THE USE OF PERSONALIZED LEARNING ENVIRONMENTS
IN CORPORATE TRAINING PROGRAMS

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Abstract

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Utilizing personalized learning environments is a new concept in corporate training. Many companies are not taking advantage of social media or other newer personalized learning techniques in the training process that are currently used in traditional learning settings.

The objectives of this study were to: 1.) Analyze the resources, tools, and delivery methods currently being used in workplace learning; 2.) Identify the potential for applying personalized learning environments in a workplace environment; and 3.) Identify the receptiveness companies have toward personalized learning and its potential application in their training programs.

To complete this study, a model was developed and sent to an expert panel of five individuals who are involved with corporate training. Members of the panel viewed the model content and answered a set of questions regarding their current training methods, whether PLEs are currently being used with their training, and how the PLE model developed may or may not be implemented into their training programs.

While the study results showed a positive outlook on personalized learning environments, it seems that some companies still have not determined the best way to apply PLEs in their training and workplace learning.
Acknowledgements

First, I would like to thank my committee chair and advisor Dr. Terry Herman for her help and encouragement throughout my entire Master’s program. I would also like to thank my committee members, Dr. Donna Trautman and Ms. Maggie Leonard, for their support and feedback, and Dr. Gary Benjamin for his help with the expert panel selection. I must also thank my dad for his expert proofreading skills, and both of my parents for their unconditional support and motivation during this process.
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Chapter I: Introduction

Context of the Problem

Personalized learning is a fairly new concept that has been gaining interest among educators in the past few years as a way to allow the learner to have a greater degree of control over the learning process. A personalized learning environment, or PLE, is the platform from which a learner can “direct” his or her own learning (Educause Learning Initiative, 2009). In a personalized learning environment, the learner is able to set learning goals, manage the content and learning process, and communicate with others in the learning process in order to achieve learning goals. A majority of uses of PLE are focused online; however, personalized learning environments embody the entire set of resources that the learner is using in the learning process, which can be offline as well (Educause Learning Initiative, 2009).

The first use of personalized learning dates back to 1998, with the program Future Learning Environment (Fle3) developed by the Media Lab in Helsinki, Finland. This program allowed for learner and group-centered work integrated with file sharing. Soon, others followed such as Colloquia, 43Things, and PLEX, all platforms that allow access to networks of people and resources for learning. Additionally, researchers such as Stephen Downes, with E-Learning 2.0; George Siemens’ “connectivism” theory; and John Seely Brown’s 21st Century Learning Environments have all incorporated personalized learning in their learning environment studies and theories.

Contrary to traditional learning environments, the role of the instructor in a personalized learning environment is not that of the expert or the single source of knowledge (Warger & Dobbin, 2009). Typically, in a personalized learning environment,
the instructor acts as a guide and sets the framework for the course of learning. The framework could include an application or web-based platform, along with web tools, social networks, and additional resources for the learner to utilize. Additionally, the learner uses the tools and resources as a starting off point for additional discoveries to expand upon the framework that has been provided by the instructor. This allows the learner to generate ideas, ask questions, provide feedback to others, and reflect on his or her own learning experience (Educause Learning Initiative, 2009).

While higher education institutions have embraced the use of personalized learning, PLEs are not being utilized to their full potential in corporate training or workplace learning. Personalized learning environments may not have the most impact on those already in programs of study in universities, but rather for those outside of higher education institutions in the working world. Technology has been integrated in the support of workplace learning, but research shows that much of this integration is focused in departments that already work with computers or for those in management positions (Attwell, 2010).

Corporate learning takes many forms, most being formal induction training or internship experiences, typically supported by a trainer. On the other hand, informal learning occurs daily, regardless of any formal training input. In addition, short courses or seminars covering new work processes are integrated sporadically (Attwell, 2010).

Not only do the forms of training or learning vary greatly in corporate settings, but the conditions for which a personalized learning environment can be designed for a work-based training program will vary as well. Utilizing social processes such as innovation,
learning, and knowledge development will lead to the contexts for which a personalized learning environment can be developed (Attwell, 2010).

**Statement of the Problem**

Utilizing personalized learning environments is a new concept in corporate training. Many companies have not taken advantage of social media or other newer personalized learning techniques in the training process that are currently used in traditional learning settings.

**Objectives of the Study**

The objectives of this study were to: 1.) Analyze the resources, tools, and delivery methods currently being used in workplace learning; 2.) Identify the potential for applying personalized learning environments in a workplace environment; and 3.) Identify the receptiveness companies have toward personalized learning and its potential application in their training programs.

**Significance of the Study**

Personalized learning environments have already been integrated into formal education, gaining popularity over the past few years, and the uses and effectiveness in this setting have been researched. The growing popularity of online learning in corporate training can allow companies to integrate personalized learning environments into their training methods; however, the use of personalized learning in a corporate environment is still a fairly new concept that has not been incorporated in many workplace settings. This study highlighted the important objectives of corporate learning, how personalized learning environments may currently be integrated in the workplace, and showed the receptiveness corporations have toward the use of personalized learning methods.
Definition of Terms

The following terms are operationally defined for the purpose of this study:

Connectivism. Theory developed by George Siemens. Learning, defined as actionable knowledge, can reside outside of the individual. It also states that learning is a process of “connecting specialized nodes or information sources”, where continual learning is developed by maintaining connections (Siemens, 2005, p. 5).

Corporate Learning. Education or training in a corporate or workplace setting.

E-Learning. Instruction delivered online, incorporating text, video, audio, or other online applications.

Learning Environment. “Learning resources and technology, the means of teaching, modes of learning, and connections to societal and global contexts” (Warger & Dobbin, 2009, p. 3).

Pedagogy/Pedagogical Strategies. Instructional or teaching designs/methods.

Personalized Learning Environments (PLE). “The tools, communities, and services that constitute the individual educational platforms learners use to direct their own learning and pursue educational goals” (Educause Learning Initiative, 2009, p. 1).

Virtual Learning Environments (VLE). Learning software system designed to support teaching and learning in an educational setting. Typically used as a supplement to a traditional classroom or face-to-face environment.
Chapter II: Review of the Literature

Personalized Learning Environments

Educational environments are constantly evolving with the integration of technology in the learning process. A concept that has been gaining popularity over the past few years is the idea of utilizing personalized learning environments (PLE), typically in an online classroom. Personalized learning allows the learner to set their own goals, manage the content of the course to their learning needs, and communicate with others in order to reach these goals.

