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Creating Atmospheres for Technology to Implement Learning & Training

Literature Review

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Creating Atmospheres for Technology to Implement Learning & Training**Introduction - Abstract**

My action research project created a training tutorial on how to enter content into the Teaching Machine. The Teaching Machine is a learning management system. Literature supports this type of brain-based learning. Utilizing pre and post testing, the participants provide detailed information on their computer usage, past engagement with learning management systems, software knowledge, and confidence in utilizing the Teaching Machine as a professional development tool. All of the participants indicated that they were confident that they would be able to input video, questions, and content into the Teaching Machine for their own professional development tutorials. In conclusion, the positive outcome of this study will lead to further development of support materials for the Teaching Machine.

Literature Review - Professional Development

Administrators and teachers utilized technology and innovative techniques to support learning. Keengwe, Kidd and Kyei-Blankson (2009) reviewed how the effective integration of Information Communication and Technology (ICT) tools were implemented when paired with an adoption process. The authors determined that four components: organization support, leadership, and effective training and development programs were the cornerstone pieces that would positively impact a teacher's willingness to respond to the professional development (Keengwe, Kidd, & Blanson, 2009). Meyer and Marsick (2003) also supported teachers and trainers needed to utilize innovative techniques and tools to support professional development. In

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addition to the advantages of new technology, staff and employees needed to see the ease of use in this new technology. Keengwe, Kidd, and Blanson (2009) and Meyer and Marsick (2003) presented the steps necessary to effectively adopt ICT to support teaching and learning that the learner must understand the new technology, had to know how to implement its use, know how to embed the technology within their teaching practices, and align their learning objectives for the students with the technology. This revealed ways leadership helped create an atmosphere in which there were smooth transitions between traditional teaching and teaching with technology when they adopted a process to implement new technology.

Meyer and Marsick (2003) studied how different companies' implemented professional development. It was found that traditional presentations of material through workshops and highly structured activities were not effective on their own merit. Trainers needed to adopt innovative learning programs. They found that corporate trainers needed to be tightly aligned with senior management's agenda, had a complete understanding of the people being trained, and incorporated individual learning styles. The *ASHE-ERIC Higher Education Report* (2003) also tied its findings and assessed the workplace in order to capture the employees' buy in to professional development. Work projects were determined to be more effective than transmitting knowledge through traditional teaching methods. The authors of the report provided recommendations that paired traditional training methods with new innovative techniques that prepared trainers to create productive employees.

ASHE-ERIC Higher Education Report (2003) indicated that corporations work with their

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corporate universities and developed frameworks that assessed the educational and training needs of the company. One of the major goals sold the idea of professional development and learning to the employees throughout the whole company. A major theme that was evident in the article is that support and the right environment needed to come from all levels for the adoption of new training and professional development to occur. Nichols, Nichols, and Nichols (2007) took this correlation a step further and included ethics within the workplace. The authors addressed the importance of organizations teaching ethics as a skill that is learned and applied to maintain standards. Organizations utilized current technologies and incorporated meaningful experiences, the outcomes of professional development were more productive.

Brain-Based Learning

Brain-based learning provided meaningful learning experiences. According to McGuckin and Ladhani (2010) there was a significant difference between rote memorization and learning from meaningful experiences. The authors also stated that a difference in what was meaningful learning to one person might not have been meaningful to another. Emotions helped in creating meaning. Individual emotions vary immensely between each other; therefore, creating meaning will be a different experience for all. Emotions can either help or block learning. Dwyer (2003) supported that learners that were positively impacted by their learning environment helped them learn. If the learner was experiencing negative emotion during a learning experience they may not be engaged or learn anything.

Creating learning environments that foster intimacy supplied feelings of self-confidence

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and motivation. According to Dwyer (2003) organizations that helped foster change in learning environments stay ahead of the rest in the marketplace. Learning only happened when one was positively emotionally engaged and socially comfortable in the learning environment. This translates into creating an environment in which there are no biases, intimidation, or rejection. Learning environments needed to be created which were participatory and relaxed. For a learner to memorize and create connections the information must have been apparent in which the learner was being asked to learn and create connections. Zull (2006) also stated that learning was heavily dependent upon the chemicals of emotional states. Learning was best achieved when the brain was able to connect related information.

