

**INTERNATIONAL
JOURNAL
OF
INSTRUCTIONAL
TECHNOLOGY
AND
DISTANCE LEARNING**

**April 2011
Volume 8 Number 4**

Editorial Board

Donald G. Perrin Ph.D.
Executive Editor

Elizabeth Perrin Ph.D.
Editor-in-Chief

Brent Muirhead Ph.D.
Senior Editor

Muhammad Betz, Ph.D.
Editor

ISSN 1550-6908

PUBLISHER'S DECLARATION

Research and innovation in teaching and learning are prime topics for the *Journal of Instructional Technology and Distance Learning* (ISSN 1550-6908). The Journal was initiated in January 2004 to facilitate communication and collaboration among researchers, innovators, practitioners, and administrators of education and training involving innovative technologies and/or distance learning.

The Journal is monthly, refereed, and global. Intellectual property rights are retained by the author(s) and a Creative Commons Copyright permits replication of articles and eBooks for education related purposes. Publication is managed by DonEl Learning Inc. supported by a host of volunteer editors, referees and production staff that cross national boundaries.

IJITDL is committed to publish significant writings of high academic stature for worldwide distribution to stakeholders in distance learning and technology.

In its first five years, the Journal logged over five million page views and almost one million downloads of Acrobat files of monthly journals and eBooks.

Donald G. Perrin, Executive Editor

Elizabeth Perrin, Editor-in-Chief

Brent Muirhead, Senior Editor

Muhammad Betz, Editor

International Journal of
Instructional Technology & Distance Learning

Vol. 8. No. 4.

ISSN 1550-6908

Table of Contents – April 2011

	Page
Editorial:	1
Donald G. Perrin	
Educational Service Strategy: Educational Service Platforms and E-Learning Patterns	3
Peter Weber and Ayman Abuhamdieh	
Improving Reading Skills through E-mail: The Case of Iranian EFL Students	15
Saeed Taki and Zahra Ramazani	
Access, Success Rate and Learner Characteristics of the Holiday Diploma in Teaching Program (Sekolah Agama Bantuan Kerajaan) Student Teachers in Malaysia	25
Helen Khoo Chooi Sim	
Dealing with Challenges to Learning in Higher Education Institutions (HEIs) through E-Learning	37
Jephias Mapuva	
Pre-Service Teachers' Attitudes towards Online Assessment: An Initial Component of Teacher Training	47
Patrice C. Boyles	

Editorial

Dreams of an Editor

Donald G. Perrin

I responded to student emails, updated grade-sheets from late assignments, and filed final grades on the web page. I created new webs for three courses that start tomorrow. I entered the carefully prepared presentation materials and opportunities for interaction. Finally, I could get to the April issue of the Journal. Sun seeping through the blinds warmed my skin and dulled my senses. Slowly my eyes closed as I fought to get out another issue...

Suddenly the office was flooded with light. Three editors were pounding on keyboards, volunteers were organizing articles that arrived today and sending them to reviewers across the country and around the world. My secretarial team was responding to authors and requests for information. My legal team was debating best practices to acknowledge source of illustrations. I was no longer a virtual office but a real publication company! I had the all the help I needed to improve and expand the Journal.

