Developing a Moodle Course as an Engaging and Collaborative Teaching Tool to Correlate the Common Core with K12 Videoconferencing

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Abstract

This project was designed to develop an online engaging and collaborative teaching tool for educators within my region on how to correlate the common core with K-12 video conferencing. I created an online e-learning platform in Moodle for educators to collaborate and share ideas anywhere at any time due to the fact educators may lack time and professional development opportunities to gather this information elsewhere.

Not only will my project showcase my Moodle course, but also this opportunity will allow me to illustrate my results on the following learning theories of cognitive and constructivist and their principles to the plugins within the Moodle course content. Cognitive theories will include the six principles by Clark and Mayer and constructivist theories will include the principles by Allesi and Trollip. The overall achievement is to design a digital prototype that provides the opportunity for me to educate and facilitate to educators and to also have them educate and facilitate with others using the various Moodle plugins provided.
Acknowledgement

I would like to thank my family and my wonderful husband and Cattaraugus Allegany BOCES for supporting me through my endeavors at SUNYIT. Also I would like to extend my thank you to my professors Dr. Steven Schneider and Dr. Russell Kahn for valuable instruction, course application, and reviewing of my thesis. The purpose of my thesis is to learn, enhance, and apply myself within my current career working in the field of distance learning.

This thesis provided me valuable information on the following cognitive and constructivist learning theories, principles, and how to apply these theories and principles within an online course. I also learned more information about the instructional side of course design and was provided the opportunity to develop my own Moodle course.
Project Introduction

Within the last ten years, K-12 interactive synchronous videoconferencing is paving the way for many opportunities for educators and students to collaborate and engage in project based learning experiences over long distances that were not possible many years ago. Due to the affordances of high speed broadband technology and the lowering costs of technological infrastructure and endpoints, educators and students are now able to see and hear in real time other educators and students from all over the world. Videoconferencing opens the door to many endless curriculum possibilities allowing educators and students to gain better concept of subject matter beyond the school’s brick and mortar walls and opening the world into their classroom.

With emerging common core standards in K-12 education, videoconferencing can be an added tool to curriculum making it beneficial for students. Beneficial because this technology allows students to experience subjects that they might only read about or see things that their local community does not offer. It can heighten students’ motivation, memory retention, and improve communication and presentation skills. The visual connection and interaction leaves a distinct impression and provides a forum for a greater connection with the outside world (Carr, 2007). In other words, “videoconferencing opens up a new dimension for projects and collaboration” (Norwicki, 2013).

The problem is not all educators understand how this technology works and it how it can correlate to curriculum that can benefit students within their classrooms; therefore, they can be reluctant to trying it because “teachers need to know how and why to use technology in meaningful ways in the learning process for technology integration to work” (Gorder, 2008). Less tech savvy educators need professional development to assist them into understanding how this technology all works and how it can be implemented into their curriculum. Lack of time and
funds can provide a barrier for professional development since time is limited for the educator nor the districts may not have the funds for formal trainings.

After reviewing the question on why educators are reluctant to try out this great opportunity and what could be done to assist, I came up with the idea of creating an online e-learning course environment. The course environment will provide educators the opportunity to engage and collaborate on the topic of correlating the new common core standards with K-12 videoconferencing. This online e-learning management system affords the opportunity for educators to learn and communicate with flexibility at their convenience anytime and anywhere.

My online e-learning management system prototype is Moodle. Moodle is a free, open source, e-learning system platform or VLE (virtual learning environment) that allows educators in creating effective blended or completely online courses for students to remotely access from anywhere and at anytime. Moodle, also known as a learning management system (LMS), is an acronym that stands for Modular Object-Oriented Dynamic Learning Environment (MOODLE). The Moodle LMS provides the opportunity for instructors to create personalized and active learning environments that focus on student interaction and collaboration within the content, according to Moodle.org. Moodle comes with many plugin features that provide added functionality and customization such as interactive activities. Some of the activities include games, quizzes, and tools for collaboration such as chat, forums, and wikis. Within each of these plugins can provide an engaging learning experience for the user.