Personalized learning addresses important issues that are sometimes missing from conventional instruction such as understanding of learning differences and designing learning objects that integrate instructional value (Martinez, 2002). Adaptive learning is also incorporated into personalized environments in order to develop individual processes that best address how learners perform and achieve their specific goals. Personalized learning environments have also prompted a change in the roles of instructor and student. In a traditional environment or classroom setting, the role of instructor and student are defined and fixed. The instructor acts as the primary knowledge source and controls the learning experience. The information or content of the course is transferred from the instructor to the student. Alternatively, in a personalized learning environment, the control of the environment is more flexible, and the instructor is not the source for information but rather acts as a guide (Warger & Dobbin, 2009). Teaching or instruction is no longer a means of “data transmission”, but is collaboration between instructor and learner. The learner’s main goal shifts from data collection to a need to draw connections from the information that is gathered (Educause Learning Initiative, 2009).
Recently, the focus of personalized learning environments has been to build and improve upon e-learning practices. The growth of online education and the processes used in online instruction have called for a learning strategy that does not simply take the content of a traditional classroom course and post it on the web. Utilizing social networks, audio and video, collaborative software, and adaptive learning processes are all a part of personalized learning on the web.

**Historical Context**

The first application of PLE dates back to 1998 when the Future Learning Environment (later changed to Fle3) was developed by the Media Lab in Helsinki, Finland. This program, a web-based personalized learning environment, was designed around group-centered learning. The main focus of Fle3 was “creating and developing expressions of knowledge” (Learning Environments for Progressive Inquiry Research Group, 2006). Student “WebTops”, or virtual desktops, were used to store, organize, and share files with others, and a knowledge building tool was used for collaborative knowledge building in the online classroom (Learning Environments for Progressive Inquiry Research Group, 2006).

In the year 2000, Oleg Liber published Colloquia. Colloquia’s main focus was on the social networking aspect of personalized learning environments. This conversational and activity-based software held information about people, resources, and tasks. The instructor set activities and sub-activities, and the users were also allowed to add resources and tasks for the group; however, the personalization of the learning environment with Colloquia stopped there (Liber, 2000).

43Things, a social networking site developed by Robot Coop, was released in 2004. The users could share and describe their personal and learning goals, and collaborate with
others that share similar goals in order to achieve them (Robot Co-op, n.d.). Another application developed in 2004 was the Elgg personal learning system. Dave Tosh and Ben Werdmuller initially developed Elgg as an e-portfolio system, but it incorporated social networking, feeds, and personalization, all features critical to a personalized learning system (Curverider Limited, n.d.).

E-Learning 2.0, first introduced in 2005 by Stephen Downes, has evolved over the past several years into a leading educational theory and model for online learning. Focusing on the social and collaborative aspect of online learning, E-Learning 2.0 uses blogs, wikis, and podcasts to deliver content, encourage collaboration and create a learning community (Downes, 2005).

Additionally, George Siemens’ Connectivism theory has been an integral part of e-learning and personalized learning. Connectivism is based on the premise that learning, or actionable knowledge, does not reside solely in the individual. Instead, learning is a process that “occurs within nebulous environments of shifting core elements” (Siemens, 2005 paragraph 24). Information is constantly being acquired, analyzed, and distinctions between important and unimportant information are made. The following are the principles of Connectivism, from Siemens’ article, *Connectivism: A Learning Theory for the Digital Age* (2005):

- Learning and knowledge rests in diversity of opinions.
- Learning is a process of connecting specialized nodes or information sources.
- Learning may reside in non-human appliances.
- Capacity to know more is more critical than what is currently known.
- Nurturing and maintaining connections is needed to facilitate continual
learning.

- Ability to see connections between fields, ideas, and concepts is a core skill.
- Currency (accurate, up-to-date knowledge) is the intent of all connectivist learning activities.
- Decision-making is itself a learning process. Choosing what to learn and the meaning of incoming information is seen through the lens of a shifting reality. While there is a right answer now, it may be wrong tomorrow due to alterations in the information climate affecting the decision.

In 2005, John Seely Brown published *New Learning Environments for the 21st Century*, which details several classroom and online environments for learning that utilize technology and personalized delivery methods for learners. Some of these environments include studio-based learning, digitally enhanced collaboration, new forms of scholarship, game-based learning, blogs, and pro-amateur collaboration. Brown’s “learning-to-be” theory is an important foundation for these environments (Brown, 2005). Learning-to-be allows the learner to create and learn, pulling content to use immediately. Brown (2005) explains,

> The ‘learning-to-be’ distinction has much lot to do with situated cognition and more generally Jean Lave’s situated learning theory (1991). Lave’s theory focuses on learning as enculturation into a practice, often through the process of legitimate peripheral participation (LPP) in a laboratory, studio, or workplace setting...The spirit of LPP is that students are legitimately engaged in real work, fully participating in the technical and social interchanges and almost through
osmosis are picking up not only the practice, but also the set of sensibilities, beliefs, and idiosyncrasies of this particular community of practice (p.7).

Brown’s learning environments have since been adapted and modified for use in educational institutions for classroom and online-based courses.

Alternatively, there have been a few theories and developments integrating personalized methods in the corporate world as well. Don Tapscott and Anthony Williams, writers, speakers, and researchers of the impact of new technologies on social and economic life, published *Wikinomics: How Mass Collaboration Changes Everything* in 2006. Tapscott and Williams (2007) coined the term “wikinomics”, or the corporate use of mass collaboration through technological resources in order to improve a company operation or solve a problem. The four basics of “wikinomics” include openness, peering, sharing, and acting globally (Tapscott & Williams, 2007).

David Weinberger, researcher and author of *Everything is Miscellaneous: The Power of the New Digital Disorder*, published in 2007, also addresses the use of technology and collaboration in both education and in business. Weinberger discusses the ways information is organized, and points out that the way content is arranged does not imply or determine how the content will be used and arranged by the user (p.100). Additionally, he highlights the advantages of collaboration and socializing in corporations, stating, “...Conversation improves expertise by exposing weaknesses, introducing new viewpoints, and pushing ideas into accessible form” (p. 145).