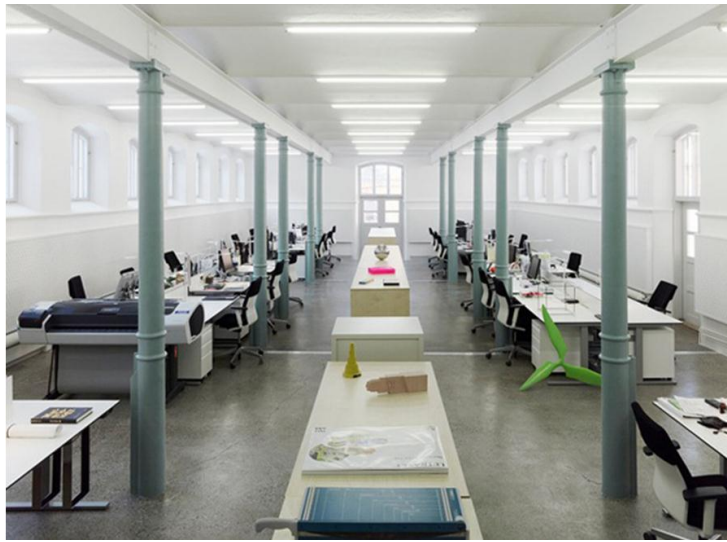


Image from smallworkspaces.com

At that moment, my wife and daughter arrived on their way to Commencement (graduation) ceremonies. I had to leave now. I was virtually pulled out of my chair, picked up coat and tie, and headed out the door. My expanded staff made me unnecessary for the rest of the day. The April issue would be completed when I returned.

Now I could enjoy the long boring speeches and the endless line of graduates racing across the platform to receive their diplomas. I could not believe how many students I knew. Then there was picture taking and family celebrations. What a wonderful experience. But I had to get back to the office...

My computer screen had gone black and the sun had set. My tiny office was empty except for piles of work to be done on my desk. The editorial was unwritten and scores of other tasks were demanding my attention. My coffee was cold and I was hungry. Maybe I could do better tomorrow with a fresh start? But I would not be here tomorrow. It had to be done today to be ready for the web person and final editorial review.

I reheated the coffee and went to work.

Editor's Note: This paper challenges us to develop efficient and flexible models for design and delivery of e-learning. The models here are much more than templates, but flexible platforms based on widely applicable and successful instructional design principles, learning theories and e-learning practices.

Educational Service Strategy: Educational Service Platforms and E-Learning Patterns

Peter Weber and Ayman Abuhamdieh

Germany and USA

Abstract

Implementing e-learning in higher education institutions is a multidimensional challenge: pedagogical, technical and economic. This paper presents two approaches to overcoming these challenges: service platforms, and e-learning patterns. Service platforms are conceptual “tool boxes” used to create educational services, and patterns are reusable solution components for recurring educational challenges. These approaches assist educators and educational institutions in providing customized educational services based on modularization, and will help them in providing their services in an efficient and effective manner. This paper describes and compares the two approaches and outlines an integrated educational service strategy from the perspective of a higher education service provider.

Keywords: blended learning, competition, customization, educational service, e-learning, learning scenario, platform, e-learning pattern, reusability, service strategy, standardization.

Introduction

Remarkable technological developments like the very fast and broad diffusion and advancement of information and communication technology (ICT) are more and more impacting educational processes. Social changes like globalization and the growing importance of lifelong learning, the changing conditions in the labour markets, and the current financial crisis, are changing educational necessities and opportunities (see e.g. Marginson and van der Wende, 2007; Fiedler, Welpel and Picot, 2006; Zentel et al., 2004). In consideration of international political agreements such as the Bologna Declaration and the Lisbon Strategy in the European Union, and with regard to the numerous other non-political triggers, established structures of higher education are being fundamentally rethought (e.g. see Commission of the European Communities, 2009; UNESCO, 2004; Commission of the European Communities, 2006). In addition, the educational landscape is becoming more competitive and expectations are changing, for example, the growing availability of accredited programs that are offered completely in a distance learning format (like at the University of Phoenix). Thus, the system of higher education is under pressure in many countries. Higher education institutions need strategies that help them to stay competitive in these changing structures. They must appreciate the importance and the challenges of consequent market/customer orientation and the need to think of individual efficiency and effectiveness strategies as a basis of sustainable competitive advantage. Development of strategies that will help them compete more effectively is essential to their continued success and growth over time.

