Alaka Pradhan
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EDTECH 592
Reflection/Research Paper

Learning Journal

Introduction

I signed on to the Masters in Education Technology program at Boise State to acquire a skill. I wanted to operate digital learning tools. As a high school science teacher, I aspired to keep up with the changes in my profession and teach in a classroom that reflected the technological achievements of the 21st century.

At the conclusion of two years of coursework, I can confidently state that I have developed the skills to operate educational technology tools. Boise State provided the platform. My professors mentored, monitored, cajoled and counseled my way through eleven training courses. In full view of course mates, and with their encouragements and criticisms, I operated software suites, wrote (some) computer code, and learnt and executed all the elements that constitute a successful online course. I am ready to be certified.

When Boise State acknowledges my accomplishments with a Master's degree in three months time, the world will know that I am a qualified technician. What the certificate will not state, however, is that I know how to use my skills. Yet, this was the most significant lesson I learnt during my career as an EdTech student.

How do I apply the skills? It is a process, I discovered. It is a process focused on the

individual learner. Her/ his learning is the objective. As a trained education technologist, I will apply a "goal oriented problem-solving approach utilizing tools, techniques, theories, and methods from multiple knowledge domains to: (1) design, develop, and evaluate, human and mechanical resources efficiently and effectively in order to facilitate and leverage all aspects of learning, and (2) guide change agency and transformation of educational systems and practices in order to contribute to influencing change in society (Luppicini, 2005)." This is a mouthful, but it is a systems definition of education technology and the framework of my studies at Boise State.

In the body of this essay, I will reflect on key elements of the system and its processes. I will address five topics with specific references to the courses I completed at Boise State. Those topics are: what is learning? What is teaching? What are the principles of and best practices for the design and evaluation of instructional content? What is the role of networking and collaboration in a learner-optimized learning environment? Can research contribute toward creating an ever more perfect learning environment? Finally, I will conclude by offering my observation on my educational journey at Boise State.

Lesson One: Reflections on Learning

During the first week of classes for *EdTech 503: Instructional Design*, I encountered my first definition of learning. Learning is, to paraphrase the words of Anita Woolfolk, a relatively permanent change in behavior that occurs as a result of experience (Woolfolk, 1998). The words evoked an image in my mind, that of learning as a process. That image stuck. I turned it into a personal frame. To that frame, I added new information that I picked up in my subsequent courses at Boise State. My current understanding of learning is that learning is a process that:

1. Is active (Fosnot, 2005). Learning is a process of constant engagement and of manipulation of experiences, objects and conversations to build mental models of the world (Piaget, 1964; Vygotsky, 1986). Learners build knowledge as they explore the world around them (Raskin, 2002). Learning happens in the act of observing and interacting with new phenomenon, in conversations and engagement with others, and in making connections between new ideas and prior understandings.
2. Builds on prior knowledge (Bransford *et al.,* 2000). Learning does not take place in a vacuum. Learners use the knowledge that resides in their memory to process new information. The interplay between the new and the old information takes place in a "zone of proximal development." (Vygotsky, 1986). Educational theorists contend that the zone represents the difference between what a learner can do independently and what can be accomplished with the help of a "more knowledgeable other" (Vygotsky, 1986). This idea is critical for understanding the principle and practice of scaffolding in the learning process (Bell & Winn, 2000).
3. Takes place in a social environment (Vygotsky, 1978). No person is an island. Children learn through their interaction with parents, peers and other members of her culture. They continue this practice all through their adult lives. Learning is an individual achievement but the process takes place in the social context, in interaction with other individuals. It is shaped by words used during the interaction, and by context, culture and actions (Rogoff, 1998). Indeed, learners build knowledge when they are engaged in activity with other.
4. Is situated in an authentic environment (Herrington *et al.,* 2010). Learning cannot be

fake or random. Learners engage with ideas and concepts when they need to or want to know.

5. Requires motivation and mental engagement (Brooks et al., 1998). Learners will not learn if they are not interested.

Learning is a learner-centered process. The learner is sovereign. This is what I learnt in my two years of school.