For over six years, I currently work as the Distance Learning Support Specialist for Cattaraugus Allegany BOCES in Western, New York. My position allows me to be a spokesman and liaison for K-12 school district administrators, educators, technicians, and
students. Part of my job is to market, coordinate, and implement synchronous and asynchronous distance learning courses and to provide learning experiences through interactive video conferencing via a content provider or another classroom anywhere in the world. Over the last six years I have experienced more than 700 interactive synchronous videoconference sessions in K-12 schools making me an expert in the field of this type of technology.

New K-12 common core standard implementations in the last few years are changing education in the United States. “The standards address the fact that literacy demands in college, the workplace, and life in general are getting higher, not lower, and to thrive in an information-rich, digital global age, we need a highly literate population” (Powers, 2013). This reorganization of curriculum standards has changed my position immensely where I need to instruct educators that videoconferencing can be implemented to the curriculum they are already teaching.

There are many kinds of valuable digital media resources that can assist K-12 educators correlate and implement the common core into their required instruction. I will only cover a piece of this large common core media implementation puzzle on the topic of synchronous interactive videoconferencing. After careful thought and collaboration with my co-workers, it was decided that educators within my region needed to know more information about how to correlate educational standards to interactive videoconferencing and to start utilizing their conferencing equipment that has been collecting dust on shelves and closets (Lim, 2009).

Educators need an online professional development community that would help them gain knowledge about the videoconference fundamentals, common core, and also a forum and wiki area where they can collaborate and learn by sharing ideas:
A major challenge for busy teachers adopting PLC is the lack of time for face-to-face meetings where they can engage in extensive collaboration. One way to address this challenge is through online collaboration using digital tools for problem solving, planning, curriculum development, assessment, and reflection (Beach, 2012).

This is where I came with the idea of creating a virtual learning environment platform that allows the possibilities for educators to engage and collaborate on this particular topic.

**Research Questions**

This project addresses the main primary question of how we can use Moodle to create an engaging and collaborative platform that meets the needs of the educators to learn how to correlate the common core standards with K-12 videoconferencing content. The secondary questions will include: (1) How can the functionality of Moodle, especially with plugins, provide interactive and collaborative tools that will promote the goals of getting educators to try videoconferencing and relate it to common core curriculum? (2) In what ways can the following learning theories of cognitive and constructivist and their principles influence the design of the Moodle platform? I will have this project broken down explaining the primary and secondary questions by Method, Literature Research and Review, Project Design/Implementation, and Conclusion.

**Method**

The methods that are being utilized for this project are to apply the learning theories of cognitive and constructivist and their principles to the design of my Moodle course.

1. I first decided to select Moodle as my e-learning platform since it is a digital tool that has the ability to be accessed securely from anywhere and anytime for educator professional development.
2. Second, I examined the various Moodle plugin features that would be appropriate for the course. I gathered a better understanding of how Moodle’s plugin implementation is being utilized to create a more interactive and collaborative learning environment to personalize and promote active user learning.

3. Third, I tested Moodle plugins and created the course content. The course content provides learning experiences on the basic fundamentals of videoconferencing, information on the common core, and how to research, correlate, and implement the common core standards with synchronous videoconferencing. Also the course includes forum and wiki areas on where educators can interact, collaborate, and provide idea sharing.

4. Fourth, I previewed platform with colleagues to gain their feedback on the platform design before working on the final production.

5. Final production of platform

**Literature Research, Review, and Study**

For my literacy research, review, and study, a number of scholarly articles were read and analyzed and other Moodle courses from various educators within my region were studied; therefore, this research assisted me into answering the primary question of how to develop a Moodle course as an engaging and collaborative teaching tool to correlate the common core with K-12 videoconferencing. I decided to do a study and review other Moodle courses to gain insight of how other educators in my region had their courses arranged and did they apply the following learning theories and principles. I was surprised to find the results that many courses did not apply these theories. I found several courses were used as a dumping ground for files and links with no educator consideration beyond it being a tool that could do much more:
Learning needs to be interactive, reflective, collaborative and progressive. All too often, educators simply do not move beyond loading files and links in Moodle and into using the more interactive features, which so easily create opportunities for students to self-direct and regulate their own learning (Hollis, 2013).

