Set Criteria of Constructivist Elements

		Station 1	Station 2	Station 3	Station 4
1. Construction of knowledge					
	a. Learning activities examine the learner's own prior conceptions and relate them to the new knowledge	√	√	√	√
	b. The environment focuses on a problem, project, question, or issue, with various interpretative and intellectual support systems surrounding it.	√	√	√	√
	c. Learners have access to resources for problem solving, such and information banks and discussion forums.	√	√	√	√
	d. Learners are able to affect the environment in some way by manipulating something, such as constructing a product, manipulating parameters, making decisions	√	√	√	√
	e. Hypermedia and multimedia is used primarily as a medium for the learner to construct knowledge, rather than as a medium to deliver instruction.	√	√	√	√
2. Process, not product					
	a. The learning process involves planning the goals, topics and relationship among topics.	√	√	X	√
	b. Learners access, transform, and translate information into knowledge through developing new interpretations and perspectives.	√	√	√	√
	c. Learners evaluate the quality and quantity of the assembled content.	√	√	√	√
	d. It is the process of constructing a perspective or understanding that is essential to learning; no meaningful construction (nor authentic activity) is possible if all relevant information is prespecified.	X	X	√	√

		Station 1	Station 2	Station 3	Station 4
3. Multiple perspectives					
	a. Forums for social negotiation and mediation provide learners opportunities to exchange perspectives and reconcile dissonant views.	√	√	√	√
	b. Learners are provided with opportunities for collaboration.	√	√	√	√
	c. Learners are able to reconstruct events by configuring a range of perspectives and points of view on a subjective reality.	√	√	√	√
	d. Related cases represent the real life complexity of problems.	√	√	√	√
4. Situated cognition					
	a. Constructivist learning environments support question/issuebased, case-based, project-based, or problem-based learning.	√	√	√	√
	b. Problems are interesting, relevant and engaging.	√	√	√	√
	c. All the contextual factors that surround a problem are described.	X	√	√	√
	d. The representation of the problem is interesting, appealing, and engaging.	√	√	√	√
	e. The problem manipulation space provides a physical simulation of the real-world task.	√	√	√	√

		Station 1	Station 2	Station 3	Station 4
5. Reflexive cognition					
	a. Students should be encouraged to become self-regulatory, self mediated, and self-aware.	√	√	X	√
	b. Instructors and learners examine personal beliefs, conceptions, and personal theories about the subject matter, teaching, and learning.	√	√	√	√
	c. Learners are asked to articulate their inquiry based problem solving process.	√	√	X	√
	d. Learners are encouraged to think-ON action, and think-IN action to develop professionalism.	√	√	√	√
6. Cognitive apprenticeship					
	a. Students, instructors, and personnel who support the learning receive appropriate training.	√	√	√	√
	b. Behavioural modeling of the overt performance and cognitive modeling of the covert cognitive processes assist learners in completing the tasks.	√	√	√	√
	c. Coaching allows the learner to improve personal performance to reach a skilled level in task completion.	√	√	√	√
	d. Scaffolding provides temporary frameworks to support learning and student performance beyond their capacities.	√	√	√	√

		Station 1	Station 2	Station 3	Station 4
7. Process-based evaluation					
	a. Assessment tests the learning outcomes. Assessment of skills involves using the skills, not describing them verbally.	√	√	√	√
	b. Self-regulated learners assume responsibility for setting their own goals, determining their own strategies and monitoring their own learning.	√	√	√	√
	c. Cognitive tools allow students to move beyond language to represent what they know in ways that are more highly structured and visual.	√	√	√	√
	d. Multiple perspectives are included in the evaluation process.	√	√	√	√

Comments

Station 1	I have had a hard time finding set criteria that wasn't present in the first station. I suppose that this means that I truly consider the project based, case-based, problem based learning to be a very contructivist concept. This being said I did disagree with the notion that no meaningful learning can occur unless all relavent information is prespecified. This seems counterintuitive since we have historically built all of our knowledge from simple experiments and experience. The second statement I had issue with was the idea that all contexual factors of the problem are described. The PBL in particular are usually large projects involving thousnads of possible permuations, making it impossible to describe them all. The formal idea of a jigsaw was new to me (although I do similar activities in my classroom), it seems a very efficient way to cover a great deal of information in a short amount of time. This process also helps to solve the problem of unfair distribution of work in groups (our group had one paricipant go MIA, frustrating). This was my first group project since I received my teacher training; it was both fun and frustrating. I loved the collaboration, but was definitely not used to having my direction questioned or challenged (great for me to see, or put myself in the place of my students). I often tell my student teachers that the clearer your vision of the lesson is in your mind, the more likely it be to succeed (this seemed the only drawback, since my vision was compromised by the process of collaboration and melding of ideas). I