In 2009, career analyst and author Daniel Pink published his book, *Drive, The Surprising Truth About What Motivates Us*, in which he discusses what truly motivates us to work and learn. In a talk for the TEDGlobal conference in 2009, Pink describes several
concepts from his book, stating that businesses should rethink the way they are being run, and that monetary incentives can actually have the opposite effect than what they are intended. He explains the three elements that drive us: autonomy, or the urge to direct our own lives; mastery, the ability to master our skill set; and purpose, the notion that our work can serve something larger than ourselves (Pink, 2009). Pink's theories of motivation highlight the importance of directing our own path, and personalized learning is a way that can be accomplished in a corporate environment.

These learning platforms, programs, and theories have all led to where personalized learning stands today. As mentioned previously, personalized learning environments have become popular in higher education institutions for online-based or distance education courses, but the application of personalized learning in corporate learning and training programs is still fairly new.

**Corporate Learning: Traditional and Current Practices**

Most traditional methods of corporate learning are focused on new hire formal training and instruction. This can be face-to-face instruction, or a web-based training program that provides the initial instruction needed for employees who have just begun working with the company. Additionally, informal learning occurs daily, regardless of training methods or input. Seminars or shorter courses that cover specific topics and new work processes are also a part of corporate education today (Attwell, 2010).

According to Andreas Schmidt, from the FZI Research Center for Information Technologies, online corporate learning can be divided into two categories: knowledge management and e-learning. Knowledge management addresses the lack of knowledge sharing in the organization, providing solutions to encourage sharing through knowledge
assets or discussion forums; however, knowledge management does not encompass collaborative learning, but only the passing along of knowledge among members of the organization (Schmidt, 2005). Schmidt (2005) states, “Still, knowledge management does not fully realize that it is mainly about facilitating purpose-oriented learning in organizations and that thus understanding how learning takes place is extremely important to consider” (p. 2).

The second form of learning Schmidt discusses is e-learning. E-learning takes a training course and applies it to an online environment. It focuses on the user’s construction of new knowledge and applies technology to aid in the process. Courses are comprised of lessons, where learning resources are provided and connected to the learning goal. E-learning still assumes that learning can be improved through guidance, although an instructor or teacher may not provide this as a traditional classroom environment would; however, the concept of guidance still implies the separation of roles of the trainer and the learner (Schmidt, 2005).

E-learning or online courses for corporate training programs have become increasingly popular since the early 2000s. Some of the benefits of online training include relatively low cost and flexibility of the training schedule (Strother, 2002). However, implementing e-learning does not necessarily equal effective training results. In her study, An Assessment of the Effectiveness of E-Learning in Corporate Training Programs, Judith Strother (2002) discusses the importance of measuring the results of online training programs. She states, “To justify making decisions about training programs independently of training costs considerations, managers need concrete measures of program effectiveness” (p. 2). While many training directors survey the user’s reactions to their
online courses, most do not make a great effort to measure the effectiveness of the programs themselves (Strother, 2002).

As mentioned previously, much of the learning that takes place in a corporate setting is informal. This type of learning is not addressed with traditional classroom training or e-learning methods. In his article titled *Optimizing Learning*, published by the American Society for Training and Development, Clark Quinn (2009) states,

> Organizations can no longer be dependent on training to meet their learning needs...The steady acceleration of information creation and advances in technology has reached a critical point, and we have been thrust into a realization that our old models of management cannot cope. The chaotic underpinnings of the world have been unmasked, and continual adaptation is the new status quo (p. 1).

Informal corporate learning requires a break from the traditional methods of training, whether they be face-to-face or in an online format. Continuous learning through a variety of outlets allows individuals to collaborate, research, experiment, and thus personalize their learning method.

**Shift in Perspective: How Personalized Learning Can Be Implemented**

According to Quinn's article (2009), very little of corporate learning comes from formal courses, but through observing, reflecting, participating, communicating, and collaborating. Formal learning provides the learner with the critical skills and foundation, but often times formal training does not utilize performance support tools or acknowledge the social learning environment. Several models have recently been proposed in order to develop corporate learning environments that embody both traditional training methods
and informal learning methods. These models include the embedded model, the wrapped model, the community model, and context-aware learning.

In his article titled *Learning 2.0 and Workplace Communities*, written for the American Society for Training and Development, David Wilkins (2009) proposes three models that socialize formal learning, creating social learning methods:

**The Embedded Model.** In this model, social media is integrated with formal learning content. This reintroduces the social aspect into traditional web-based training, which tends to remove interaction and sharing of real world experiences among colleagues. In addition, the embedded model allows this social interaction without the sacrificing the cost savings that online training tends to provide the company (Wilkins, 2009).

**The Wrapped Model.** While similar to the embedded model, the wrapped model differs in that the social media is “wrapped” around more formal content. Instead of completely immersing social networking into a training course, the wrapped model provides social outlets for participants to discuss and network with each other before or after a formal training session. This could include discussion forums, groups on social networking sites, or other web-based outlets for social interaction (Wilkins, 2009).

**The Community Model.** In the community model, formal learning methods are cast aside for a completely social and informal learning experience. This model, however, does not imply that formal learning does not exist, but that an informal learning environment exists separately from formal learning or training. According to research by the U.S. Department of Labor, much of corporate learning takes place
socially or informally, but these exchanges are not tracked or monitored by organizations. The community model is a way to formalize the informal communication within a company, by providing an outlet to observe informal communication and provide insight into the issues employees may face (Wilkins, 2009).

Wilkins (2009) implies that the embedded model, the wrapped model, and the community model are not mutually exclusive and can be modified to fit the company as needed. These three models act as a way to implement more social interactions in formal training in order to create a more personalized learning experience.


Course-steered learning is typically the most used type of learning style in corporate environments. This type of learning style usually encompasses e-learning courses with in-house seminars, creating a blended learning experience, but is solely driven by the course structure. In order to create context-awareness in course-steered learning, Schmidt proposes course structures that can adapt to the learner with pre-defined learning paths based on contextual variables (Schmidt, 2005).

On the other hand, the self-steered learning process is completely controlled by the learner. In addition to controlling the pace of the learning process, they are able to seek out
resources and contact others for assistance if needed. Schmidt suggests creating “implicit assumptions of the learner” as a way to make self-steered learning more context-aware (Schmidt, 2005).