Specific additional literature such as videoconference fundamentals, best practices, content programming ideas, videoconference technology integration, and the new NYS common core requirements were read and studied. I found there was much to be stated about videoconferencing in K12 education and that I decided to compile and break down some of the information down into small chunks of understandable content within my online course that would allow educators to get the most conclusive information quickly, conveniently, and from anywhere at any time (Hollis, 2013).

I first want to start off defining and explaining my secondary questions which will provide an understanding of Moodle and the relationship between the learning theories and principles to the content topics of choice that apply within my Moodle course.

**Moodle Plugin Functionality for Interactivity & Collaboration**

1) How can the functionality of Moodle, especially with plugins, provide interactive and collaborative tools that will promote the goals of getting educators to try videoconferencing in relation to the common core?

Moodle offers many plugin features that enable educators to provide their courses as much interactivity and collaboration as it needs to accommodate all cognitive levels and to promote active student learning. Why interactivity and collaboration is necessary for active learning important for teaching educators is because “technology actively in different contexts”
applies new technical skills that may keep the educator engaged and motivated (Gorder, 2008). It is important to keep educators engaged and motivated in order for them to want to continue to work in Moodle for all of this to be successful.

Since the Moodle LMS provides many plugin tools that support interaction and collaboration among its users, it can be difficult to figure out what is the best tool to the type of active learning process. Moodle LMS provides the shifting of focus from what the teacher does, and from the transmission of content, to the work of the student (UNSW Australia, 2014). I discovered a chart by UNSW Australia that effectively explains the steps within the learning process to what you can do within the Moodle platform.

Table 1 – What Can You Do w/Moodle Table adapted from Tomaz Lasic [http://tomazlasic.net/2010/03/a-prezi/], Gavin Henrick [www.somerandomthoughts.com], and Joyce Seitzinger [www.cats-pyjamas.net]

<table>
<thead>
<tr>
<th>Steps in the learning process</th>
<th>Learning activities</th>
<th>Moodle and other tools</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Introduce the topic or concept</strong></td>
<td>Overviews; Readings; Presentations; Websites; Discussion; Experience; Digital media</td>
<td>File; Folder; Page; Book; Narrated lectures; Video; URL; Forum; Chat</td>
</tr>
<tr>
<td>Is it interesting? Do I want to learn it? What might be involved? How does this relate to what I already know and can do? How might it be of use to me? How will it change me?</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Get to know more about it</strong></td>
<td>Lectures; Readings; Group discussion; Demonstrations; Asking questions; Being challenged to relate to earlier learning and experience; Interactive websites; Research projects; Digital media</td>
<td>File; Folder; Page; Book; Video; URL; Forum; Chat; Dialogue; Groups; Wiki; Glossary; Database; SCORM; Lesson; Narrated PowerPoint; Lectopia recording; External Tool</td>
</tr>
<tr>
<td>What exactly is involved? What are the concepts? How do the new concepts change the ones I already have? What is the scope and range? How is it applied? How do I understand it?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Try it out</td>
<td>Discussions among peers and with facilitators; Tasks; Projects; Constructing knowledge representations; Practical activities; Skills laboratories; Structured experiences; Role plays</td>
<td>Forum; Chat; Dialogue Groups; Team Builder; Group Selection; Assignment; Wiki; OU Blog; Glossary; Database; Lesson; External Tool; SCORM; Choice</td>
</tr>
<tr>
<td>-----------</td>
<td>-----------------------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Get feedback</td>
<td>Obtain feedback from self, peers, facilitators and teachers, clients, friends... Constructive feedback linked to criteria for a good performance</td>
<td>Forum; Chat; Dialogue; Groups; Team Builder; Group Selection; Workshop (peer review); Assignment; GradeMark; Turnitin; Rubric; Choice; Feedback; Questionnaire; Quiz</td>
</tr>
<tr>
<td>Reflect and adjust</td>
<td>Reflect and adjust through writing, discussion, contemplation</td>
<td>OU Blog; Forum; Dialogue; Feedback</td>
</tr>
<tr>
<td>Use it</td>
<td>Use it in: later activities; later courses; at work; small group sessions; capstone projects; simulations; role plays; labs; exams</td>
<td>Project based assignments; Groups; Team Builder; Group Selection; Forums; Wikis; Database; Quiz</td>
</tr>
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</table>
Learning is a cognitive activity that differs from a student to a student. Analyzing adaptability in an e-learning system has explicitly pointed out the importance of the modeling learners’ cognitive characteristics, particularly learning styles as the most explored cognitive features (Despotović-Zrakić, 2012).