	found I was married to my vision and made mental notes of how I would revise the group version of the lesson to fit my original vision (I feel if I am going to put this much time into a lesson, I want to be able to use it). I little off topic perhaps but overall I felt good about the process and learned a lot about myself for future group work projects, that I assume I will have in this master's program. CMAP I have decided to start again with my CMAP since I wanted to restructure it completely, due to its muddled format. The first take concentrated on the teaching practices of constructivism which combined theory, role of the teacher and student all in one branch as this was my only understanding of constructivism. I have decided to redesign the second attempt with a more delineated structure in mind. Starting with constructivism in the center and branching off of it; the roles of the theory, the roles of the teacher, the roles of the students, and the role of technology. This process just felt more true to my sense of constructivism at the moment and is reflecting my interpretation of the reading I have done so far. During Mathews, I learned about the different theories and theorists of constructivism which created a branch. From there I constructed a branch for the role of the teacher as a facilitator and constructor of the learning environment and the role of the student as a constructor of meaning as another branch. Technology became a branch as a tool for constructivism. Each branch represents a component of constructivism in my mind, but each component is connected and linked to other components.
Station 2	In each of the first two stations I have disagreed with the statement that in order for meaningful learning to take place that all relevant information is pre-specified. When I have my physics 12 students do their projects for the UBC Physics Olympics I purposely do not specify all relevant information, and I find the environment one of the richest that I help create as an educator. The students are engaged and they drive the learning that goes on in this situation, I am but an interested observer on their educational journey (I only Socratically "nudge" them away from disastrously time consuming mistakes by asking the ever hated question "did you think about that?") Station 2 was one of my favourites because of Garrison's article from this week's readings on elements of CMC. I have been waiting for someone to find social presence of more value, as I do. I am of the belief that students must have a teacher that makes them feel safe and sets a calm yet stimulating working environment, since it is students that are happy and in a healthy setting that will truly stretch their minds, search their feelings, and take those educational risks that we as educators love to see. I know I shouldn't be searching for personal validation in a course but it is refreshing to see one of your personal educational philosophies being given some credence, especially since it is this topic that I wondered how it could be accomplished in an online environment.

	CMAP Through my research of constructivism for my Lesson Study Essay, I learned more about the individual theories of Dewey, Piaget and Vygotsky. I also learned that constructivism has many theorists with overlapping and sometimes conflicting theories. In addition to theories of constructivist learning is the theories of instructional principles and applications. Here again there was overlap and contradictions. The process of discovering the complex and various theories and overlaps involved extensive planning and reassessing of my learning strategy. Finding credable sources was a challenge and involved using certain authors references to other authors to ensure legitamacy. At times, my self-efficay was low as I found various contradictions that produced puzzlement, however, as a seasoned learner, I reorganized my learning process and attempted to clear up the discrepancies. This produced a clearer understranding of the various theorists and their prospectives which I lacked from simply reading the course readings. Although I have not added all of this informaiton to my CMAP, I will attempt to add a lot of it next week after I have completed my essay and have a better grasp of the information and all its intracacies.
Station 3	One of the constructivist elements that I felt both webquests and webprojects seemed to lack were (2a) planning of the topics and goals since these project were basically predetermined from the beginning. Not to say that they are not valid educational tools, they are, they just may not be entirely constructivist (I would love to try one or two this year in my classes). The second constructivist element I thought might be lacking was (5a) the self regulation and self awareness of the students. This is do to the structure once again, it seems the more structured the task the less ownership students take, and the less room for metacognition. The third constructivist element I thought might be lacking was (5c) the opportunity for students to articulate their inquiry based problem solving process. This process in reconfirming the importance of students thinking about thinking and be able to take possession of their learning in a tangible way. It is not to say that information transferred through didactic processes aren't important too, they are, it is that as much as time allows for we should be introducing choice into our classrooms. I have started offering two homework choices in my math 11 class and telling the students that one is more challenging than the other, I was surprised that almost half of the students choose the more difficult choice. CMAP For my CMAP I have starting entering choice and linking more elements together. I have to admit that my essay on lesson study has been consumming most of my time, I hope to put in more effort to my CMAP next week.

Station 4	Apparently, it has taken me exactly this long to recognize the set criteria as a complete list of the instructional principles of Constructivist teaching and learning. After independently doing extensive research on constructivist principles, I was able to deduce all of the above principles except for maybe one or two. This was a long process of determining the different aspects of constructivism as each theorist had a slightly different spin or area of focus and some constructivist theorists contradicted themselves. Although I am disappointed in myself that I was unable to recognize the list until now, I am proud to say that I was able to complete a very thorough search of the literature and could have written the list myself based on the knowledge that I have gained in the last 2 weeks. Through my research, I was able to gain a better perspective of the context and theory behind the constructivist principles; I was able to construct a deeper meaning of each within the larger context of instruction. When I first read the set criteria, I was confused as to the meaning of some of the statements. I powered on though, interpreting them to the best of my ability and deciding if they fit the readings or stations. My knowledge of the statements slowly grew as the reading progressed and we worked through the stations, but it was the research and application of the research to the idea of lesson study as a constructivist principle that I finally gained a full understanding of the statements, which I know recognize as constructivist instructional principles or principles as they have been interpreted to instruction. What does this say about my learning and possibly others learning? Firstly, it appears that my research accompanied with my compare and contrast writing process on lesson study and constructivist principles provided a constructivist learning environment. When first learning about constructivist principles, my prior knowledge was limited to an understanding of lesson study which applies constructivist principles but does not explain their meaning or potential. This course developed an environment with resources, unbeknownst to me a list of constructivist principles as set criteria, information banks and discussion forums. With these resources, the course constructed investigations and encouraged the learner to make decisions and manipulate the information. The media was used as a medium to help me construct knowledge by making connections between the set criteria and all the constructivist readings and exercises. Through the process of doing Assignment 1, I was forced to pick a topic, set goals for research and plan for how I was going to develop connections between my topic and constructivist principles. Up to this point, my understanding of constructivist principles were that they were authentic contextual problem solving environments in which learners socially constructed meaning. As I amassed research and knowledge about constructivist principles within the greater context of the theorist's narratives, I was forced to evaluate the quality and quantity of the research and resources. Some theorists appeared to contradict each other and some papers had contradictory interpretations of the theorist work. In fact, one paper I read described the complexity of the interpretation of constructivism and its many theorists. I knew I was in trouble then. So I began to