Innovative teaching and learning concepts like e-learning, blended learning, and ideas like open educational resources, are thereby constantly gaining more attention. A great variety of developments and approaches have evolved, ranging from completely new and digitized offerings to small-sized support opportunities for single learning sessions with the help of virtual classrooms, blogs, wikis, etc. (see e.g. Stahl, Koschmann and Suthers, 2006; Salmon, 2008; Rungtusanatham et al., 2004; Gill, 2007). Such innovative educational services are considered valuable both in economic and pedagogical terms, but they require profound and interdisciplinary

knowledge on the supplier's side. What is the best composition of elements and methods and what degree of digitization should be chosen for a given class? (Ahmed, 2010; Mykytyn et al., 2008)? How can profound and sustainable production and maintenance processes be established? And how can new and innovative services be developed efficiently?

This paper focuses on the value of educational service platforms and e-learning patterns to facilitate the search for answers to these questions when it comes to e-learning. The paper elaborates the concepts of service platforms and e-learning patterns and shows how both can be combined in an educational service strategy. Building on similar underlying ideas, but deriving from different disciplines and backgrounds, suggestions for the adaptation of both approaches have been attracting notice recently in the e-learning community (Gabriel, Gersch and Weber, 2007; Derntl, 2006; Kohls, 2009).

This paper answers the following four questions:

RQ1: What are the origins and discipline implementations of service platforms and patterns?

RQ2: To what extent have patterns and service platforms been investigated in the e-learning context?

RQ3: How different or similar are the two approaches?

RQ4: How can the two approaches synergize and contribute to a more holistic educational service strategy?

In order to seek answers to these research questions, both approaches will be summarized in sections 2 and 3 regarding their main characteristics, their origin, their major objectives and preliminary findings on their applicability in the e-learning context. Section 4 then discusses overlap and differences of the two approaches, before in section 5 a more holistic educational service strategy is outlined. The paper concludes with a summary and the identification of future research issues in section 6.

Educational services could be defined as a set of components (e-lectures, face-to-face lectures, blackboard courses, wikis, forums, readings, textbooks, etc.) for blended learning. Blended learning events combine aspects of online and face-to-face instruction with regard to the learning conditions (target group, budget, available study material, etc.) and values (learning objectives, attitudes, motivation, etc.) of a setting (Garrison, Vaughan and Garrison, 2008; Graham, 2006). As a consequence of the blended learning nature of educational services, service creation processes need to consider both the characteristics of traditional teaching components and e-learning components. Traditional teaching implies high work intensity during the actual service provision, a need for synchronous presence of teacher and student, a more flexible structure, and is difficult to prefabricate and reuse. E-learning objects, in contrast, represent digital goods and thus usually imply high first-copy costs, low reproduction costs, no quality loss within reproduction processes and multilevel standardization opportunities (Shapiro and Varian, 2008). Thus the discussed educational services on a pedagogical level combine the advantages of e-learning with those of traditional teaching, while on an economical level the service creation processes need to consider the relevant characteristics of the different components of the intended service bundles.

[Educational] Service Platforms

In their internationally renowned standard reference "The Power of Product Platforms" Meyer and Lehnerd define a platform as "a set of subsystems and interfaces that form a common structure from which a stream of derivative products can be efficiently developed and produced" (Meyer and Lehnerd, 1997, p. xii). Platforms are the systematic foundation of common core technologies used to plan and create product families. Product platforms (Meyer and DeTore,

1999; Muffatto and Roveda, 2000; Simpson, Maier and Mistree, 2001; Huang, Simpson and Pine II, 2005):

- are a substantial component of multiple products,
- themselves consist of a combination of elements like subsystems and interfaces,
- build the common basis for the development of multiple similar, but still differentiated products.

In his research report, Marc H. Meyer points at Hewlett Packard's ink jet printers as a successful example of product platform architecture. While the different subsystems like the mechanics, the electronics, the software, the ink, as well as the production processes have been improved repeatedly over time, the main platform has remained largely constant for several generations of ink jet printers (Meyer, 1996).

Platform strategies focus on the identification and bundling of invariant product-inherent elements and on systematic management (evaluation, maintenance, further development, etc.) of these elements in platforms. They aim to foster and improve the systematic development of new products and provide an answer to the challenging combination of growing customization demands, decreasing product life cycles and higher development and production costs (Stauss, 2006). According to Meyer & DeTore (1999) they address "the most difficult yet important challenge facing firms seeking continued growth", which is the integration of markets, products and embodied technologies (Meyer and DeTore, 1999, p. 65).

