

Supporting Post-Graduates' Skill Acquisition Using Components of Constructivism and Social Learning Theory

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In order to support our post-graduates, higher education professionals are often petitioned to provide concentrated training opportunities in specific skill development to our adult learners. The question then becomes how to support and enhance curriculum attainment within the constraints of a concentrated format? In this article, we describe our efforts to design and implement professional development workshops based on components of Constructivism and Social Learning Theory. The participants included 150 post-graduate teachers from 19 secondary and elementary schools who participated in 3-day workshops on differentiated instruction (DI) techniques. Findings indicate that the design of the workshops provided the participants with useful strategies and resources. Results from paired sample T-test yielded interesting results.

Keywords: Higher Education; Constructivism; Social Learning Theory; Professional Development; Differentiated Instruction; Adult Learners

Introduction

Higher education professionals are often petitioned to create professional training opportunities for post-graduates. These consultation opportunities may be supported by grants and can be embedded in training that occurs over an extended period of time or may occur over a period of a few days as in concentrated topical workshops (i.e., Dingle, Brownell, Leko, Boardman Gould & Haager, 2011). Regardless of the format of the professional development, of utmost concern is providing the participants with experiences that use their time wisely, maximizes learning and provide skills that can be readily adapted and implemented (Guskey, 2002).

Due to cost and time constraints, workshops continue to be efficient ways to train large groups and support introduced skills in a safe learning environment (Barnett, 2004; Joyce & Showers, 2002). Well-constructed workshops allow participants to hone their skills while participating in a community of learners. Tienken and Stonaker (2007) note that adult learners are motivated by skill training that relates to their unique situations and which allow them to interact with other participants. Research by Speck (2002) also indicates support, feedback, and opportunity to practice skills within the workshop setting, are important considerations for adult learners.

The question then becomes how to support and enhance the skill acquisition of the workshop participants within the time constraints of a workshop format? We turned to research on learning theories for our answer. Learning theories have been created to describe how we learn skills and transmit that learning into practice, including learning that occurs in professional development opportunities. For example, Pavlov's Classic Conditioning Theory is well known and looks at stimulus and response in learning behavior. Skinner's Operant Conditioning Theory is a Behaviorist Learning Theory that emphasizes the

role that positive and negative reinforcement plays in shaping behavior (i.e. Good & Brophy, 1990). While each of these theories describes reinforced behaviors, they do not address the importance of social interaction and modeling in learning, which is an integral part of Bandura's Social Learning Theory (i.e. Dembo, 1994). In contrast, Constructivism is less formulated than the previous theories, with the shift of learning being placed on the learner and sense making. Each of these theories have their place in teaching and learning; yet, the key to effective instructional design is considering the level of knowledge of your learners and the cognitive demand of your material (Schuman, 1996). With this in mind, we chose to use a combination of Constructivism and Social Learning Theory in our training. Both Constructivism (Fosnot, 1996) and Social Learning Theory (Bandura, 1977) value the social context of learning, the individual's experiences, and the constructing of meaning from experiences.

Our purpose in this article is to describe our efforts to design and deliver professional development workshops based on components of Constructivism and Social Learning Theory. We begin with a brief introductory discussion about Constructivism and Social Learning Theory. This is followed by a description of the study questions, participants, and background information. We will then discuss the components of Constructivism and Social Learning Theory that were integrated into the design and delivery of the workshops. The results of the paired-sample T-test will be discussed. We will conclude with implications for the future.

Constructivism

Constructivism is a learning theory that is based on the premise that new knowledge is built on prior knowledge and that optimal learning is achieved through active interaction with

material rather than passive interaction (Fosnot, 1996). Different from direct instruction techniques, Constructivism has the teacher take on the role of “guide on the side” rather than “sage on the stage”. Proponents of the Constructivism theory see the role of teachers as being one of support via various degrees of scaffolding, coaching and modeling techniques (i.e. Jonassen, 1999). Hands-on activities are associated with ideas of Constructivism as are KWL Charts (What you Know, What you Want to learn, What you Learned). Opponents to Constructivism suggest that simply having hands-on activities does not equate to learning and that true learning requires cognition and guided instruction (Mayer, 2004). Thus said, there are components of Constructivism that can be used to successfully promote learning in professional development opportunities.