Finally, context-steered learning is a solution that addresses what course-steered learning and self-steered learning may lack. Course-steered learning limits the amount of flexibility, and self-steered learning may not address learning gaps that could occur. In a context-steered learning environment, the learner’s activity is monitored in order to address learning gaps, and a list of resources or programs are compiled and recommended to the user for further education. This allows the user to maintain flexibility in their learning environment, but still ensure that they are covering all of the content needed (Schmidt, 2005).

Schmidt’s modifications to course-steered and self-steered learning, along with the creation of context-steered learning, allow a more personalized experience for the user without sacrificing the importance of the course content and context.

Summary

Personalized learning environments have been gaining popularity over the past few years as a way to allow the student to control and optimize the way they learn. While it has been studied and integrated successfully in higher education, personalized learning is still fairly new to the corporate world. E-learning practices in corporate training programs have become the norm, but many of these programs do not allow for personalized learning. Recently, some learning methods have been proposed in order to incorporate more personalized experiences into corporate training. These learning methods include Wilkins’ (2009) embedded model, wrapped model, and community model for blending social
networking into formal learning, and Andreas Schmidt’s context-aware learning methods that provide ways to modify course-steered and self-steered learning into more personalized experiences.

Overall, the concept of personalized learning in corporate training is still fairly new, and more research needs to occur in order to determine how personalized learning can be utilized most effectively in a corporate environment.
Chapter III: Method

While personalized learning environments have been studied in higher education, sufficient research on the use of personalized learning environments in corporate training has not been conducted. This chapter will describe the research process, including the research design, characteristics of the population, how data will be collected and analyzed, and a timeline for the process.

Restatement of the Problem

As stated in Chapter I, many companies are not taking advantage of social media or other newer personalized learning techniques in the training process that are currently used in traditional learning settings.

Restatement of the Objectives

The objectives of this study were to: 1.) Analyze the resources, tools, and delivery methods currently being used in workplace learning; 2.) Identify the potential for applying personalized learning environments in a workplace environment; and 3.) Identify the receptiveness companies have towards personalized learning and its potential application in their training programs.

Research Design

A descriptive research method was used to gather data in this study. Defined by Mertler and Charles (2005), a descriptive method is research that will “depict people, situations, events, and conditions as they currently exist” (p.31). The data was used to develop a trend analysis of the results, showing patterns in the panel responses. A model was developed and sent to an expert panel of five individuals who are involved with corporate training. First, members of the panel viewed the model content. After viewing
the model, the panel answered a set of questions regarding their current training methods, whether PLEs are currently being used with their training, and how the PLE model developed may or may not be implemented into their training programs.

**Model Development**

The model development process began with an analysis of the literature review. Several concepts from the literature were used in the development of the model framework. These concepts include formal learning, informal learning, knowledge management, and collaboration. The online resource examples detailed in the PLE Model Video and PLE Example Video (Appendix B) were taken from the researcher’s own personalized learning environment and resources discussed in past PLE-based courses the researcher has taken.

The model framework (Figure 1) was broken down into two main sections: formal learning and informal learning. From there, the two sections were broken down into what elements make up formal learning versus informal learning. Resource examples of these training elements were also included in the model framework.

Eight panel questions were developed so that the researcher could obtain as much information about the participants’ current training programs and views on personalized learning without overwhelming the participants with an abundance of questions. Additionally, the questions were worded so that information about company training could be gathered, but confidential or private company information would not be asked. Since the study objectives require information about current training practices, integration of PLEs, and views on personalized learning environments, the panel questions were developed to acquire information to meet the objectives.
Characteristics of the Study Population

As mentioned previously, the study population was comprised of an expert panel. These five individuals included representatives from local companies. Company information is detailed in Table 1. All panel members work directly with the training of individuals in their corporations, and provided the information needed to obtain the most accurate response that represents their company. The sampling technique used to select the expert panel was a convenience sampling method. The panel members were selected based on their job responsibilities relating to training and their availability to be a part of the panel.

Table 1

*Expert Panel Companies*

<table>
<thead>
<tr>
<th>Type of Company</th>
<th>Location</th>
<th>Relative Size</th>
<th>Range of Clients Served</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management Consulting Firm</td>
<td>Northwest Ohio</td>
<td>About 50</td>
<td>Works with Fortune 500 companies, large and small. Products used in more than 20 countries.</td>
</tr>
<tr>
<td>Glass Manufacturer</td>
<td>Northwest Ohio</td>
<td>More than 24,000</td>
<td>Serves world's best-known food and beverage brands in North &amp; South America, Europe, Asia.</td>
</tr>
<tr>
<td>Vehicle Parts Manufacturer</td>
<td>Northwest Ohio</td>
<td>More than 22,000</td>
<td>Serves automakers in North &amp; South America, Europe, Asia.</td>
</tr>
<tr>
<td>Local Department of Social Services</td>
<td>Northwest Ohio</td>
<td>About 80</td>
<td>Serves local county. Adult Protective Services, Child Care, Home Health Aid Services, Medical Transportation Services.</td>
</tr>
<tr>
<td>Solar Energy Module Manufacturer</td>
<td>Northwest Ohio</td>
<td>More than 6,000</td>
<td>Worldwide presence in North America, Europe, Asia, and Australia.</td>
</tr>
</tbody>
</table>
Data Collection Instrument

A video of the PLE model (Appendix B) and a set of follow-up questions (Appendix C) were e-mailed directly to the members of the panel. Responses to the questions were also obtained through e-mail.

Procedures of Data Analysis

This study analyzed data using descriptive statistics. Fraenkel and Wallen (1993), define descriptive statistics as, “data analysis techniques enabling the researcher to meaningfully describe data with numerical indices or in graphic form” (p. 549). The panel responses were analyzed through a trend analysis and grouped based on type of response. Data was analyzed to determine if and how personalized learning is currently being used in corporate training programs, and how the panel responded to the use of the PLE model in their programs. Graphs were developed to illustrate trends that appeared in the responses.

