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Answers to Questions:

1. What are the advantages and drawbacks of implementing constructivist principles in a course? What are some foreseeable problems if you were to follow the same principles in your course?

Constructivist principles allow students to build their own understandings of the knowledge rather than just learning through rote memorization. Often, when structured well, students are starting from what they know best and building on their strengths the way that they see fit. Students often take more ownership of their learning and build what is meaningful to them, so the learning is usually more engaging and long lasting.

Problems sometimes occur when students do not know how to organize themselves or if the student fails to see a personal connection to the material. In either of these cases a student can fall behind and the teacher may have to prompt them back on the right path.

2. What are the benefits and challenges in integrating technology into a conventional course in higher education? How can you ensure that students have a valuable learning experience?

Integrating technology into a conventional course can result in a richer, more engaging learning experience. With all the technology that is available, the variety of applications can reach students on many different levels depending on personal interests and learning styles. Technology allows for collaboration and social connections, quick referencing of information, online distance education, and in many cases, near immediate feedback. Technology can present learning material in various ways, be it text, video, audio, games and interactive presentations - resulting in experiential learning. Some of the challenges surrounding technology integration include lack of instruction and limited knowledge of technology uses - students must learn to use technology before it can be effective. Students must also be made aware of the way in which technology can be used to benefit and supplement their learning. Another challenge of technology is that technical problems do arise, and in some cases, can make learning aids inaccessible to students - resulting in frustration.

To ensure that students have a valuable learning experience, it is important for educators to begin by instructing and demonstrating how the technology is to be used. Clear directions as well as explanation as to why a form of technology is valuable for a learning experience is important for student's understanding. Finally, instructors must be approachable, available, and easy to contact regarding any questions or problems that arise. Prompt response and help from instructors can ease student's anxiety and remediate issues so that learning can resume.

Creative Technology and Pedagogy

An Additional Qualifications Course for Teachers

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Rationale

This interdisciplinary and constructivist course is designed to facilitate creative applications of modern technology to all curriculum. Educators in this course are encouraged to collaborate on a variety of projects that promote cross-curricular understandings and higher-order thinking skills when applied to technological applications. Educators will be introduced to a variety of software so that they may experiment with it and develop lessons in groups of their choosing. The culminating task will be to create a unit of study using one or more of the software tools introduced in the course. Educators will be graded on their ability to collaborate, think creatively, and develop integrated lessons that encourage their students to use higher-order thinking skills.

Course Objectives

Educators in this course will:

- build knowledge and understanding of a variety of software programs;
- develop an understanding of how technology can be used to facilitate higher-order thinking;
- learn to think creatively about how their students can apply their knowledge in a variety of subject areas, especially across subject areas;
- collaborate with a variety of educators from different subject areas;
- create meaningful lessons and a unit that promotes higher-order thinking and creativity in their students;
- and have fun playing with technology!

Online Participation: Weekly Journaling & Discussion Forum

In order for educators to gain a first person experience with using online technology, Pepper will be used as the online platform for this course. In addition to the weekly in-class lessons, activities and assignments, educators will:

- Update their online journal weekly: Documenting personal reflection, connections drawn from this course to previous experiences as well as express insight gained from learning experiences in the course.
- Participate in weekly discussion forums with their peers: Educators will be encouraged to interact and collaborate with others to construct their knowledge from the course. Discussion topics will be agreed upon by the educators in order to stimulate meaningful discussions.

Week 1

Introduction to creative technology applications

1. Educators are introduced to the course and to each other; Educators share their areas of

- expertise and their comfort level with using technology in the classroom.
2. Instructor demonstrates a quick overview of a variety of software platforms used throughout the course.
 3. Educators are introduced to Bloom's Digital Taxonomy and begin to brainstorm ways in which technology can be implemented to encourage higher-order thinking.

Learning Purpose: A "Minds On" to begin to engage educators in a discussion about creative applications of technology

Resource: Bloom's Digital Taxonomy:

<http://edorigami.wikispaces.com/Bloom's+Digital+Taxonomy>

Week 2

Introduction to Education Technology Platforms

1. Educators will share their previous experiences (if any) using technology platforms, either as a student or educator, and will discuss their thoughts and preferences.
2. Educators will be introduced to current platforms available for education, such as Connect2Create, Pepper, Blackboard, WebCT , Moodle, etc.
3. The instructor will demonstrate how such platforms can be integrated into the course structure.

Learning Purpose: To be exposed to the variety of online platforms available to educators, with ideas for integrating technology into traditional lessons.

Week 3

Applications and Technical Platforms

1. Educators will be introduced to the various applications available within technology platforms.
2. The instructor will present and demonstrate applications such as forums, discussion boards, chat functions, course outline/schedule, resources.
3. Educators will use the course's Pepper platform to experience and explore the tools available within an online platform.
4. Educators will discuss the potential advantages or disadvantages of using such platforms, and offer possible solutions to address any problems. Ideas for improving or expanding online platforms will be discussed.

Learning Purpose: To use a meaningful and authentic context - Pepper - to gain real-world experience using an online platform for education.

Week 4

Smartphones and iPads

1. Educators will share apps that they use regularly both for their own personal use and for

the classroom. Discussions around the advantages of using handheld devices as opposed to laptops and/or stationary computers.

2. Educators will be introduced to the apps LaDiDa (reverse karaoke program to write original music) and NFB PixStop (digital animation).
3. Educators will brainstorm ways to apply both these apps and any others to create integrated lessons.