Social Learning Theory

Like Constructivism, Bandura’s Social Learning Theory (1977) portrays learning as being interactive and social in nature with cognition as a key element. It also acknowledges the importance of observation and modeling in promoting learning. Bandura believes that people can learn through observation but that learning does not always equal change of behavior. Modeling is essential to learning in the Social Learning Theory, and is described as a process that occurs on four levels: Attention, Retention, Reproduction and Motivation (Bandura, 1977). At the Attention level, attention must be gained and sustained for learning to occur. Once learned, then information or skills must be retained or stored at the Retention level. The Reproduction level is where learned skills are practiced and improved. The final level, Motivation, is impacted by positive reinforcement and/or punishment. In essence, modeled learning is then imitated based on how it is reinforced in the environment. The Social Learning Theory contains facets of good teaching practices that can be used in professional development.

Study Information

Given an opportunity to teach a workshop to our teachers, our questions for this endeavor were: 1) how can components of Constructivism and Social Learning Theory be integrated into a workshop format; 2) what changes in the post graduates’ perceptions occurred as a result of participating in the workshops?

There were 150 teachers from 19 different schools in central Indiana, USA, who participated in the 3-day summer work shops. Of these 150 teachers, 138 were employed in one (out of 20 different) Professional Development Schools associated with the university. Three of the workshops were geared toward elementary educators and three were geared toward secondary educators. Participant attendance was similar for both workshop formats. Seventy-seven teachers attended the elementary workshop and 73 teachers attended the secondary workshop. As the workshops were supported by a professional development grant, all teachers received a stipend and graduate credit upon successful completion.

In terms of workshop location, 106 teachers attended workshops in a mid-size university city and 44 teachers attended workshops in a larger urban city. With regard to teacher attendance in terms of when the workshops were held, there was slight variation. Four workshops were held during the month of June. Consequently, 28 teachers attended the workshop held

during the first week, 32 teachers during the second, 21 teachers during the third week and 21 teachers attended towards the end of the month. In addition, two workshops were held during the month of July. Of these two workshops, 20 teachers attended during the second week and 24 teachers attended during the third week.

Regarding current level of teaching, 69 participants reported that they were middle school teachers. At the high school level, the number of participants was 42; however, 15 participants reported that their current level of teaching was best represented as all grades (i.e., Fine Arts, Music, Special Education).

Design and Delivery

Professional Development occurs across many venues, allowing researchers to examine and report on best practices to support adult learners. Research indicates that professional development opportunities best serve the participants if they have a focused content, use time wisely, allow the participants to interact with the content and the instructors, and provide collaboration opportunities (i.e. Birman et al., 2000). Mindful of this, we infused our design and delivery with these best practice ideals while incorporating components of Constructivism and Social Learning Theory into the implementation.

Creating a Community of Learners

It was essential that we allow our participants to have a choice of when to attend the workshops and with whom to share their collaboration and learning experiences. The participants had an opportunity to not only choose the dates they would attend the workshops but also the representative level (elementary or secondary) of the workshops. By doing so, the workshops became a community of learners with similar prior knowledge experiences and needs. This commonality allowed the participants to experience a safe and known environment of which to learn. Using an ice-breaking activity, case studies and group work, the participants were able to build a level of trust with one another and interact with each other and with the focused content (elementary or secondary) of the workshops. This communal experience with like-minded individuals provided a learning opportunity that Tienken and Stonaker (2007) note is important to adult learners.

Using Components of Constructivism

Components of Constructivism were used in the planning of the workshops and demonstrated by including a KWL chart of DI techniques, hands-on activities, and providing authentic experiences in the form of case studies. As workshop planning developed, it was determined that the most important aspect of the training was practicality. The participants needed to walk away from the training with something that they could use immediately. A second priority was to honor the fact that the participants already use some DI techniques whether they realize it or not (Wormeli, 2007). They were reminded that when they teach they already restate questions, clarify content, give extra examples, etc.—which are examples of DI techniques in practice. By doing this, we allowed the participants to draw on their prior knowledge concerning DI and then build on that knowledge to include the new skills that were being presented in the workshops.

Constructivism and Guide on the Side

As for the instructors' roles in the workshops, a structured and goal oriented "guide on the side" best describes our role. We planned the workshops to include aspects of Constructivism via the interaction with the material and in the interaction between participants. We used scaffolding to support their learning, modeled DI techniques and coached the participants in the use of DI in their teaching. New skills were presented and then practiced, allowing the participants to problem solve through case studies. For the last day of the workshops, the participants used their own teaching units as case studies and then applied learned aspects of DI to these teaching units. During this time, we allowed the participants to work together to solve their problems and provided support as needed.