Timeline

Table 2

Timeline for Study Completion

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<td>December 2010</td>
<td>Proposal Completed, Proposal Defense</td>
</tr>
<tr>
<td>January 2011</td>
<td>Model Developed, Send Model and Questions to Panel</td>
</tr>
<tr>
<td>January 26, 2011</td>
<td>Graduation Application Due, Obtain Panel Responses</td>
</tr>
<tr>
<td>February 2011</td>
<td>Complete Chapter IV: Findings and Results</td>
</tr>
<tr>
<td>March 2011</td>
<td>Complete Chapter V: Summary, Final Thesis to Committee</td>
</tr>
<tr>
<td>April 2011</td>
<td>Thesis Defense, Submit Approved/Error Free Thesis to Graduate College</td>
</tr>
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</table>

Summary

A descriptive study was conducted in order to research the types of training programs used in corporate settings, to determine whether personalized learning is
currently being implemented in these programs, and to decide whether the PLE model
developed can be utilized. Responses were collected through e-mail, and a trend analysis
of the data was illustrated in charts.
Chapter IV: Findings

This chapter will detail the responses provided by the expert panel members and provide a trend analysis of the data obtained. As mentioned in Chapter 3, the five panel members were asked to view a screencast video that detailed a PLE model, then responded to 8 questions regarding their training process and the potential application of the model in their training.

Expert Panel Review

Before viewing the PLE model screencast, the panel members were asked to read a definition of personalized learning environments to assure that they would understand the concept of personalized learning environments and respond to the questions accurately. The definition provided is as follows:

“What are Personalized Learning Environments? A personalized learning environment, or PLE, is the platform from which a learner can ‘direct’ his or her own learning in a personalized learning environment, the learner is able to set learning goals, manage the content and learning process, and communicate with others in the learning process in order to achieve learning goals. Most uses of PLE are focused online; however, personalized learning environments embody the entire set of resources that the learner is using in the learning process, which can be offline as well. While higher education institutions have embraced the use of personalized learning, PLEs are fairly new to many organizations and may not being utilized to their full potential in organizational training or workplace learning.”

The PLE model created was based on concepts detailed in Chapter 2, including formal learning, informal learning, and knowledge management. The PLE model video
provided the framework for the model (also detailed in Figure 1) and a description of the model. An additional video provided an expanded explanation of the resource examples mentioned in the PLE model video, providing clarification for those panel members who may not be familiar with all of the online resources. Both videos can be viewed at http://www.youtube.com/brachelj

![Diagram](image)

*Figure 1. Personalized Learning Environment Model Framework*
Trend Analysis

After viewing the PLE model video, the panel members were asked to respond to a series of questions regarding their own training tools, resources, and methods; the integration of PLE in their training in general; and the application of the provided PLE model in their training. Panel responses are detailed in Appendix D.

**Question 1: Who do you provide formal training for? (all employees, middle management, upper management, etc.)**

![Type of Formal Training Provided](image)

**Figure 2. Type of Formal Training Provided.**

Four of the five panel members provide formal training for all levels of employees, from the CEO and board members to entry-level employees. One member provides training for mostly middle and upper management employees.
Question 2: What type of training strategies do you use? (classroom/seminar, online, combination)

Figure 3. Type of Training Strategies Used.

A majority of the panel members stated that they utilize a combination of classroom/seminar and online training methods. Determining factors for the type of training include subject matter and level of employee. Two of the participants also use a hybrid of classroom and online sessions for their training.

Question 3: If your training program is classroom/seminar based, do you provide any additional resources or outlets for additional learning? If so, what?
All members of the panel provide additional resources for their classroom training. A majority of these resources are printed manuals and workbooks that correlate with the course material. Three of the panel members also describe online resources that are provided outside of classroom training, such as e-learning sessions, sites with supplemental course content, and extended training.

**Question 4: If your training program is based online, do you provide any social networking resources with your program to allow for learner collaboration?** (discussion forums, chat, others) If so, which resources?

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### Additional Resources for Classroom/Seminar Training

<table>
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<tr>
<th>Resource Category</th>
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<td>Books, Manuals, &amp; Online Resources (1) (n=5)</td>
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Four of the five panel members stated that no social networking resources were provided with online training; however, one person stated that they are trying to find a way to incorporate social networking into their program. Another member mentioned “position-specific” discussion forums that are sometimes utilized with groups of managers. One person mentioned that typically the use of social networking-type sites are not permitted with their company, because, “These sites are blocked by our firewall to protect intellectual property rights, copyrighted material, etc”.

**Question 5: Are your training strategies driven by course structure, driven by the learner, or context-driven, flexible for learners but still driven by content?**
This question provoked the most diverse responses. Two of the panel members use a context-driven approach. Another members’ response detailed the factors that determine what strategy is used: “Are trainees co-located, or are they only virtually related? Does the content lend itself to computer-based and online delivery? Does the training have a laboratory component or require use of simulators? Does the training allow for large groups or limited in size? Does the training require research and/or collaboration among trainees?” One person claimed their company uses all three, stating,

“Training strategies are driven by all three of the listed options. Driven by course structure when the course is dictated by geographical, legal, etc. limitations/expectations. Driven by the learner in almost all cases to ensure that the training is tailored to the learner’s expectations, preferences, experiences, etc. And driven by context when specific content must be delivered to a certain audience.”
Another panel member uses a content or course-driven strategy, as the training content pertains to the policies and procedures of their department.

**Question 6: Have you considered using a more personalized learning environment with your training or other workplace learning? Do you think the outcome will be more/less/just as effective?**

![Use Of PLEs in Corporate Training](image)

*Figure 7. Use of Personalized Learning Environments in Corporate Training.*

All panel members have at least considered utilizing personalized learning environments with their workplace learning, however, only two of the participants describe using PLEs currently. The remaining participants foresee using personalized learning environments in the future. While none of the panel members think that the outcome of using PLE in training will be less effective, some only think it will be just as effective. One participant states,
“I believe that personalized learning environments will slowly become more common in the private sector. As collaboration between employees located around the world becomes more common, requiring ongoing interface and discussion, PLE’s will become more necessary. I suspect that PLE training can be created to be as effective as traditional training methodologies. It may also become more efficient and economical. It is difficult to forecast whether PLE training will become more effective than non-PLE training.”

Two of the participants do believe that utilizing PLEs in their training programs will deliver a more effective outcome. Although they believe PLEs can provide an outcome that is more effective, one of the responses explains the difficulty in implementing PLEs:

“We have considered offering a more personalized learning environment for our clients. I think that the outcome will be more effective. One of the challenges is that many of the tools are user-centric (Facebook, LinkedIn, Twitter) and there does not seem to be anything out that is process-centric--yet.”