Stauss (2006) and Meyer & DeTore (1999) were the first to introduce the platform idea to the service sector. The service platforms concept was derived from the idea of industrial product platforms and was inspired for example from the success in the automotive industry. Service platforms can be defined as sets of optional components and interfaces that form a reusable structure for services. Consequently, service platform strategies target more efficient and effective creation of differentiated service bundles, cost reduction, shorter development periods for new services and differentiated services that focus on individual customer needs. In contrast to Porter's generic competition strategy alternatives, cost-leadership, or differentiation, service platforms intentionally combine standardization and customization efforts and thus elements of cost-leadership and differentiation strategies (Porter, 2004; Huang, Simpson and Pine II, 2005; Pine, 1993; Gabriel, Gersch and Weber, 2006; Gilmore and Pine II, 1997).

Standardization and thus service platforms can thereby focus on the preparation, accomplishment, outcome, integration of the external factors (customer integration) and combinations of these aspects in a typical service process (Stauss, 2006; Gabriel, Gersch and Weber, 2007). Table 1 characterizes the types of service platforms as suggested by Stauss (2006).

An "Enhanced" Cloud Computing (ECC) platform may serve as a first example of educational service platform architecture. Cloud computing is a recent development in the history of online services where applications and data are stored in the 'cloud', a place where location does not matter, just as the exact source where electricity is generated does not matter so long as the service is provided (Han, 2010). In the production facility platform, different mechanisms and components are added to create something. The components are usually readily available near the product assembled. Similarly, in a service platform for the creation of educational services, the necessary components are available in the ECC, which would house several components such as learning modules (e.g. online classes), learning facilitators (blogs, wikis, discussion boards, chat applications, and so on), and the data used to create what is produced by the users. We call it enhanced because the current form of cloud computing is geared mostly towards storing data and providing limited application services. Expanding that into an educational service platform architecture is what enhances it.

Table 1
Types of service platforms (based on Stauss, 2006)

Platform Type	Characterization
Outcome Platforms	Outcome platforms are based on standardized service outcomes. These outcomes are the basis for different service versions and/or service bundles, in which they are combined with other service components.
Process Platforms	Process platforms contain standardized activities and can be part of different services creation processes as such.
Preparation Platforms	Preparation platforms represent sets of standardized components for the service preparation, like equipment, personnel, technology. These components are the basis of different service accomplishment processes and are experienced by the customers as part of the service.
Customer Platforms	Customer platforms consist of customers and their objects (customer specific information, rights, etc.) as external elements of service creation processes.

An educational service platform strategy as a special type of service platform strategy can be of value for commercial educational suppliers, and for non-commercial educational institutions like universities. Against the above described changes and developments, the efficient and effective development and accomplishment of educational services is one of the currently dominating challenges for these institutions. Educational service platforms as addressed and outlined by (Gabriel, Gersch and Weber, 2007) and in this paper can either be platforms for complete educational services, called “learning scenarios”, or subsystems for specific educational procedures as “phases of learning scenarios”. In addition to these platforms, modularized and standardized educational components play an important role, since they are essential elements of the platform development process and also means for the customization of the actual service bundles. An educational service platform strategy is thus at heart a profound orchestration of educational service components, phases of learning scenarios, and learning scenarios, as depicted in Figure 1.