Lesson Two: The Art & Science of Teaching

Teaching is the art and the science of helping individual learners grow in their knowledge and understanding. This is the message I received throughout my program studies, in general, and during the course of my *EdTech 521 | Online Teaching K-12* and *EdTech 523 | Advanced Online Teaching* classes, in particular. Teaching is not about the teacher; it is about the learning process.

How does a teacher teach when the learner is supremely in control of her/ his learning? Maryellen Weimer offers seven helpful suggestions (Weimer, 2013). Teachers do:

1. Less of learning tasks. Learners are encouraged to organize learning content, select themes and examples, lead discussions, solve problems and perform the many other small tasks that are otherwise routine for a teacher in a traditional, teacher-centric teaching process.
2. Less telling; learners do more discovering. The teacher does not direct, or act as the school version of a helicopter mom. Learners discover the essence of a topic

on their own.

3. More design work. Teachers work to improve learning environment by incorporating activities and assignments that enhances learner skill, motivation and participation.
4. More modeling. A teacher exhibits the art and science of skilled learning when, and as, s/he perform her/ his role as a coach-on-the-side.
5. More to get students learning from, and with, each other. Teachers facilitate peer discussions and endeavor to help individuals bring out the best from their fellow participants.
6. More to create a climate for learning. Teachers promote interaction, autonomy and learning in a respectful, ethical context.
7. More with feedback. Teachers use feedback as a mechanism to make assessments as well as inform learners of their progress.

These seven activities are simple to state but difficult to execute for prospective online teachers. Their "initial teaching model is typically born from that of their own teachers, and they teach as they were taught. However, few have any online experience as a student or a teacher" (McQuiggan, 2012). Can they learn the skills to teach online? Research results indicate that they can. They can be trained. Their training will help to not only teach online but also to use the key principles of online learning to improve their face-to-face teaching sessions (McQuiggan, 2012).

Lesson Three: The Design and Evaluation of Instruction

In *EdTech 503 | Instructional Design, EdTech, 505 | Evaluation for Education Technologists, EdTech 512 | Online Course Design, EdTech 541 | Integrating Technology into the Classroom Curriculum,* I learnt several theories that support the design and evaluation of instructional content. I also applied those theories in practice, drawing on the lessons from *EdTech 513 | Multimedia* and from other foundational EdTech courses, to build full-fledged online courses customized to my instructional setting. I covered a lot of ground.

A summary of my learning journal will be much too long for the purpose of this writing, Instead, I will state the four lessons I have internalized in my own mind and put into practice for myself when I design and evaluate instructional content. First, restate the principles of system design. Second, course design and evaluation is a collective activity. Third, adopt one process framework. Fourth, evaluate, evaluate, evaluate for continuous improvement.

Systems design is a systematic activity to coordinate the various parts of a project with the overall objective. Learning is the objective. The learner is therefore the focus. The design and the evaluation of instructional content is exclusively focused on the learner, and the process of optimizing her learning.

Designing a high-quality online course is a collaborative undertaking (Chao, Saj & Hamilton, 2010). The lone ranger model, in which an instructor learns how to design and teach an online course herself, is not scalable and does not lend itself to the diffusion of innovative practice in an organization (Bates, 2000). Staff with instructional design expertise, technical knowledge, and subject matter knowledge must collaborate to produce quality courses on a consistent basis (Oblinger & Hawkins, 2006). Hence, the primary role of the instructional designer is to act as the conductor of a musical ensemble, to draw the best from subject matter

experts, and deliver fulfillment to the individual learner.

The world of instructional design is roiled in debate and controversy. Factions and sub-factions of thought leaders are actively arguing the merits or pointing out shortcomings in the most established instructional design model--the Analysis, Design, Development, Implementation, and Evaluation ("ADDIE") model (Molenda, 2003). Reformers have offered greater than 100 alternatives (Donmez & Cagiltay, 2016), and at Boise State, I had extended opportunities to review several robust models, such as Backward Design (Wiggins & McTighe, 2000) and the Dick & Carey Instructional Design Model (2000). As a student, I can surmise that individual models better reflect the learning dynamics in individual learning environments. For my purpose, however, I will stick with the basic ADDIE model. I will adapt the model, when necessary, to reflect the unique characteristics of different learning environments.