The overall attitude toward the use and effectiveness of PLEs is positive, however, those who currently utilize PLEs in their training methods are in the minority.

**Question 7: Do you believe that all or part of this model could be utilized with your company/training? Why or why not?**
Figure 8. Potential Implementation of Model.

All of the participants claimed that at least part of the PLE model illustrated could be implemented in one or all of their training programs. One panel member believed the entire model could be used stating, “Yes, this model could be used in some of our training to connect the user to his/her training in a personalized manner. Some of my audience demographic is highly involved in social networking”. Another participant thought that the model could be utilized, but felt that there may be problems in the process of getting the model implemented. He mentioned, “The primary obstacle would likely be managers who don’t believe that employees are capable or responsible enough to make good decisions within a PLE system”. Additionally, one participant felt that the model would be a good fit for entry-level employees, but not necessarily in other positions, saying, “I could see the PLE gaining momentum at the entry-level worker positions. Most of these employees are younger and already knowledgeable with social networking methods. This method could
clearly define career paths to the next level and track progress”. Two panel members thought that variations on the model could be implemented, supporting the emphasis on connectivity, collaboration and research, but making modifications to the specific online resources used.

**Question 8: If you don’t believe you could use this model with your company, are there other ideas you have for implementing PLE in your training?**

All participants felt they could use at least a part of the model. One panel member does feel that a PLE-based system would have to be incorporated slowly, and another participant says that the implementation of PLEs in their company’s training has been extremely positive so far.

**Summary**

The expert panel provided a window into the training tools, resources, and methods currently being used in corporate settings. A majority of the training provided is a combination of classroom and online in a context-driven format, and various types of additional resources are given. Overall, the response to the use of PLEs and the model provided was very positive, and it seems that personalized learning environments are slowly being integrated in corporate training.
Chapter V: Summary, Recommendations, & Conclusion

The following chapter provides a summary and conclusion of the study and the objectives met, as well as recommendations for further research. The study allowed the researcher to obtain information from training experts in a variety of corporate settings regarding training methods used, the potential use of the personalized learning environment model presented, and the general receptiveness the company has towards the utilization of personalized learning environments.

Summary

Utilizing personalized learning environments is a new concept in corporate training. Many companies are not taking advantage of social media or other newer personalized learning techniques in the training process that are currently used in traditional learning settings. Three objectives were developed and researched to address the problem of this study. The objectives are as follows:

Objective 1: Analyze the resources, tools, and delivery methods currently being used in workplace learning. Current training tools, resources, and delivery methods in workplace learning were researched in the literature review. Concepts such as formal versus informal learning, knowledge management, and e-learning were discussed in the review. Additionally, the expert panel provided the current training strategies, tools, and resources that are being used by their corporations. These include and are not limited to: classroom/seminar training, online training, print and web resources, and discussion forums. The training methods and tools described by the panel members advocate the typical methods discussed in the literature review. E-learning in corporate training has become popular and is used
in various capacities with the companies that the panel members represent, where the benefits can be the relatively low cost and flexibility of the training schedule, discussed in Chapter 2.

In addition, the informal learning resources provided by these companies show the importance of informal learning and continuous learning, detailed in the literature. With those resources, the learner can research and experiment, which further personalizes the learning experience. While the trend does not support the use of social networking, the option to collaborate via discussion forums utilizes the Wrapped Model developed by Wilkins (2009), providing social outlets before/after training sessions.

**Objective 2: Identify the potential for applying personalized learning environments in a workplace environment.** Several models and theories for applying personalized learning in corporate settings were researched in the literature review. Wilkins’ (2009) Embedded Model, Wrapped Model, and Community Model, as well as Schmidt’s (2005) context-aware learning theory allow personalized learning environments to be implemented in corporate learning. Also, the study allowed the panel members to discuss how their company applies personalized learning environments, or, if they are not currently implemented, if and how they plan to utilize PLEs. All panel members have at least considered integrating personalized learning environments in their training, and some already do implement PLE in some capacity. In addition, a PLE model was presented to the panel in the study, and the response for implementing the model was positive.
Surprisingly, the results do not support Schmidt’s notion that the majority of corporate environments use course-steered learning, but suggest context-steered or a combination of learning strategies are dominant. This allows a more personalized experience while maintaining the importance of content and context.

The study results show the potential for PLE implementation in training programs discussed in Chapter 2. The responses suggest that the companies that don’t currently utilize PLEs are intrigued by their potential use, but are unsure of how to integrate personalized learning into their programs. While the participants support the use of either all or part of the model presented to them, the potential obstacles mentioned upholds the defined roles of instructor and learner that are typical in a traditional learning environment. On the other hand, the potential use of the PLE model for entry-level employees and their career paths supports Pink’s theory that autonomy, mastery, and purpose drive employees to learn and advance in their careers.

**Objective 3: Identify the receptiveness companies have towards personalized learning and its potential application in their training programs.** The literature review provided the traditional views and methods used in corporate training. Furthermore, the study results allowed the researcher to learn the general receptiveness companies have towards the application of personalized learning environments in their training programs.

Overall, the reception is positive, although some feel that there are obstacles to finding the most effective application of PLE in their corporation. The study results show that these companies are veering away from some of the traditional
views of corporate training outlined in the literature, however, they have not all found the perfect way to utilize personalized learning environments with their training methods.

**Recommendations**

The study provided information regarding the current training tools, resources, and methods used in workplace learning, the potential for applying personalized learning environments and the PLE model provided, and the general receptiveness companies have towards the application of personalized learning environments in their training. The researcher recommends future research in the actual application of personalized learning environments in corporate settings, including but not limited to: what types of training PLEs have been applied to (classroom or online, level or type of training); what personalized learning environment models have been used; the effectiveness of the PLE in the training program; and how the employees feel the personalized learning environment has helped or hindered their training and learning experience. A larger sample for research could also provide diverse and accurate results.