	look more closely at the ways in which the theories had been interpreted for instruction. This produced a much clearer version of what the theory of constructivism could offer the learner. I used these instructional principles to interpret and develop my understanding of the many narratives of constructivism. Through this process I continued to set goals, evaluate what I knew and didn't know and monitor my learning process. Many times I would get lost in the research and would have to reassess my strategy of learning about constructivism. At times I thought that if I just kept reading and putting effort into my research, I would all of a sudden have a moment of eureka where everything came together. I soon gave up on that theory as my understanding became more clouded and confused with the amount of information and its contradictions and complexities. That is what led me to focus on the instructional principles and their applications. From there, I back pedaled to learn about the theories behind them. This proved to be a much more effective and organized strategy. As I accessed and translated this knowledge into new knowledge about how it applied to the method of lesson study, I constructed a new perspective and understanding of the principles and their applications. Throughout this process, I continued to discuss constructivist principles with my peers. Unfortunately, I did not engage in collaboration or discussion of the assignment with peers. I feel collaboration and social negotiation would have provided for a quicker and deeper understanding of constructivism and its many theorists and principles of instruction. Within the constructivist framework, assignment #1 provided a interesting and relevant problem of determining the suitability of lesson study as a constructivist strategy. It was an authentic assessment of a research strategy, one that might possibly be performed by researchers and educational professionals. The assessment was done in a real life complex context where I had to acquire the relevant information and assess the strategy based on the evidence and personal experience and understanding of the strategy and constructivism. While engaging in this process, I reviewed many papers and theories developed by researchers, theorists, and educational professionals. Through these readings, I developed knowledge about the process of assessing theories and activities in relation to student learning and other theories. The process of researching and reading provided a form of cognitive modeling that assisted me in the writing of my paper. Often the theorists wrote a narrative story about their understanding of student's learning. This narrative described an authentic discovery process in which I was able to follow along with the theorist's research and thinking process. The ability to see how and why researchers made their conclusions about student learning gave the concepts context and enabled me to develop a deeper meaning of their conclusions. I used the modeled thinking process of professionals to analyze of lesson study strategy. I also received coaching from the professor in the form of feedback on my essay structure which gave me insight Secondly, it is the process of reflecting upon this learning experience that is giving me further insight into my learning

	process and the benefits of constructivist principles in my own learning. Without the process of the set criteria, assignment 1 and the connection between lesson study and the constructivist principles, I don't think I would have developed an appreciation for the complexity and power of this learning theory and it applications. CMAP The more I know about these theories and the more I research them, the more I am convinced that the CMAP process and product are nothing more or less than a visual representation of my personal journey through this course. I started with a simplistic and linear-logical-sequential perspective of constructivism and its instructional processes (mathematician in me I guess), but since then I have been convinced that limited view must be corrected, hence the abandonment of CMAP #1. CMAP number two was conceived with four major pillars: the role of the theory, the role of the teacher, the role of the student, and role of technology. It is for this reason the teacher is portrayed both as learner and expert, a student of the theory and a conduit of its will. The flow of constructivist strategies from the theorists through the teacher to the students left me with a problem, it seemed that although the theories are important, in practice it doesn't matter how Vygotski envisioned a process or Dewey conceived of a practice, it is how the teacher internalized the theory and how the teacher envisioned the lessons. I perceive the teacher, me, learning about constructivism through constructivist methods (This course with its set criteria and CMAP), but also learning within the classroom in a constructivist way as I teach my students in a constructivist process. It is for these reasons that the theory pillar seems so underrepresented on my CMAP; the theories are imbedded in the teacher role and the student's role. It is also no wonder that the technology pillar is sparse as well, since technology is an important tool it is the combination of students and teacher that give technology its constructivist element (I often tell my students that computers are neither good nor bad they are a tool that performs, not as we wish it to, but as we ask it to). Once again I am convinced that the central themes of constructivism belong to and are products of, the interactions of teachers and students on their mutual approach to make meaning.