Bandura's Social Learning and Modeling

Equally important for our design and delivery was the use of Bandura's Social Learning Theory. Ideas of observational learning and modeling were used throughout the workshops. Using the KWL chart, the participants were able to observe what aspects of DI they and others knew, discuss what they wanted to discover about DI, and at the conclusion of the workshops, describe what they had learned about DI from the workshops. Also, as instructors, we provided the participants with new information and then modeled how those skills could be used to support students. We implemented Bandura's four levels of modeling into our instruction. For the Attention level, we used technology and multi-media to support our instruction and to provide the participants with technological ways to support DI. We also designed the workshops so that the participants were able to move around and interact with each other and stations in the room. By doing this, the participants then could choose which introduced skills to retain for later use- thus illustrating the second Retention level. Through case studies, group work and technology exploration, the participants were then able to practice and hone these retained skills, demonstrating the third Reproduction level. The final level, Motivation, was partially established from the beginning of the workshops. The participants knew that upon successful completion of the workshops they would receive a stipend and college credit, both positive reinforcements. To do so, the participants

had to apply the DI skills presented in the workshops to their own teaching units, exemplifying the imitation phase of the motivation level.

Post-Test Results and Discussion

As with many grant supported professional development opportunities, we collected data on the participants. We administered a pre-test to them at the beginning of the workshops and the same test as a post-test at the conclusion of the workshops. Since our participants were teachers, our questions related to their work setting including classroom issues, use of technology, assessment, adapting material and meeting the needs of diverse students. A paired-sample T-test yielded interesting results. Following participation in the workshop, on average participants felt differently about a number of issues related to classroom instruction in general, and DI specifically "Table 1". In particular, participants thought they would have fewer total numbers of issues that they would have difficulty with in the classroom after participating in the workshop ($t(145) = 2.03, p < .05$) than before participating in the workshop. Of those reporting that they would have issues in their classrooms, participants believed they would have less difficulty dealing with issues related to adapting their lessons in order to address the needs of all students ($t(85) = 5.54, p < .05$) and including a variety of assessments in their teaching ($t(66) = 2.46, p < .05$) after completing the workshop.

In terms of their overall perceptual changes as a result of attending the workshop, on average, participants were more likely to agree with the statement that they would regularly use a variety of assessment options in their teaching after participating in the workshop ($t(145) = 5.86, p < .05$), than before participating in the workshop. In addition, participants were also more likely to agree with the statement that technology could be a great tool to support students in their classrooms after participating in the workshop ($t(146) = 3.26, p < .05$).

With regard to perceived confidence as a result of workshop participation, the teachers felt more confident in their ability to use instructional strategies that get and keep students interested in the subject after participating in the workshop than before participating in the workshop ($t(145) = 6.10, p < .05$). Additionally, they felt more confident that they would use a variety of

Table 1.
Mean perceptual changes as a result of workshop attendance.

Variable	Pre-Test Mean	Post-Test Mean	N
Total number of issues that they would have difficulty with in the classroom	5.03	4.77	146
I believe that technology can be a great tool to support students in the classroom	4.10	4.40	147
I regularly use a variety of assessment options in my teaching	3.45	3.89	146
I feel confident that I use instructional strategies that get and keep students interested in the subject	3.45	3.94	146
I feel confident that I use a variety of materials that match the needs of learners in the classroom	3.46	3.98	146
I feel confident that I use a variety of strategies that match the needs of learners in the classroom	3.53	4.12	146
Please rate your concern for adapting your lessons to address the needs of all students	3.87	3.09	86
Please rate your concern for including a variety of assessments in your teaching	3.29	2.92	67

materials that match the needs of learners in their classrooms after participating in the workshop than they did before attending the workshop ($t(145) = 6.90, p < .05$). Finally, participants felt more confident that they would use a variety of teaching strategies that would match the needs of learners in their classrooms after participating in their workshop than they did before attending the workshop ($t(145) = 8.76, p < .05$).

Conclusion

In this article, we described the design, implementation and effectiveness of using components of Constructivism and Social Learning Theory in our DI workshops. The design and execution of our DI workshops were both teacher-centered and student-centered. For our participating teachers, we minimized the reading tasks, emphasized their own DI practices and maximized collaboration and technology integration. As for student-centered, we provided the participating teachers with ways to infuse DI principles into their everyday lessons and provided feedback on their endeavors. The results indicate that our workshops on DI impacted the perceptions of the participating teachers and provided useful strategies and resources that they could use in their own work settings. Certainly, components of Constructivism and Social Learning Theory should be considered when planning professional development opportunities.

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