As we all know, the one size fits all principle does not apply to every student when it comes to learning. This is where the various Moodle plugins provide an exception to making sure each student is engaged within their course. According to Demski, he discusses that “personalized learning may be "personal" but it’s also highly social. Collaboration and project-based learning both play a large role in the personalized learning model. When students collaborate on a team, they learn to assess their own strengths, and learn from their peers in areas where they have weaknesses. Project-based learning also presents a dynamic classroom environment that encourages the creativity, engagement, and drive necessary to keep students at the helm of their learning” (Demski, 2012).

Moodle provides this opportunity of project based sharing through its forums and wikis. Moodle offers hundreds of plugin features that allow many possibilities to personalize and provide active learning. I will only provide a list of plugin features that my Moodle course has. Functions include:

*Collaborative Tools & Activities such as Wiki’s and forums
*All In One Calendar to keep track of upcoming events and assignments due
*Notifications to let learners informed of deadlines, new assignments, and forum posts
*Multimedia Integration to insert video and audio
*Integrated Badges to motivate learners for participation
*Embedding of Internal/External Resources to allow access to information or sites

The various Moodle plugins afford the opportunity for students to work together and generate ideas. This is what I want educators to accomplish within my Moodle course is that for them to generate ideas, collaborate, and learn from each other. Also my Moodle course has an
embedded calendar that lists upcoming events; therefore, this calendar can also provide another avenue for idea sharing and collaboration on what educators could be doing within their classrooms. Why these plugins are necessary and desirable based on my observations from constructivist learning theories is Moodle’s ability of customization. Moodle instructors are able to “shape, or have the opportunity to shape, their own product” which provides the ability to promote “social interaction, collaboration, and connections” within the Moodle classroom (Evans, 2011).

**Cognitive Learning Theory**

The cognitive learning theory is basically defined on how our brains process information within the stimuli around us and then learns. In the case of multimedia learning, “people learn more deeply from words and pictures, than words alone” (Mayer, 1999). The cognitive theory of multimedia learning presents principles to assist in design of multimedia and e-learning with the presentation of graphical, textual video and audio information for optimal learning. (Clark, 2002).

According to an information design perspective by Alissa and Trollip, learning begins with perception and attention and that three main assumptions are needed to be relevant to allow this processing to begin such as (1) information needs to be received easily and taken into consideration such as font, size, color, clarity of imagery/audio, etc. (2) the position of the information such as placement of imagery to determine if we will notice it right away, and (3) differences and changes attract attention such as the use of various font sizes, colors, background changes, etc. (Alissa and Trollip, 2001).
Cognitive Learning Theory Principles

When it comes to online learning, cognitive perception and attention needs to take precedence for it to be effective for the learner. Why this is so important is because asynchronous online learning lacks the physical presence compared to traditional learning meaning users cannot see facial expressions of other users or the instructor. This is where the online blended approach to learning works because of interactive face to face conferencing is implemented. Online learning interaction needs to structured and systematic to allow participation and belonging first and foremost because of absence of physical presence (Garrison/Cleveland-Innes, 2005).

I reviewed and studied many literacy resources to find the six principles created by Ruth Clark and Richard Mayer could prove effective e-learning for my Moodle course.

For the past ten years, Richard Mayer and his colleagues at the University of California at Santa Barbara have conducted a series of controlled experiments on how to best use audio, text, and graphics to optimize learning in multimedia and the six media element principles can be defined based on Mayer’s work (Clark, 2002).