Learning Purpose: Creative application of music and animation through the use to handheld digital devices.

Week 5

Livescribe Smartpens and Photoshop

1. Educators will be given Livescribe smartpens and booklets and are briefly shown how to write and record with them. Educators will brainstorm ways that the pen could be used in a variety of courses to facilitate learning (i.e., understanding a student's process in math class). Educators will be asked to think of ways to apply the pen that could be used to differentiate instruction or accommodate students with learning disabilities.
2. Educators are divided into groups and each watch a short YouTube video prepared by the Instructor on one basic function of Photoshop (i.e., import images, crop, paste, layer, etc.). Educators then share in a jigsaw and teach the one function they learned to do.
3. Educators brainstorm a lesson applying Livescribe Smartpens and/or Photoshop to promote visual literacy in their subject areas.

Learning Purpose: Developing student visual literacy and understanding the student thinking process.

Week 6

iMovie and YouTube

1. Educators are given a digital cam and given a very short time to record a short educational film on any topic.
2. Educators upload the film to iMovie and receive a brief lesson on the features of the software (i.e., adding titles, splicing film, etc.).
3. Educators register for a YouTube account and add upload their film. They can choose to keep the film private. Educators embed their video to the course website.
4. **Culminating Unit introduced** to be presented in week 12. Students must pick their groups.

Learning Purpose: Understanding the basic functions of iMovie for teacher use (creating content for the web such as a flipped classroom example) or how to facilitate students using film.

Week 7

Audacity and Soundcloud

1. Soundscape Exercise: Educators are asked to bring a poem they enjoy to class. Working in groups educators are asked to break down the poem into key ideas and overall themes and then find objects to make sounds with that would represent those ideas.
2. Educators are introduced to the basic functions of Audacity (i.e., record, layer, change pitch, reverse sounds, etc.).
3. Educators use Audacity to create an avant garde sound composition to represent one of their poems.
4. Educators create a SoundCloud account and upload their composition to the website for presentation. Educators can embed their composition to the course website.
5. Educators brainstorm other possible applications for using sound in their subject areas.

Learning Purpose: Developing creative ways to use sound for learning.

Week 8

Adobe Connect and Google Hangouts

1. Educators work from home this week and Instructor teaches key ideas of working online by using Adobe Connect. Educators start the class by connecting through Adobe Connect.
2. Educators then register an account with Google+ and work on their Culminating Project Units online with their groups through video on Google Hangouts. Educators are encouraged not only to work with video to speak to each other but to use the built-in Google Docs feature to collaborate on their final presentation.

Learning Purpose: Introduction to working online through chat, video, and shared online documents.

Week 9

Websites and Blogs

1. Educators will be shown how to utilize web editors (such as Webs and Google Sites) to create web pages as well as Blogging sites (such as Blogger and Tumblr) to design creative online resources.
2. Educators will be asked to create either a simple web page or blog based on a topic of personal interest.
3. Educators will share their experiences creating their web pages or blogs, and will discuss what makes web pages or blogs successful and accessible.

Learning Purpose: Introduction to using web editors as well as experience using and designing creative web pages/blogs.

Week 10

Educational Video Games

1. Educators will be introduced to the world of educational video games
2. Educators will experience playing educational video games, and will discuss their learning experience and ideas for improving or modifying games.
3. Educators will be shown how to create interactive quiz games using “Socrative”.
4. Educators will be asked to create a short class quiz with Socrative using their own material, and present their quiz to the class.

Learning Purpose: To gain experience using games and creative interactive quizzes in order to engage students.

Week 11

Presentation Software: Powerpoint and Prezi

1. Educators will learn about presentation software and its applications in the classroom.
2. The instructor will demonstrate how Powerpoint and Prezi can be used to create interesting presentations.
3. Educators will be asked to create a brief, 2 minute long presentation using Powerpoint or Prezi, demonstrating how presentation software can engage students, and present it to the class.

Learning Purpose: To explore the creative ways that presentation software can enhance lessons.

Week 12

Culminating Unit Plan Presentations

1. Educators will present their Culminating Unit Plans to the class. Educators are asked to include the class in some activity from the unit in their presentation.
2. Educators are asked to share their Units on the online class website.
3. Educators complete a self reflection on their learning and submit it to the instructor.

Learning Purpose: Creative application and culmination of the ideas learned throughout the course. Develop practical resources to be shared with the members of the class.

Final Statement of Key Learnings

Jessica: As a preschool teacher, my experience with constructivist learning and technology applications in the classroom are vastly different from that of Matthew's. While the majority of the technology applications outlined in our course design would not apply to my young students, I have gained a lot of useful information for my own experiences as a student at OISE. The knowledge from this reading is incredibly useful for me in terms of following a more constructivist approach to learning for my preschoolers. The focus on learning as a social function and the

importance of experiential learning is key in early childhood, as well as the development of autonomy and self-regulation, and these are main components of constructivist learning. I will definitely use what I have learned about designing courses in the constructivist view in my future work.

Matthew: Constructivist learning is central to my teaching in both my Holistic course and Music courses at OISE. Through this reading and activity I have expanded my ideas and tried to find new creative ways to apply technology to education. It was interesting to find new ways to use software that I do not normally use in my classes, such as Photoshop. I can imagine new ways to engage my students in creative learning through visual literacy and hopefully inspire them to take this type of learning to their elementary and secondary schools that they teach in.