Professional Development from a Constructivist Viewpoint

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Introduction

Our students are digital natives. These are young people who are growing up in a world consumed by technology. From early on they had a tablet in their hands. They are comfortable with technology and are constantly seeking innovative ways to dive deeper into this tech world. These students are coming into our classrooms. They have the tablet in their hands on the bus ride to school, and they will have it the whole way home. Their minds are used to vivid images, high-action activities and quick responses. This is what holds their attention.

So why push technology? As classroom teachers or online instructors, we need to be ready for these students. Just as the modern child has progressed so must our teaching. We would be a disservice to our digital natives if we did not cater towards their needs and desires. Our job as instructors is to take standards and learning objectives and create meaningful learning experiences that fall into the crucial zone of proximal development for every learner. However, now we have the unique tool of technology. We need to use this tool to reach as many learners as possible and redefine education for these students in a personal and meaningful way.

Our objective will be to share a training session for a staff of teachers, assistants and administrators. During this training, we will be exploring the basic functions of Google's GAFE (Google Apps for Education) Suite products. To participating schools, these are the building blocks of their digital curriculum. To develop collaboration, organization and a strong sense of research, Google products are designed with our digital natives in mind. Keengwe, Onchwari, & Agamba state that "constructivism is an educational theory that emphasizes hands-on, activity-based teaching and learning in which students develop their own frames of thought." (2014) (p.888). The lesson that is presented will share theory-supported practices from a constructivist's

point of view as well as strategies from other theorists such as Gagne that will enhance learning for the teachers which will trickle down to the students.

Complete GAFE trainings are meant to be several sessions over the span of at least three months. It would be unrealistic to teach even the basics of all GAFE products in a one to three-hour time frame. Instead, three products will be presented to the teachers in this lesson plan: Google Drive, Google Classroom, and Google Docs. Not only this will be more meaningful for teachers, but allows for the instructor to alter topics and discussions as needed to control learning momentum. There is a unique strategy that was being utilized in a school in Denmark. Sorensen & Levinsen (2015) specifically found that "teachers and students used shared networks and cloud technology to create new dynamic frameworks for both the teachers' work with evaluations and for the students' peer evaluation" (p. 299). Strategies like this would encourage collaboration. The responsibility a student would need, yet the opportunities a teacher and student would have are unlimited in this kind of scenario. This is one of the main reasons we will begin this training with Google Drive. This will be a good way for the teacher to being the dynamic framework of connecting and collaborating through cloud-based technology such as Google Drive.

Literature Review

Studying human behavior is not an easy task. Working with humans can bring its own uncertainties. For this project, several documents were used that shared examples of constructivism in the classroom. I based my concrete theory knowledge from Driscoll's (2005) Psychology of Learning for Instruction. Gagne's theory of instruction, specifically his "Nine Events of Instruction, was used for the structure of the lesson plan as well as constructivism for the content of my lesson. These theories are learner focused and provide guidelines that are

essential for a well-rounded learning experience for adults or students. Scholarly articles were used to determine theory-based strategies that can be used in a virtual classroom or brick and mortar. In a journal by Keengwe, Onchwari and Agamba, learner-centered paths are discussed that can be taken when designing instruction with constructivism in mind. The authors then define an effective use for e-learning and how to successfully combine constructivism with e-learning.

In the Sørensen & Levinsen (2015) article we find several ways that teachers enhance learning in a digital environment. They focus on evaluations and assessments and discuss the importance of both the learner and the instructor participating in active and meaningful evaluations throughout the learning experience. This is an important to Gagne's nine events of instruction as well. Evaluation of student performance is crucial for a learner to determine progress. So (2012) discusses how to use resources to enhance lessons. One of the distinctions that is made in the article is the difference between dynamic and static resources. Although there are benefits to using both types of resources, dynamic resources are constantly changing and can make learning relevant to the real world. Many Google products are dynamic. Although in this lesson dynamic, by the definition of So (2012), Google products will not be explored, this lesson will help set the stage for when it is time to explore these products.

An argument against the constructivist approach can be found in the Kirschner, Sweller and Clark Journal. Kirschner (2006) argues that unguided instruction will lead to more guidance for individual students. However, Kirschner (2006) also states that "not only is unguided instruction normally less effective; there is also evidence that it may have negative results when students acquire misconceptions or incomplete or disorganized knowledge." (p.84). However, Don Livingston (2006), a former Professor of Philosophy at Emory University, listed several

strategies that can be helpful when implementing Constructivism in the classroom. After examination of these strategies and reflection of the Kirschner article, it can be determined that the constructivist approach is appropriate for some situations and not for others. Because this lesson is focused on instructing adults with more prior knowledge, experience and motivation, there will be fewer concerns regarding young minds developing concepts incorrectly as demonstrated in the Kirschner article. Paired with Gagne's events of instruction, there will be enough structure and articles of guidance that learners will not have many chances to conceive misconceptions. However, there will be freedom to explore and take charge of their own learning, as well as collaborating with peers as encouraged by constructivism. Livingston (2006) offers great constructivist strategies that will be effective for this lesson plan including cooperative learning, interactivity and teacher as the facilitator, not lecturer. In the lesson's final stages, we will see these strategies the most. Ertmer and Newby (2013) validate these strategies by stating "The constructivist position assumes that transfer can be facilitated by involvement in authentic tasks anchored in meaningful contexts" (p. 56).

