

Alan Wayman

Situated Cognition: to Situate or not to Situate

Everyone learns from the places they live in, the groups of people they interact with, the books they read and the television programs they watch. There is a context for everything we learn, and a way that we perceive those contexts. Knowledge or truth may be found in one or multiple contexts. According to proponents of Situated Cognition, the greatest amount of learning will take place in the ideal context for that knowledge. How do we teach in classrooms so that the information will transfer to the workplace? In situated cognition we go beyond the *what* and look at *how* things are applied in learning. Our students are not much different than the Brazilian children that could do complex math calculations in their head, but when given a math problem in writing they were unable to accomplish it. Only with our school systems today, are we teaching students to do complex math on paper and not applying it to the real world. In this paper, I will address the role of context in education. I will also identify experiences in my life where I have seen contextualized learning.

When David Merrill came a few weeks ago and gave a speech at the ITSA meeting, he talked about going to BYU-Hawaii and working with the entrepreneurship business program. He said that in a business course the professors were using these grand examples of hotel chains and multi-million dollar businesses, but the students didn't think they could ever start a business like that. The majority of students were from islands or from lower socio-economic backgrounds, and they needed more applicable examples like pig-farming and starting a restaurant. In a different context; such as a Harvard MBA class, the hotel example would have been perfect. We all come from different backgrounds and thus we need a context that is applicable to us, to facilitate our learning.

I recently became interested in learner-centered education versus curriculum-based education and how situated cognition fits in the learner centered paradigm. In our current educational system students must fit the standard, progress or fail. In learner-centered education a student's different

learning styles, interests and current knowledge are assessed and he or she works at his or her own pace. It would be assumed that learning would be more effective if it were like real world settings than through lecture. For example, it seems that the students that are the best readers in school are the students that have learned to read at home. For some students that didn't learn how to read at home or somewhere else, reading out loud in a classroom can be a intimidating and embarrassing experience. However, if the students read in more informal settings such as in small groups and experience good models, then these students can gain an implicit understanding of how to read and then be able to make sense of the explicit instruction.

Are students just learning how to succeed in school, rather than learning skills that will help them survive in the workplace? With our separation of learning subjects into Math, Reading, English and such, are we becoming so compartmentalized in our instruction that the learners cannot transfer what they learn to different areas of knowledge? Or do we think that another teacher will instruct the student all they need to know? For example, a teacher in a Music class would focus primarily on teaching the students how to play their instruments when they could also be reading about the great classical composers, learning about fractions using music notation, or about the science of how their instrument is made. Students are naturally inquisitive and will question how a subject is relevant, why they need to learn it, or when they are going to use it.

Children who are growing up learn at home in a different manner than in the classroom. Parents mostly teach and guide rather than assign reading and story problems. Most parents take a come-and-ask-me approach to teaching rather than lecture-type teaching. Parents often don't know answers to questions and so they say to "go look it up" or they guess and may lead the child astray. How expensive would it be to have one teacher for every student, or to have students travel to a volcano to learn about one? These experiences can be of great benefit and enrich the learning experience, but are in most cases impractical. I learned a lot more about Europe and Brazil by traveling there than by ever reading a book about them. Likewise, I learned more Portuguese by speaking it to Brazilians than in

the classes that I took. Brown et. al. claims that “all knowledge is... like language,” so the best way to learn knowledge would be to be in a situation where the knowledge is used.

Problem-based learning can help students learn a lot more than they would normally learn by rote memorization. This method originated in medical schools as students go through and learn by doing and has proven very effective. These medical students apply what they learn in meaningful ways rather than a jumbled set of terms and definitions. Students memorize and learn the material because the situation demands it. If each problem were like a tree, by using a problem-based approach you would plant the seed and then as you researched and found more about the problem your tree would grow. If you just memorized random terms, it would be like taking branches and leaves from multiple trees and connecting them together with glue or duct tape. You would still have a tree but the one that has roots would be a lot stronger when the wind blows.