**Conclusion**

Corporations are slowly integrating personalized learning environments in their training, and the overall reception of PLEs and their effectiveness in training applications is positive. While the study results showed a positive outlook on personalized learning environments, it seems that some companies still haven’t determined the best way to apply PLEs in their training and workplace learning. This study has provided information regarding what is currently being utilized in corporate training, the potential for applying personalized learning environments, and how companies feel about PLE. Further research
may be able to determine what particular types of training will benefit from PLE, how PLE can be applied, and how the application of personalized learning environments has made training more or less effective.
References


Strother, Judith. (2002, April). An Assessment of the Effectiveness of e-Learning in Corporate Training Programs. *International Review of Research in Open and Distance


Appendix A: E-mail

(Name):

My name is Rachel Barnes. I am a graduate student from Bowling Green State University. As part of my work on my Master’s thesis in the College of Technology, I am conducting a research study of corporate training methods and the implementation of personalized learning environments. Dr. Terry Herman and Dr. Gary Benjamin suggested that I contact you to be a part of an expert panel in order to obtain information about current training methods from a variety of organizations.

The purpose of this study is to learn what resources, tools, and delivery methods organizations are currently using in workplace learning and to learn how organizations feel about using personalized learning methods in their training programs.

If you would be willing to take part in this panel, I would greatly appreciate it. Linked below you will find 2 short videos: one of my Personalized Learning Environment model, and another with PLE resource examples. After viewing the videos, please answer the set of questions attached. I would like to obtain the panel responses by Friday, March 11th.

If you have any additional questions about this study, you can contact me at barnesr@bgsu.edu and 419.270.8283, or my advisor, Dr. Terry Herman at hermant@bgsu.edu and 419.372.7265.

Personalized Learning Environment Model Video:  
http://www.youtube.com/user/brachelj#p/a/u/1/IP04uy8aNcs

Personalized Learning Environment Example Video:  
http://www.youtube.com/user/brachelj#p/a/u/0/-Bp_3Cl8kc

Thank you for your time.

Rachel Barnes
Graduate Assistant  
BGSU College of Technology  
barnesr@bgsu.edu  
419.270.8283
Appendix B: Personalized Learning Environment Videos

Personalized Learning Environment Model Video

http://www.youtube.com/user/brachelj#p/a/u/1/IP04uy8aNcs

Full Screen
Informal Learning

- Knowledge Management
- Collaboration
- Research

Personalized Learning Environment Model for Corporate Training Programs

- Facebook
- Twitter
- RSS Feeds

- diigo
- zotero

- netvibes
- PageFlakes
Personalized Learning Environment Example Video

http://www.youtube.com/user/brachelj#p/a/u/0/-Bp_3CI8kc

Social Networking/Collaboration: Facebook

Social Networking/Collaboration: Twitter
RSS Feeds: Google Reader

Personalized Page Organization: PageFlakes
Bookmarking/Research Organization: Zotero
Appendix C: Expert Panel Questions

What are Personalized Learning Environments?

A personalized learning environment, or PLE, is the platform from which a learner can “direct” his or her own learning in a personalized learning environment, the learner is able to set learning goals, manage the content and learning process, and communicate with others in the learning process in order to achieve learning goals. Most uses of PLE are focused online; however, personalized learning environments embody the entire set of resources that the learner is using in the learning process, which can be offline as well. While higher education institutions have embraced the use of personalized learning, PLEs are fairly new to many organizations and may not being utilized to their full potential in organizational training or workplace learning.

Panel Questions:

1. Who do you provide formal training for? (all employees, middle management, upper management, etc.)

2. What type of training strategies do you use? (classroom/seminar, online, combination)

3. If your training program is classroom/seminar based, do you provide any additional resources or outlets for additional learning? If so, what?

4. If your training program is based online, do you provide any social networking resources with your program to allow for learner collaboration? (discussion forums, chat, others) If so, which resources?

5. Are your training strategies driven by course structure, driven by the learner, or context-driven, flexible for learners but still driven by content?

6. Have you considered using a more personalized learning environment with your training or other workplace learning? Do you think the outcome will be more/less/just as effective?

7. Do you believe that all or part of this model could be utilized with your company/training? Why or why not?

8. If you don’t believe you could use this model with your company, are there other ideas you have for implementing PLE in your training?
Appendix D: Expert Panel Responses

1. Who do you provide formal training for? (all employees, middle management, upper management, etc.)

   • All levels of employees are given training. This includes CEO and the board down to plant level hourly employees.
   • I provide formal training for mid and upper management, but it does eventually get cascaded down throughout all levels of the organizations I work with.
   • All employees from senior management to machine operators.
   • I provide formal training for a large segment of our workforce including, but not limited to, employees, managers and directors from various departments.
   • All employees including middle and upper management are required to participate in training quarterly, bi-annually, and annually.

2. What type of training strategies do you use? (classroom/seminar, online, combination)

   • Depending on the type of training multiple setting strategies are used. Classroom, online via company intranet are the most frequently used.
   • I provide small group (6-12 people) training, eLearning, and webinars (combination).
   • The training strategy depends on the employee level and the subject matter.
     • E.g. senior managers may attend leadership seminars at university levels or participate in financial seminars online.
     • Midlevel and first-level management normally participate in proprietary classroom training on general management skills. These programs are often hybrid in nature with computer-based elements.
     • Hourly employees receive computer-based safety training often supplemented with some classroom activity. Hourly employees also receive various forms of computer-based operator training in addition to classroom simulations and on-the-job coaching.
     • The company also employs large-group informational meetings.
     • Employees can self-register for a variety of educational/training programs. These programs may be computer-based, online or classroom. To the extent that students may self-select, one could say they are demonstrating some preferences for a personalized learning environment.
   • I largely implement online training solutions.
   • We utilize diverse training including classroom, online, seminars, and in-services.

3. If your training program is classroom/seminar based, do you provide any additional resources or outlets for additional learning? If so, what?
• Classroom training has notebooks and manuals that are used and kept by the employee once class is completed for future reference.

• Most of our clients do offer follow-up eLearning after the small-group sessions for those who could not attend or for periodic updates. We do have a few clients who contract with us to build quarterly updates to our eLearning.

• Online resources are often utilized as part of classroom/seminar based training. Specific sites are referenced with URL’s for trainees to access in and out of class.

• In classroom training, handouts, break-out sessions, group projects, etc. are used to enhance learning.