Lesson Title: "Intro to Google's GAFE productivity suite, Lesson 1"

Audience: The intended audience is any teacher or support staff, in a specific building, who will have any contact with students utilizing Google products throughout a typical school day. This lesson was designed for a staff of teachers who teach third through fifth grade students, but can be utilized for teachers at any level 2nd through higher education.

Learning Context: This will be the first of at least four training sessions on Google's GAFE products. The three being presented will be beneficial for teachers starting their work in the Google GAFE suite. The time required for this lesson will be roughly one hour. This is

designed with a face-to-face audience in mind, but can easily be transferred to an online format using online videos, presentations, and live streaming.

Prior Knowledge: Staff must already know basics of a computer (Windows, Chrome, or Apple operating system), and specifically be comfortable logging into and using Google Chrome web browser.

Required Resources: Attendee must have school issued student Chromebook or personal device and recommended note taking equipment. May utilize Google Docs for note taking. Presenter must have a Google Form at the end of a lesson for evaluation and feedback. This will be used for personal use as well as future planning. A computer with access to the Chrome Browser as well as a connected projector will also be helpful. Any additional resources, links and tips will be emailed out prior to lesson.

Instructional Procedures:

1. Gaining Attention: (4 minutes) The lesson will begin by showing them a video produced by Blackboard that shows a clip explaining the digital native. The instructor should ask them what words stuck out to them. Words such as: Connected, share, excited, online, virtual, share, keyboard, active learners and more might be shared. The instructor will address this quote from the clip, “My school has to keep up with me...not the other way around.” The quote should be discussed by stating the importance of this quote and the importance of keeping up with the digital native. Google Products are growing. Our students already know how to work most of these products. It’s time to keep up and cater education to their learning style. Video: “The Voice of the Active Learner- Education from a Digital Native’s perspective”

2. Inform Learner of Objectives: (2 minutes) This will differ slightly from the constructivist perspective due to being instructor led. However, to begin building on concepts

there must be a clear starting point to build upon. The lesson will proceed by presenting the objectives clearly using a Google Slide presentation. The objectives are that the teachers will be able to post and share assignments on Google Classroom, create assignments using Google Docs, as well as access important documents using Google Drive. These will be building blocks for future training sessions.

3. Stimulating recall of prior learning: (5 minutes) During this step of the lesson the instructor should ask the teachers to log into their Google accounts on the student computers. This will address any issues regarding log in procedures. The teachers will then be directed to Classroom.Google.com. Because this is the first lesson of the GAFE lessons, there will not be much to recall for this initial lesson. In future lessons, to enhance long-term memory, as well as lay the foundation for lesson two, it is recommended the presenter cover basics of our three areas: Google Docs, Google Classroom and Google Drive.

4. Presenting the Stimulus: (15 minutes) The instructor will then walk them through the beginnings of Google Classroom. The instructor will demonstrate how to create a virtual classroom to where they will post links, assignments and lessons they would like their students to access in the future. Any questions will be answered before moving forward. Once basics are covered, the staff should be shown how to put items on their Google Classroom stream for students to access. The basics of accessing Google Docs and Google Drive will then be presented. Google Classroom can operate smoothly when these products work together. These products and their functions will serve as the topics for learner-driven breakout groups in Event six.

5. Providing learning guidance: (3 minutes) Next presented will be the peer collaborative activity. The learner should explore and drive the learning during this section. Two

slides/handouts will be available for learning guidance. The slides will have guiding questions to determine if the staff member can complete the basic tasks on Google Drive or Google Docs. These tasks would include tasks such as making a table, inserting media and creating a sample worksheet for Google Docs. For Google Drive tasks such as making a folder, sharing a folder with a cohort, labeling a folder and organizing files may be tasks for the Google Drive group. "How-to" videos, blogs and other resources for the staff member to access if they have questions during or after the presentation. However, with the varying levels of expertise, working with one another will be more helpful than written or visual guides. The instructor should act as a facilitator, but able to assist where needed.

6. Eliciting performance: (20 minutes) The staff will then be moved to two tables. One will focus on the Google Drive task list, the other will focus on the Google Docs task list. They may work with peers during this time. If at any time, they wish to try the other station, they may move. If they would like to focus on only one product, that is acceptable as well. The instructor will also be assisting with Google account issues as well as assisting with Google Classroom for individual teachers.