Brain-based learning happened in steps, draws from past experiences, and occurs through emotions. There are several different points to learning, gathering, reflecting, creating, and testing (Zull, 2006). The authors of “1. Brain-Based Learning,” (Journal of Philosophy, 2008) learning was best achieved in groups along with peers. Biology along with cultural upbringing played major roles in individual learning. No one learner had the same learning experience or accepted what was taught the same way. It was also never too late to learn due to the plasticity of the brain (*Journal of Philosophy of Education*, 2008). Giving learners the environment to draw their own conclusions rather than forcing them with knowledge transfer helped the learning process

E-Learning Environment

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Mentoring peers when they were new to the teaching profession was a way to utilize professional development practices in developing strong teachers. Stanulis & Ames (2009) studied how a seasoned teacher continued their professional development while mentoring a fellow teacher. Stanulis and Ames (2009) needed to answer how teachers teach adults and motivate beginning teachers along with maintaining their own professional development. When confidence was built, both parties benefited. The elements that were determined most beneficial to all were observation, gathering evidence, and reflective practices. The learning process occurred for each person involved. According to Dede (2010) learning was just as individualistic as each person. Online learning needed to include a range of different types of media. Russell, Kleiman, Carey, and Douglas (2009) found using different technologies and course materials had a significant positive impact on online professional development programs. The authors found that in online professional development asynchronous learning was extremely imperative for real learning to take place. In all findings, the importance of peer-to-peer interactions was vital for the success of the online learning experience.

According to Whitton and Hollins (2008) within the e-learning environment there has been a growing demand for multi-user virtual environments (MUVES) and Massively multiplayer online role-playing games (MMORPGs) for collaborative learning. It was believed that these types of environments could support a variety of pedagogic approaches that was applied individually or by piecing different pedagogies together. The attitude in education and professional development too often was that there is one best way to do it. In reality, there needs

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to be a paradigm shift that believes learning needs to match different peoples needs (Dede 2010).

Current training and professional development programs are from the industrial era of thinking that dominates the United States since the end of World War II (Majer & Bell, 2011). Management typically utilized industrial era goals of stability, and standardization instead of cooperation, collaboration, and innovation. Educators and trainers experienced different types of teaching with e-learning environments making cooperation, collaboration, and innovation possible (Russell, Kleiman, Carey, & Douglas 2009). There were many logistical advantages to online learning. The online learning experience brought many learners, trainers and educators together over vast distances, making the collaboration effort much easier with people not normally in the same geographic area.

Methodology

Five participants are educational administrators from a local educational agency who have a need to deliver course and professional development materials within their organization. Five additional participants are employees of Tucci Learning Solutions.

Summary of Cycle 1

In week 1, ten participants were identified and contacted. The participants were identified by their desire to use or implement an online learning management system for professional development. Five of the participants were contacted face to face and five were contacted

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through e-mail. All ten participants agreed to complete Cycle 1.

In week 2 there was a detailed email sent to all of the participants explaining the process to access the Teaching Machine Tutorial. Each participant received a welcome email to the Teaching Machine Tutorial, which provided a link directly to the tutorial. Once the participant entered into the tutorial, the participant was prompted to watch a presentation regarding the functionality and history of The Teaching Machine. Each participant was prompted to proceed to the pre-survey. After taking the pre-survey, each participant watched five tutorial videos.

