts of Internet research, I plan to revisit this lesson in the future with more applied knowledge tasks. By doing a "dry run" now, students will become more familiar with the processes of research. The next time the lesson is introduced (with revised and more involved activities based on previous activities), students will not need to focus so much on the mechanics of the activity but rather be extend their knowledge base beyond what is directly taught.

Going Beyond the Information Given

One of my goals as a teacher is for students to create their own learning situations. By applying Bruner's preceding guiding principles, the next natural progression is for students to take their knowledge base and expand it in their own distinctive manner. The Internet is ripe for this type of independent learning. There are many tangents to explore and it will require a focused, critical approach for students to perform to their individual potentials.

I think this is the culmination of the lesson (we'll see after I review the next section on Constructivism). Piaget is leading to Vygotsky who leads to Bruner. I see the three theorists as building on each other's ideas and expanding them to reflect the nuances of their individual views. Given proper individual guidance, I feel most of the students can excel with this higher order of thinking expansion of the activity. I also think that by revisiting this lesson in the future with an additional knowledge base will appeal to students and increase their confidence in learning.

I am not sure what is missing from this activity revision. As stated before, I see a natural progression from the theorists and a culmination, at least in my mind, of learning skills in this Bruner based revision.

REFERENCES

Hollyman, David. [Jerome Bruner: A Web Overview](http://au.geocities.com/vanunoo/Humannature/bruner.html). Massey University. 11/14/00
<http://au.geocities.com/vanunoo/Humannature/bruner.html>.

Byrn, Tormod. Old and New Lessons of Jerome Bruner. . 11/30/00
<http://oaks.nvg.org/wm1ra2.html>.

Question: Do you see Piaget, Vygotsky and Bruner as separate, independent theorists or do they build on each other's concepts?

Part IV: Constructivism

The theory of constructivism expands the work of Piaget, Vygotsky and Bruner. I can apply the following components to support constructivist ideas in my classroom.

1. Put students into situations where groups debate, discuss, research and share.
2. Use a questioning strategy that builds upon student background knowledge and promotes independent problem solving.
3. Assessment should be authentic and meaningful.

Put students into situations where groups debate, discuss, research and share.

A previous variation of this lesson had students being paired up to collaborate and assist each other. In most cases this was successful and in some cases there seemed to be a synergistic learning effect. Varied students were able to draw upon the other's background knowledge and abilities. To take collaboration further, a variation of the lesson could include having class discussions about formulating procedures and strategies. Toward the end of the lesson, presentations could be made by students to share what they have learned about historical events that occurred on their birthdays. Class discussions that draw upon previous (and current) experiences can make learning more meaningful and relevant.

Use a questioning strategy that builds upon student background knowledge and promotes independent problem solving.

By setting up class discussions, I can act as a facilitator to encourage open and thought provoking sharing of ideas. Students in this situation will be able to draw upon a larger pool of knowledge than by themselves or with just one other peer. By asking open ended questions that pull from previous knowledge and lead them to formulating their own methodology, students will better understand the process and perform their tasks more efficiently and effectively.

Assessment should be authentic and meaningful.

Throughout the lesson I will be applying formative assessment techniques in gauging student progress. By observing students working with each other I can make note of student understanding toward mastery of a specific concept. I apply constructivist theory by using my project-based lesson to assess students throughout the activity, not just at the end. The culmination of the project is a presentation which is a celebration of their achievement. Students feel that their assessment is more meaningful because they are being graded on their work and participation throughout rather than a standard pen and paper or standardized test. I believe the Constructivist approach to assessment can help alleviate test anxiety and is more meaningful to the educator.

By applying these three components of Constructivist theory to my lesson, I believe the students will be even more engaged and active in their learning. Open-ended questioning strategies promote critical thinking and stimulate discussion amongst students.

REFERENCES

Colburn, Alan. "Constructivism: Science Education's 'Grand Unifying Theory'." Clearing House Sept/Oct 2000 : 9. MasterFILE Premier. EBSCO Host. 12/01/00
<<http://ehostvgw1.epnet.com/print2.asp?>>

Question: What will be some areas of learning theory that we will continue to improve upon in the 21st Century?

Capstone

It is important to apply the concepts of Knowledge Growth in Teaching to my teaching experience. It provides a set of goals and parameters for which to plan and implement teaching strategies into my classroom. Constructivism is closely tied to this concept. Designing lessons that allow students to independently discover their own methods and procedures sets up more meaningful learning experiences that they will be able to draw upon in the future. Proper leading questions and meaningful class discussions can lead to a more rounded reflection of one's own experiences relating to their own individual learning. Another critical piece of the Knowledge Growth in Teaching is the importance of authentic assessment. This meaningful approach to measuring learning goals is beneficial to the student by targeting specific areas development. It is a benefit to the teacher as well by assessing the students' learning throughout the curriculum.

Piaget, Vygotsky and Bruner built the foundation for many of the concepts in the Knowledge Growth in Teaching. Piaget influenced future educators with the importance of active learning and discovery. Vygotsky promoted strong peer relations and effective

teacher guidance (Zone of Proximal Development). Bruner stressed the importance of building on students' knowledge base and revisiting concepts throughout the curriculum (Spiral Organization). Open ended question strategies, authentic assessment and cooperative grouping are all key components of constructivism and has had an impact on the development of the Knowledge Growth in Teaching. Educators of the 21st Century can learn valuable teaching strategies from these 20th Century theorists.

Am I a constructivist? As a second year teacher, it is difficult to say that I have achieved such a high standard as a pure constructivist. I compare my current year experience as a teacher to last year and I do see more constructivist approaches to my style. I have become more confident in the classroom and therefore feel the strategies are more of a natural progression rather than forced technique. As I learn more about effective teaching strategies, I strive to use my new knowledge in my classroom teaching and lesson planning.

REFERENCES

Knowledge Growth in Teaching. OSU PTE Handbook.

Question: What would a pure constructivist consider crucial in a classroom setting?