7. Providing Feedback: Feedback will be provided informally by presenter or personally delivered from peers at the table in the form of discussion during event six. The presenter's position is to add ideas or suggestions when necessary. This is an initial introduction to a topic. The nature of this lesson is to provide ideas and let the teachers explore the capabilities of these tools and then begin to imagine what these tools would look like in their own classroom. Therefore, no formal assessment will need to be given. Any errors or misunderstandings will be cleared as they arise.

8. Assessing performance: (10 minutes) When practice time has ended the instructor should ask the staff if they have any ideas for how to begin utilizing these specific Google products or their "wow" moment while they were working as a group. This discussion will act as a self-reflection piece and begin to form application ideas for the staff regarding Google products. Staff members will finish their time during the professional development filling out a Google Form that will answer questions concerning the content presented, delivery method of presenter, and what they would like to see out of the next Google professional development. This is a critical constructivist piece that will help the instructor guide the learning based on the desired of the learners. Once feedback is collected, the feedback will go under careful analysis and the next Google session will be determined. Based on the results, advanced sessions or remediation lessons will be provided later.

9. Enhancing retention and transfer: (5 minutes) Towards the end of the lesson, the presenter can show examples of projects, specifically Google Docs, they could begin now in their classroom. It is vital that this demonstration comes at the end and not during Event five, so the teachers can leave with a bit of inspiration. The presenter will recap any important pieces that will be necessary to remember for them to utilize these tools in their classroom and encourage them to share their future success stories. Sometimes Event 9 actives can be misplaced and still be very much effective. Driscoll (2005) states, "that a variety of examples and contexts are critical learning conditions for learners to be able to transfer intellectual skills appropriately. These would most likely be planned during Event 5, providing learning guidance" (p. 377). This lesson presented its examples and help blogs earlier in the lesson.

Conclusion

In conclusion, the staff will be thanked for being a positive and receptive group. They will also be reminded to keep sharing their successes. This mixture of Gagne's events with constructivist type activities blended in was beneficial for this lesson. There was structure to the lesson as well as the content. However, the learner still felt that they had control and could focus on their weaknesses or curiosities while working with a group of their peers. Working with their peers will also create a sense of accountability. They might ask how a cohort is utilizing a tool. This will increase collaboration which is a great practice for a staff. Technology integration specialists as well as administrators should be understanding and supportive of teachers to try new instructional methods in their classroom. Teachers should not be punished if a lesson utilizing a tool fails. If teachers do not feel supported, they will be reluctant to try new tools which in turn will be a disservice to their students. Administrators are also encouraged to create a schedule to monitor the use of technology in the classroom. A rubric of expectations regarding the use of Google products can be passed out to the teachers. Administrators can informally or formally observe classrooms using a variable or fixed interval schedule, however it can be argued that a variable interval schedule would be ideal to make sure that teachers are authentically using Google Products in their classroom. This can be reinforced in many ways. If a teacher is meeting usage requirements they can be rewarded with rewards such as "Casual Dress Pass", gift cards or whatever is deemed appropriate for a specific building. Failure to meet usage requirements might result in a mandatory meeting with the technology integration specialist to develop ways to improve productivity as well as engaging lesson plan ideas for the teacher. Looking forward, the administrator should encourage continued growth by finding multiple opportunities for continued growth through professional development sessions, webinars, conferences or peer groups. The more the material is rehearsed and explored, the more

natural it will become for the teacher and basic functions will become a part of their long-term memory so they may begin developing their skills and incorporating them into more projects.

References

Driscoll, M.P. (2005). *Psychology of Learning for Instruction, 3rd Edition.* Boston: Pearson Education, Inc.

Ertmer, P. A., & Newby, T. J. (2013). Behaviorism, Cognitivism, Constructivism: Comparing Critical Features From an Instructional Design Perspective. Performance Improvement Quarterly, 26(2), 43-71. doi:10.1002/piq.21143

Keengwe, J. j., Onchwari, G. g., & Agamba, J. a. (2014). Promoting effective e-learning practices through the constructivist pedagogy. *Education & Information Technologies*, *19*(4), 887-898. doi:10.1007/s10639-013-9260-1

Kirschner, P. A., Sweller, J., & Clark, R. E. (2006). Why Minimal Guidance During Instruction Does Not Work: An Analysis of the Failure of Constructivist, Discovery, Problem-Based, Experiential, and Inquiry-Based Teaching. Educational Psychologist, 41(2), 75-86. doi:10.1207/s15326985ep4102_1

Livingston, D. (2006, February 11). Differentiated Instruction in the College Classroom. Retrieved February 19, 2017, from http://home.lagrange.edu/dlivingston/differentiated.htm

So, W. M. (2012). Creating a Framework of a Resource-Based E-Learning Environment for Science Learning in Primary Classrooms. *Technology, Pedagogy And Education*, *21*(3), 317-335.

Sørensen, B. H., & Levinsen, K. T. (2015). Powerful Practices in Digital Learning Processes. *Electronic Journal Of E-Learning*, *13*(4), 291-301.