There are six fundamental principles for designing multimedia learning based upon specifically cognitive load theory and information processing theory that I wish to apply toward my Moodle course including:

1. Multimedia Principle - Solution: Graphics and words together are more conductive to learning than just graphics or words alone.
2. Modality Principle - Solution: Graphics with audio to improve learning
3. Contiguity Principle - Solution: Aligning words near graphics
4. Redundancy Principle - Solution: Just adding animation and narration and avoiding redundant text
5. Coherence Principle - Solution: Keep it simple, extraneous material is excluded
6. Personalization Principle - Solution: Use conversational style and tone
Evidence suggests that these learning tasks and principles work for professional adult learners and that research is based upon three learning processes which include dual channels, limited capacity, and active processing (Clark & Mayer, 2011). Dual channel includes adults having “separate channels for processing visual/pictorial material and auditory/verbal material” (Clark & Mayer, 2011). Limited capacity includes adults “actively processes only a few pieces of information in each channel at one time” (Clark & Mayer, 2011). Active processing in adults includes “when people engage in appropriate cognitive processing during learning, such as attending to relevant material, organizing the material into a coherent structure, and integrating it with what they already know” (Clark & Mayer, 2011).

How Cognitive Learning Theory and Principles Apply to Moodle

Throughout my Moodle course, I will demonstrate how the cognitive learning theory and principles apply with either the Moodle plugins or the content within the course design. These theories and principles will assist me into deciding what should and shouldn’t be added to my course to create the simplicity it needs to maintain educator focus and to making it collaborative and interactive:
Cognitive psychology focuses on learners' receiving and processing of information to transfer it into long-term memory for storage. Therefore, instructional designers have to consider different aspects beginning from chunking the learning content into smaller parts and supporting different learning styles up to higher concepts such as motivation, collaboration or meta-cognition (Mödritscher, 2006).

**Constructivist Learning Theory**

The constructivist learning theory is defined, according to Alessi and Trollip, is how we construct understanding and knowledge around us through our personal learning experiences. “In contrast, constructivism holds that the only reality (or the only one that matters) is our individual interpretation of what we perceive. Constructivist learning theory maintains that knowledge is not received from outside, but that we construct knowledge in our head. (Allessi & Trollip, 2001). Constructivism applies a variety of principles that influences the way content should be design in an e-learning environment. Allessi and Trollip state that instructional designers should take into consideration those methods “such as memorizing, demonstrating, and imitating are considered incompatible with the notion that learning is a process of construction” (Allessi & Trollip, 2001).

**Constructivist Learning Theory Principles**

According to Alessi and Trollip, learning should be viewed as learners actively constructing their own knowledge and teachers being the facilitators or partners within the learning process. There are information design principles that Alessi and Trollip mention that should be implemented to accomplish the goal of facilitating the construction this knowledge (Allessi & Trollip, 2001). These principles include:

- Emphasize learning rather than teaching
- Emphasize the actions and thinking of learners rather than teachers
- Emphasize active learning
*Use discovery or guided discovery approaches
*Encourage learner construction of information and projects
*Have a foundation situation cognition and its associated notion of anchored instruction.
*Use cooperative or collaborative learning activities
*Use purposeful or authentic learning activities
*Emphasize learner choice and negotiation of goals, strategies, and evaluation methods.
*Encourage personal autonomy on the parts of learners
*Support learner reflection.
*Encourage learners to accept and reflect on the complexity of the real world.
*Use authentic tasks and activities that are personally relevant to learners.

How Constructivist Learning Theory and Principles Apply to Moodle

Throughout my Moodle course, I will demonstrate how the constructivist learning theory and a few of the decided principles apply within my course design. This theory and its principles will assist me into deciding what should be added to my Moodle course that will incorporate active learning:

Moodle has pedagogical advantages since it was built in accordance with the teaching approach which emphasizes the construction of knowledge through active and interactive learning, and learning multi-sensory experience through multimedia. The design of Moodle is based on socio-constructivist pedagogy. This means its goal is to provide a set of tools that support an inquiry and discovery-based approach to online learning. Furthermore, it purports to create an environment that allows for collaborative interaction among students as a standalone or in addition to conventional classroom instruction (Kotzer & Elran, 2012).