Cognitive Apprenticeship

As I entered my orchestral community of practice and cello performance, I would have private teachers to help me learn the methods and skills needed in that community. In taking lessons from these teachers, I was an “apprentice”. The instruction would be customized to my level as I worked towards greater levels of proficiency. My teachers would first play the whole piece of music or model the piece and then I would practice and work on the piece. Then as I would learn the piece the teacher would show areas that were good and those that I could improve. Eventually, I would be able to perform a piece without the help of the instructor. This fading procedure would occur with each piece but as I became more proficient, less modeling was needed. As I learned new techniques and methods, I would share them with other cellists in my orchestra. In turn, I would ask for advice or help from those that had more experience than I did.

I know one cellist that plays very well even though he has never had a private lesson. He has learned from and observed his peers in the orchestral environment. He does not have as good technique as other cellists. However, he has learned from others in the orchestra and has taken

advantage of other people's help, and is able to play the music to the same level as the others in our section.

Teaching someone to play the cello cannot be done without human interaction. One could listen to music or read information on how to hold the bow or the cello. One could read for hours and hours on what needs to be done to produce a good tone and technique, but if a person never holds a cello or practices that information is not turned into knowledge. Likewise, if someone practices all the time but never with anyone else and not in a group, their progress will be limited to only to what the individual knows and will not gain the help and support from others around them.

In the Social Life of Information, Brown et. al claim that knowledge is hard to transfer from one person to another, whereas information is easily transferable. In teaching my brothers about video production, they have learned a lot from what I have taught them: editing techniques, camera stabilization, etc. I can give them all the information they need, but my knowledge and understanding of that information cannot be easily transferred to my brothers just by giving them advice. They must gain their own understanding from the information presented, which is more difficult than merely listening to the information. Thus knowledge is more difficult to transfer than information.

Communities of Practice

I find interesting the adage that “it isn't not what you know but who you know.” Situated Cognition would say that it is “who you know, that determines what you know.” I have been involved in an Association for Videographers and have worked as a wedding photographer and videographer. In the Videographers Association, I learned many things through observation of other people's work and tried to mimic or recreate what they did to learn. Also, I would ask questions to the more established practitioners in our field, about how they handled certain situations, which equipment they used, and how they were able to acquire their client base.

It is interesting how some people don't normally learn in a community of practice. For instance, autistic people have difficulties learning in normal school settings, so they need their information

presented in a different context, usually by one-on-one teaching. I was talking with a PhD student in the department who said that her autistic son learned how to read and write through playing a video game. He would play Sim City, that simulates a real city, and he learned how to count, read better, and type. The video game simulation was an anchored instruction where he was able to find solutions to problems in the game, that were similar to real life. He felt comfortable engaging in the game more than with other people and was able to control his environment which helped facilitate his learning. It would be interesting to see how he would perform in a multi-player game that required interaction online with others. Would he be able to learn in a online community of practice, or would the same autistic tendencies carry over from the real world to the virtual world? This example leads to even bigger questions of how we can use simulations to teach persons with disabilities or others that would normally have difficulty in a classroom setting.

In thinking about learning contexts, it seems that we learn something different from each context or situation that we come across in life. As we learn in different contexts, we may have a guide or we may be left to our own devices to figure it out. I think we all have different teachers for each of the different contexts of our lives. The more we seek mentors and apprenticeships, the more effective our learning will be. Rote and book learning will always exist, and through them we can experience things that aren't possible through physical constraints, but the greatest learning will take place in a work or social environment such as learning a foreign language in a different country, doing math in a street, or learning art history at a museum. I think we are making strides to bridge the gap between situated cognition and our present school system through Problem-Based learning and Learner-Centered education. I hope that our education system can improve so everyone has the opportunity and ability to reach their potential.

There is a lot of situated learning that takes place in music. Standing up when the conductor walks toward the podium. Finding things to get away with in rehearsal all come from finding the most of the situation. When people stand when the Hallelujah Chorus is played, some people understand the history behind the practice but many don't and just follow everyone else.

So if we are placed in a situation for long enough time will we learn what we need?

For example, if I am left with all the parts to make something without instructions will I be able to do it. If I am left for long enough with a calculus book will I learn how to do calculus. I would learn how to play rugby if I played the game a few times, but my knowledge wouldn't be as relevant if I just read a book about it. We can learn by ourselves in
is one Context better than another for learning?