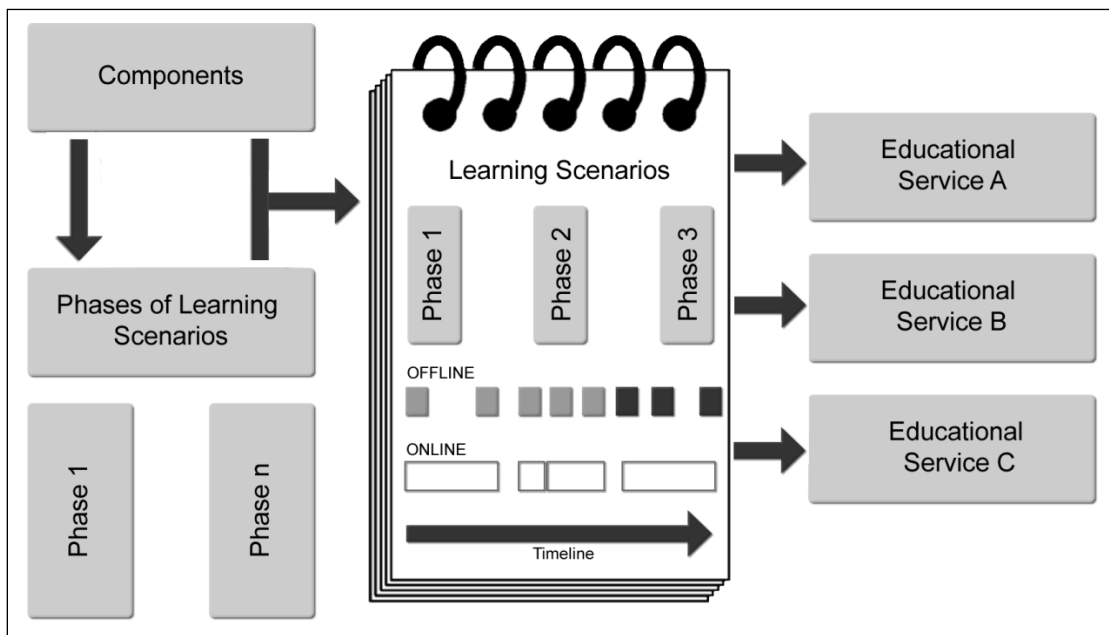


Figure 1: Components, phases of learning scenarios, learning scenarios

As service platforms, learning scenarios are models for certain types of classes. An example could be a learning scenario for an international collaborative e-learning class like one described in Gabriel et al. (2007). The learning scenario depicts approved and reusable main procedures of such international settings like a promising basic order of events, an appropriate timeframe, successful procedures for video conferences, evaluation patterns, discussion boards, etc. Instead of a monolithic structure (developed just for one class), it combines a set of phases of learning scenarios, which themselves represent reusable sub systems and consist of ideal typical processes, interfaces and educational components. Each phase focuses on a certain educational goal, such as the assimilation of basic knowledge, the facilitation of collaboration within a case study setting or the repetition of topics in combination with a preparation of the students for upcoming exams. Like in the ink jet printer example in the beginning of section 2, using a platform (the learning scenario) and the implemented phases of the learning scenarios as a constant basis for the development of international collaborative e-learning classes helps to improve the class concept continuously, and to derive new high quality classes effectively.

On all three levels of the strategy (components, phases of learning scenarios and learning scenarios) opportunities for customization of the resulting service bundles and learning processes can be embraced. Within the learning scenarios, different standardized phases (subsystems) are combined according to the learning objectives for a specific target group or market segment. Thereby, several adjustments like the bandwidth and topical focus, the interaction pattern and the operating principles can be made according to the target group's needs. If prepared carefully, complete online settings and hybrid (blended learning) settings, individual and collaborative learning processes, interactive and self-guided learning processes can be derived from the same educational service platform. In addition to general options like the target group specific combination of standardized components and procedures, educational service platforms also allow a didactically grounded self-individualization of learning processes:

- In blended learning settings, learners are enabled to define their specific learning paths more easily than in traditional settings, for example with regard to the choice and order of sources of information they want to use (web-based training systems, case studies, literature, e-lectures, participation in face-to-face classes, etc.). Self-individualization not only leads to unique learning experiences for each student, but also to more efficient learning processes for a range of different learning styles.
- Constructivist elements as a second example of didactically grounded customization opportunities lead to individual learning processes and individual mixtures of covered content, even within replicated educational services. They enable active construction of solutions within complex, problem-based tasks and they merge as unique learning experiences, using the same technologies and starting with the same standardized task definition (Savery, 2009).