Affiliations with constructivism and creating the Moodle platform include:

*All of us are potential teachers as well as learners and in a true collaborative environment we are both. Most activities within Moodle are constructed to allow users control of the shared content of courses. For example wikis, forums, glossaries, databases, messaging) (Evans, 2011).

*We learn particularly well from the act of creating or expressing something for others to see. Moodle has numerous affordances to permit representations of knowledge for sharing (Evans, 2011).
*We learn a lot by just observing the activity of our peers. Moodle modules will tag an entry with the name of the user, allowing class participants to see who contributed effort to a group task, such as a glossary entry or wiki page (Evans, 2011).

*By understanding the contexts of others, we can teach in a more transformational way. User profile allows class participants to provide information about themselves be it their location, cultural background, research interests, or other information they wish to share with the group (Evans, 2011).

* Learning environments needs to be flexible and adaptable, so that it can quickly respond to the needs of the participants within it (Evans, 2011).

**Moodle Course Prototype**

My Moodle course project prototype is located at http://moodle.caboces.org. To access the course, you will need to click on the link which will redirect you to it. You will want to log in as a guestsuny and password as guestsuny. Currently, my Moodle course has open guest access and account access; therefore, anyone currently can access the course to view but only account access can edit.
Project Design and Implementation

Application of the Six Cognitive Learning Theory Principles Within Moodle

Multimedia Principle
People learn better from words and pictures than from words alone according to Clark and Mayer. Within the image on the next page, I applied multimedia principle because I want the educator to view imagery and read about what synchronous videoconferencing is and looks like. Also I want them to get the basic understanding right away that videoconferencing can happen on various kinds of computing and mobile devices (Clark & Mayer, 2011).

Figure 2 - Sample Multimedia Principle Utilized in My Moodle Course
Modality Principle

The image below shows an example of modality principle. I included a short video in my Moodle course explaining how to search for a content provider using the CILC website. According to Clark and Mayer, having audio alone instead of using words and audio at the same time is less strenuous for user learning. It is too complex for the user to see and hear words at the same time (Clark & Mayer, 2011).

Figure 3 - Sample Modality Principle Utilized in My Moodle Course
Contiguity Principle

The image below shows an example of the contiguity principle that is displayed within my Moodle course. According to Clark and Mayer, contiguity is defined as the alignment of words with corresponding imagery. The contiguity principle is apparent because the labels of the types of devices used to promote videoconferencing are physically near the image (Clark & Mayer, 2011).

Figure 4 - Sample Contiguity Principle Utilized in My Moodle Course
Non Redundancy Principle

The image below shows an example of a non redundancy principle that is displayed within my Moodle course. According to Clark and Mayer, redundancy can affect learning when both imagery, audio, and text are present at the same time. It is better to only include imagery with audio or imagery with text but not all three together (Clark & Mayer, 2011).

Figure 5 - Sample Redundancy Principle Utilized in My Moodle Course
Coherence Principle

The image below shows an example of coherence. According to Clark and Mayer, individuals learn when extraneous words, pictures, and sounds are excluded rather than included. In other words, we want to keep the content simple and easily read (Clark & Mayer, 2011).

Figure 6 - Sample Coherence Principle Utilized in My Moodle Course
Personalization Principle
The image below shows personalization. According to Clark and Mayer, personalization is learned better in a conversational style rather than a formal style. Within my Moodle course, I started most assignments by asking a question to educators (Clark & Mayer, 2011).

Figure 7 - Sample Personalization Principle Utilized in My Moodle Course
Application of Constructivist Learning Theory Principles Within Moodle

1. Emphasize Learning Rather Than Teaching, Emphasize the Actions and Thinking of Learners Rather Than Teachers, Emphasize Active Learning - Constructivist Sample

There are a variety of plugins in Moodle that support active learning. Plugins include forums, chats, wikis, quiz, questionnaire, etc. Within my Moodle, I activated a few plugins (forum and wiki) will focus away from me as the educator to facilitator for the users to take an active role and generate ideas. In other words, for them to take ownership over their own learning. On the next page, the image shows plugins that I incorporated to promote active learning such as a forum for educators to discuss video conferencing fundamentals and a wiki to share their own ideas.