• Yes. We have a Staff Development Coordinator who holds all and any relevant resources needed within the organization. She may provide additional resources via the website, specific individuals who are specialized in a specific area, books, etc. We offer continuing education credits on a monthly basis thorough our staff development calendar, college courses through our college tuition reimbursement as well as our professional development to line staff. We also offer staff to participate in Leadership and Professional Advancement Through Training and Education in Human Services (an accredited program in the State of Ohio for Ohio Department of Developmental Disabilities).

4. If your training program is based online, do you provide any social networking resources with your program to allow for learner collaboration? (discussion forums, chat, others) If so, which resources?

• My organization currently does not utilize social networking for any of our online training or collaboration efforts. These sites are blocked by our firewall to protect intellectual property rights, copyrighted material, etc.

• Some of our clients point to LMS for further training or connection to mentors / subject matter experts. Social networking (web 2.0 or enterprise 2.0) technologies are new to the very large organizations and many are trying to figure out how they can incorporate these technologies into their workflow. Enterprise 2.0 is just Web 2.0 tools applied to the enterprise. I think they are all looking to see how they can leverage social networking tools that people use in their personal lives for getting work done faster / better.

• Social networking sites are rarely used in my industrial training experience. It is becoming more common for “position-specific” discussion forums to be established which allows a group of plant managers or production managers, etc. to share ideas, problems, and suggestions; and generally discuss issues relevant for the particular job level. The technologies would range from video-conferencing, skyping, a controlled chat site by email or simply audio conferencing. As communication and training requirements become more global it will be necessary to utilize more distance friendly communication and training technologies.
Not currently.
We do not offer social networking resources such as forums, chats, twitter, etc. We do offer a web-based health and safety quiz on an annual basis but there is no opportunity for social networking. We do have an intra-net which allows the organization to place information but there is no opportunity to converse outside of e-mail.

5. Are your training strategies driven by course structure, driven by the learner, or context-driven, flexible for learners but still driven by content?

• Our training is mostly context driven.
• I think that driving training by course structure is backward and using a tool that is looking for a problem to solve. I think that most people I talk with prefer context-driven training, but budget and time are constraints. If I understand your meaning, I would say that context-driven training is more like an EPSS model of easy access to just the right information when and where I need it. Understanding what one does in the context of the business will help one make better decisions and better align to corporate goals and strategies.
• Most training strategies are driven by a combination of factors. E.g.:
  • Are trainees co-located, or are they only virtually related?
  • Does the content lend itself to computer-based and online delivery?
  • Does the training have a laboratory component or require use of simulators?
  • Does the training allow for large groups or limited in size?
  • Does the training require research and/or collaboration among trainees?
• Training strategies are driven by all three of the listed options. Driven by course structure when the course is dictated by geographical, legal, etc. limitations/expectations. Driven by the learner in almost all cases to ensure that the training is tailored to the learner’s expectations, preferences, experiences, etc. And driven by context when specific content must be delivered to a certain audience.
• Our training strategies are driven by content, which pertains to policy/procedure/Ohio Revised Code, Ohio Department of DD rules.

6. Have you considered using a more personalized learning environment with your training or other workplace learning? Do you think the outcome will be more/less/just as effective?

• I think a personalized learning environment has merit. Personal growth could easily tracked by the employee (self-empowerment). Different learning types (visual, hands on, etc.) could benefit by tailoring programs that provide the best chance of success.
• We have considered offering a more personalized learning environment for our clients. I think that the outcome will be more effective. One of the
challenges is that many of the tools are user-centric (FaceBook, LinkedIn, Twitter) and there does not seem to be anything out that is process-centric--yet.

- Personalized learning environments, as such, have not been systemically incorporated into the traditional training environment. I believe that personalized learning environments will slowly become more common in the private sector. As collaboration between employees located around the world becomes more common, requiring ongoing interface and discussion, PLE's will become more necessary. I suspect that PLE training can be created to be as effective as traditional training methodologies. It may also become more efficient and economical. It is difficult to forecast whether PLE training will become more effective than non-PLE training.

- Yes. I am currently working on a series of training modules that will be personalized to the audience.

- We are in the process of changing our general orientation learning environment to a more personalized environment in hopes that employees will relate, enjoy, and retain information. The various environments will include video to web, interactive activities via web, hands-on, as well as some classroom setting.

7. Do you believe that all or part of this model could be utilized with your company/training? Why or why not?

- Parts of this model could used within my organization. However, at this time the structure is a little rigid. Our IT HR strategy at this time is being re-evaluated. I could see the PLE gaining momentum at the entry level worker positions. Most of these employees are younger and already knowledgable with social networking methods. This method could clearly define career paths to the next level and track progress.

- I believe that many OD/HR/Training people are thinking about variations of this model. Enterprise 2.0 tools offer much of this (wiki, yammer, SharePoint) discussion already. What I hear from clients is that often tools like FaceBook or twitter are often blocked by corporate IT, but LinkedIn is considered to be more professional, so it is more often allowed. In the next few years, each of these will be used in some combination with much more connectivity. I love this stuff and the clients I talk with understand the benefits of the connectivity. I think it is interesting how you have created this "dashboard" stuff; but you are having to use five different applications--when you can get all these things in one place, that will be great.

- There is no reason to think that this PLE model couldn't be utilized with my company's training system. The primary obstacle would likely be managers who don't believe that employees are capable or responsible enough to make good decisions within a PLE system. There are still many managers who tend to believe that it is their job to determine what training is necessary, for whom, when, and how it should be delivered. These managers would also
likely not be the most technologically savvy and therefore question the legitimacy of any newer, non-traditional technologies.

• Yes. This model could be used in some of our training to connect the user to his/her training in a personalized manner. Some of my audience demographic is highly involved in social networking.

• Yes, however, management is supportive and promotes face-to-face training. It’s important that staff physically see and hear directly from management on an on-going basis. We do not want to lose our ability to interact with staff. This model continues to support positive morale within an organization.

8. If you don’t believe you could use this model with your company, are there other ideas you have for implementing PLE in your training?

• We do have other things we are working on, but they are not for public consumption.

• I do believe the model would be usable, with qualifications. A PLE training system would need to be incorporated slowly. Employees will need to be technically oriented.

• I do believe it could.

• Utilizing the various learning environments in our organization has been positive. Staff has the opportunity through many of our programs to utilize the PLE model and it is extremely positive.