In week 3 through 5, the participants were expected to complete the pre survey, the five tutorials, and the post survey. Each tutorial had a specific purpose. The first tutorial was an introduction of what the Teaching Machine offers and how the learning management system supports learners using the Teaching Machine. The introduction also demonstrated the content needed for the Teaching Machine. The second tutorial provided information on how to break the content into tasks, in this example a power point presentation was used to show that the natural breaks for each tasks should occur every 20 minutes or less. The third tutorial demonstrated how the tasks are made. There was a step by step procedure utilizing a screen flow presentation on how to enter tasks and how to save the tasks as desired. The fourth tutorial showed the participant how to set up a lecture with the Teaching Machine. The demonstration shows how to maintain a placeholder video, how to upload the video, how to add slides, and how to set up the timing of the slides. The fifth and last tutorial demonstrated how to create a question, how to set the timing of the question, how to set the time to pause the video, how to set up the designated answers for the

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question, and last, a visual presentation of what it will look like for the learner. Once the subject completed the five tutorials, the subject was directed to complete a post-survey.

Summary of Cycle 2

In Cycle 2, the Tucci Learning Solutions, LLC. participants were contacted directly from a manager at Tucci Learning Solutions, LLC. The participants were encouraged to respond to the emails requesting their participation in a study that would be used to identify further changes for the Teaching Machine. All 10 participants agreed to complete Cycle 2.

Each participant was provided a link to the Teaching Machine Tutorial. Each participant was prompted to watch a presentation regarding the functionality and history of The Teaching Machine. Each participant proceeded to the pre-survey. After taking the pre-survey, each subject watched five tutorial videos. They were provided directions on enhancing the visual presentation to a high definition (HD) presentation for Cycle 2.

The Cycle 2 outcome indicated that 10 participants were confident in entering information into the Teaching Machine. The participants also reported that the amended visual presentation of the Teaching Machine enabled them to see the visual content better. The language for the video one and two were changed so that the audio content was more precise. The participants understood the information more clearly.

Data Collection

The participants were provided a pre and post-test survey as the tool and instrument to collect

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data. The surveys were used to assess their ability to utilize technology as a whole and their ability to set up a training module into the Teaching Machine to provide professional development.

Out of the 10 participants, I received completed surveys from 10 individuals. This survey had significant advantages to the educational managers because they are going to implement a learning management system for their internal professional development procedures. There were eight participants that were comfortable using applications such as Blackboard and Moodle. All of the participants worked with a learning management system as a learner, instructor, or administrator. Nine of the participants currently use Web 2.0 tools and 50% of them felt that they had the proper amount of support at their current work environment.

Results

The data reported that the participants were pleased with the changes. The participants reported that the delivery of the material increased from 45% to 85%. The Language of the first two videos were refined so the learner (participant) would be able to understand the information clearly. The participants reported that the presentation of the tutorial was enhanced from 50% to 90%. They were able to see the video resolution in a manner that enabled them to see the video in high definition. The participants reported that there was a 50% to 80% increase in their confidence in their ability to independently ability to enter information into the Teaching Machine based upon the change in the content in video 1 and 2. One hundred percent of the participants have used technology beyond basic word and 80% of the participants have taken an

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online class.

Conclusion

Multiple components were necessary to sustain professional growth. Learning must be a meaningful experience and training must be addressed through multiple perspectives. When implementing professional development that is based on the use of new technology, the strategic plan must include measures to create staff engagement in order to maintain sustainable implementation and use of the new technology. The learning process should be reciprocal so that all parties benefit. Leadership needed to incorporate learning styles and break down barriers to propel the growth of the organization. Management must create the right atmosphere for learning to occur.

Future Direction

Currently, we are working with an outside vender continuously to update the Teaching Machine in order to meet the needs of our employees. The updates are system not content. So we will continue to update the system and hopefully be able to market the product outside of our own agency. The Cycle helped us understand the needs of a potential client. Additionally, we also know what may be needed in the future regarding content of the “how to” for putting in content. At this point, I hope to encourage the owner of this learning management system to develop a written document to accompany the on-line training for individuals that are transitioning from paper to electronics. Learning happens in so many formats; it appears from the data, that some

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learners will need paper and electronic reinforcement of the content provided. I plan to provide a proposal to my boss so that she can see the importance of the outcome of this study in order to support her future development of the Teaching Machine.

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