![Sample Within Moodle Course of Plugins That Support Active Learning](image)

*Figure 8 - Sample Within Moodle Course of Plugins That Support Active Learning*

2. Use Discovery or Guided Discovery Approaches

Discovery learning, a constructivist theory, is when a learner discovers facts about the world for themselves. Constructivism emphasizes the learner exploring, experimenting, doing research, asking questions, and seeking answers” (Allessi and Trollip, 2001). Within my Moodle course, I activated a wiki (image below) because I want learners to explore what is out there and discuss what they think are good areas as far as videoconference content that they can use in the
classroom and to also share with other educators.

Figure 9 - Sample WIKI Within Moodle Course of Plugins That Support Discovery Learning

3. Use Cooperative or Collaborative Learning Activities

According to Allessi and Trollip, cooperative and collaborative learning have the advantage of having participants play the role of the learner and teacher which will foster motivation and social skills (Allessi & Trollip, 2001). This is the main reason on why I added a few forums within my Moodle course. The goal is to have educators from different school districts collaborate and generate ideas on different videoconference possibilities. Also the forums are there for teachers to ask questions and provide answers for other teachers. What is wonderful is when an educator makes a post to a forum, that post will automatically be emailed to their
address and the addresses of other teachers who are participants; therefore, it keeps the lines of communication open.

Figure 10 - Sample Forum Within Moodle Course of Plugins That Support Cooperative/Collaborative Learning

4. Encourage Personal Autonomy on the Parts of Learners

“Rather than instructors deciding the goals and activities of an educational environment, learners and instructors should negotiate and jointly decide the goals and activities” (Allessi & Trollip, 2001). This provides a sense of learner ownership which will increase motivation and make the learning more meaningful according to Allessi & Trollip. Within my Moodle course, educators will have the opportunity to discuss what they feel are great ideas on videoconference content that correlate to the common core standards. This will provide them a sense of ownership to that idea and motivate them to generate more ideas or comment on other educator’s ideas.

5. How can cognitive and constructivist theories and principles within the Moodle content can assist educators on correlating synchronous videoconferencing with the common core?

The cognitive and constructivist theories and number of principles mentioned help answer the main primary question of how to develop a Moodle course as an engaging and collaborative
teaching tool to correlate the common core with K-12 videoconferencing. The answer to all of this is that learning begins with perception and attention, therefore, if the course content is correctly designed around this cognitive theory and its principles, it will help assist into contributing active learning among its participants. That stated, active learning will allow educators in my Moodle course to construct their own knowledge by collaborating and engaging themselves and with each other “human to human interactions” on the topic of videoconferencing and the common core (Allessi & Trollip, 2001).

**Conclusion**

In order for instructors to have users engaged and collaborative within an online course, it is necessary for them to follow the learning theories of cognitive and constructivist and their principles to creating effective multimedia, collaboration, and usability that will continue to keep that user’s interest and willingness to learn (Powers, 2005). Various Moodle plugins allow this collaboration and interactivity to happen such in the case of my Moodle course. These plugins include forums, wikis, videos, handouts, and an interactive calendar.

After many years of working in the field of distance learning, I feel having educator discussions and ideas on the topic of interactive video conference in K-12 education can be an avenue for growth. Moodle will provide the opportunity that will allow educators at various districts within my region share information and correlate to what they are already instructing. The benefit will be teachers will be collaborating and sharing ideas with other teachers regionally.

My future plans are to receive educator feedback; therefore, this will assist me into improving my Moodle course so educators in my region have the benefit of gaining more
information. I feel this course will always be a working progress since there are always significant changes in curriculum within education. Moodle will also continue to grow so it can sustain the demands of making it as collaborative and engaging as possible.
Bibliography


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