Evaluation is "the collection, analysis and interpretation of information about any aspect of a program of education or training, as part of a recognized process of judging its effectiveness, its efficiency, and any other outcome it may have" (Thorpe, 1988). Evaluation is the final letter in the ADDIE design model, but the process is not the final step. Indeed, I will evaluate each module of the model. I will analyze and evaluate, design and evaluate, develop and evaluate, implement and evaluate, evaluate, and, yes, evaluate. Each evaluation process will be conducted in two parts, formative evaluations during the process and summative evaluations at the end.

Evaluation is the signature process that will ensure that each aspect of the learning experience remains on track to deliver the learner to her learning objective.

Lesson Four: Networking and Collaboration

Collaboration is the act of two or more people working together to perform a task or accomplish a shared objective. Networking is the act of two or more computing devices working together to perform a task or accomplish a shared objective. With a nod to the information age, the term 'networking' is also used to describe the activity of one person interacting with other(s)--in person as well as with their personal computing devices--to exchange information about shared interests.

In education, collaboration is an approach to teaching and learning that involves groups of learners working together to solve a problem, complete a task, or create a product. Collaborative learning is "based on the idea that learning is a naturally social act in which the participants talk among themselves. It is through the talk that learning occurs" (Gerlach, 1994). That act can be executed in person or with persons via their computing devices.

At Boise State, I pursued my EdTech studies, collaboratively, with professors and classmates networked through their computing devices. The central thrust of our academic inquiry was collaborative learning. Practically, we learnt to build online networks that supported and fostered these key assumptions of the learning process.

As a learner in the Boise State program, I can vouch for the efficacy of collaborative learning and networking. Each course featured one or more projects. My classmates and I replicated proven strategies in executing the lessons and, I felt, we learnt better through active involvement in activities, small group sessions and cooperative learning (Hendrix, 2010).

The learning sessions were not flawless, however. On several peer-to-peer sessions, and in interactions with some professors, I felt we were just going through the motion of collaborative learning. Our activities were true to form, but lacked substance. Some student

comments were perfunctory. Instructors were terse, on occasions.

My experiences may be explained away by specific explanations. The personality of the professor may be the trigger for specific event. The communication style of individual learners may account for another. However, it is possible that the execution of the learning platform itself has a built-in bump.

Boise State EdTech professors and students participate in a single purpose network. Their relationships and interactions are governed by protocol--of time and form. Each encounter is transactional. Can such a transient environment foster a learning community?

I pondered this question all through my *EdTech 523 | Advanced Online Teaching* class. I came upon a partial answer in the results of a Norwegian study dealing with the use of mobile technologies to support second language acquisition through collaborative social interaction in communities of learners (Petersen & Divitini, 2005). The researchers set up a class blog that was accessible via mobile devices to maintain a community of learning between a university's second language (French) study-abroad students and their stay-at-home teacher and classmates. The blog focused on (French) cultural topics to was designed to encourage the exchange of ideas and multimedia information, feedback and maintenance of social interaction while students are away (Petersen, Chabert & Divitini, 2006). The blog incorporated the best practices of social media design and was well received by the students prior to its launch. At the end of an eleven-week research period, however, the blog recorded only 24 entries. This low level of participation was attributed to the lack of support for SMS/MMS blogging and general absence of a sense of community (Petersen, 2007). The researcher dug deeper to find out the reason for the failure of the blog. They interviewed three participants and learnt that the students lacked any sense of

community at the start of the learning program and could not establish their identities on the blog. Finally, they arrived at this conclusion: blogs are better suited to supporting existing communities than to creating new ones (Petersen, Divitini & Chabert, 2008).

Collaboration and networking can enhance the learning process. These tools work, no doubt. How effectively they work, however, depends on the skill of the educator (Randall, 1999).

Lesson Five: The Research-Practice Connection

The research-practice connection is a rich topic of inquiry in education (Coburn & Stein, 2010). As a student, I learnt and repeated--over and over again--the claim of the two way relationship between, and among, theory and research and practice. It sounded good--and neat. When I made my way to the classroom, however, I faced a different reality. Every couple of years, it appeared, the administrators of the education industry required us teachers to change the way we practiced our craft. Mathematics teachers, for example, could allow students to use calculators at one time--until they couldn't. The curriculum shifted from just simple mathematics to common core and on to Singapore maths. The justification for every change was research.

The rationale made sense--this is what I was taught to believe. What did not make sense was that the information from the teaching practice--the teacher in the classroom--did not appear to be feeding back into the administrative engine that generates research inquiries. The flow of information appeared one way, and arbitrary. I nurtured a question in my mind: is there a role for a thinking teacher in the education industry?

The question was a constant companion during my courses at Boise State. When I read of the new role of the teacher as a facilitator and as a guide-on-the-side, I was encouraged. In this

formulation, a teacher would be required to use her brain in the classroom, to engage learners and find ways to help individuals attain their learning goals. This was progress, but only partially so, I thought. The reason: the change in administrative policy does not fundamentally change the role of the teacher. The teacher executes. She uses her brains in class. There is still no pathway for her to offer input to administrators and researchers on how the class should be conducted.

The use of mobile phone in second language learning is a case in point. Classroom teachers in Japan (Wan, Tanimoto & Templeton, 2008), Bangladesh (Begum, 2011), Saudi Arabia (Khrisat & Mahmoud, 2013), Holland (Sandberg, Maris & de Geus (2011)--to name but four--have consistently realized and reported on the beneficial use of smartphones for second language learning. Tools have been used in second language classes for greater than fifty years (Salaberry, 2001). Yet, educational theorists and the research community--based primarily in the United States--remain steadfast in their incredulity, and keep wondering if the smartphone is just another toy or a distraction (Kiernan & Aizawa, 2004).

As I dug deeper into this topic--for an *EdTech 504: Theoretical Foundations of Education Technology* project--I did stumble onto one optimistic case report. It is a case of teachers who were successful in switching the learning process in their classrooms. At Tel Aviv University, in Israel, the second language classrooms were structured in accordance with instructivist learning principles. When the language teachers were provided with the opportunity to reflect on their classroom experiences, they recognized the relevance of constructive learning principles and opted to revise the mode of instruction in line with those principles (Schcolnik, Kol & Abarbanel, 2006).

The Tel Aviv case has not sparked a great movement to correct the imbalance in

information flow between practice and research. I can hope, however. The practice of education can only improve when researchers, administrators and theorists accept input from those who practice education as their vocation and their calling in life.

Closing Thoughts

The Association for Educational Communications and Technology (AECT) defines education technology as " the study and ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources." I encountered this definition during my very first week at Boise State, in *EdTech 501: Introduction to Education Technology* but I did not make much of it when asked for comment during class. For my final assignment in the Master's in Education Technology program, however, I can look back to this definition and recognize in it the framework that helped shape the individual courses I attended and the overall education I received at Boise State.

There are four parts to the AECT definition. Education technology is, first, a "study and ethical practice." Second, its purpose is "facilitating learning and improving performance." Third, professionals apply this practice by "creating, using and managing appropriate technological processes and resources." The technology is the fourth part of the definition.

The first part of the definition, "study and ethical practice" is a profoundly affirmative statement. Education technology is a practice, it states. It is not a collection of tools. It is not an avocation for tech geeks. It is a professional practice. Even more, it is an ethical practice, with standards that reflect the seriousness, the gravity and the responsibility exhibited in other professional practices dedicated to improve the human condition.

The purpose of education technology is "facilitating learning and improving performance." The focus on the learner could not be more clearly stated. The practice is dedicated to facilitate her learning, improve her performance. It is not about teaching or tools. How to use technology is not the focus. Rather, the focus is on why: why is technology used in the learning process?

The third part of the definition articulates the role of the education technology professional. Her job is to create, use and manage resources. The professional is a generalist. As a family physician practicing her craft for the wellbeing of her individual patient, the education technology professional marshals the educational and technology resources required to help an individual learner help herself.

The word "technology" makes an appearance in the final part of the definition. The reference is qualified. Education technology is not about technology *per s*e. It is about technological process. Moreover, it is about appropriate technological process. The tools element of technology is acknowledged as a resource, at the very end of the definition.

I signed on to Boise State to become a certified tool operator. I will leave the University as a professional dedicated to improve the learning condition, instead. My thanks to the institution, my professors and my classmates for my education.

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