Conclusively, educational service platforms help to systematically analyze, modularize, and develop educational services. They allow more efficient service development and accomplishment and they help improve the quality and the effectiveness of educational services, since experiences and expertise can be embraced in the platforms and thus made reusable.

E-Learning-Patterns

The systematic and detailed consideration of patterns was introduced by Christopher Alexander in architectural theory in 1977. Alexander dealt with the construction of towns and buildings, and concluded that "Each pattern describes a problem which occurs over and over again in our environment, and then describes the core of the solution to that problem, in such a way that you can use this solution a million times over, without ever doing it the same way twice." (Alexander, Ishikawa and Silverstein, 1977). According to this understanding, patterns aim to capture the

invariant components of approved solutions to recurring problems, so that lessons learned can be considered, and typical mistakes can be avoided when dealing with a certain type of problem. Thereby patterns not only focus on the solution to the identified problems, but also on the relevant contexts and the problems themselves, since only in an adequate combination of these three elements the success of a solution can be replicated (Alexander, Ishikawa and Silverstein, 1977). A modularization and combination of small scale patterns within large scale patterns as part of a pattern language is thereby seen as a way to raise the degree of reutilization, since, as in a spoken language, the patterns can be arranged in an unlimited variety of combinations.

The patterns approach has been adapted in other industries and disciplines since then, among them the object-oriented software design as one of the most influenced ones (Rising, 2007; Gamma et al., 1995; Buschmann et al., 1996). One of the key challenges when dealing with patterns in any context is the right degree of abstraction, which needs to be high enough to allow a flexible adaptation of the patterns in different environments, but at the same time low enough to secure their significance (Rising, 2007). In his entertaining exaggeration, Joseph Bergin points out that a too high degree of abstraction reduces the patterns idea to absurdity, since for any problem in the world we would only need one pattern in the end, which is “Do the right thing” (Bergin, 2002; Rising, 2007). On the other hand, patterns without abstraction are useless outside the specific context in which they were written, so the abstraction discussion is of high relevance and needs to be considered by any pattern author. The development of patterns, called pattern mining, is dominated by inductive practice. Patterns are the result of observation, analysis, extraction and documentation, where both good and poor examples can be used as starting points.

Lately, some efforts have been made to adopt the patterns approach within the general educational context and in a specific e-learning context (Kohls, 2009; Finlay et al., 2009; Derntl, 2006; Niegemann and Domagk, 2005; Bergin, 2007). In their publications and projects, authors point out the value of patterns when trying to identify and share successful examples of solutions for typical educational challenges, such as the facilitation of learning processes through web 2.0 technologies (Finlay et al., 2009) or the design of appropriate procedures for e-assessments (Knowledge Media Research Center, 2010). An example of a pattern language is the online pattern collection by Joseph Bergin, in which the author describes fourteen interrelated patterns for Computer Science course development (Bergin, 2007). As in the original approach, an efficient and effective reuse of approved solutions is intended in order to avoid reinventing the wheel. For example in his “Early Bird” pattern, Bergin recommends to organize courses so that “[...] the most important topics are taught first. Teach the most important material, the “big ideas,” first (and often). When this seems impossible, teach the most important material as early as possible (Bergin, 2007)”.

As these efforts seem natural and very promising, serious problems need to be considered as possible reasons for the yet restrained success of e-learning patterns:

- Niegemann & Domagk (2005) point out that so far, approved e-learning patterns are less frequent than architectural and software design patterns: “In the domain of pedagogy things are by far not as clear: There are frequently used design patterns which actually do not function well: e.g. there are animations on the screen explained by written texts, there are written texts accompanied by the same text spoken, there are “stories” inserted in e-learning modules, following the assumption that interesting stories would motivate learning and make it more effective (Clark and Mayer, 2003). As replicated experiments showed, none of the “patterns” just mentioned are efficient. E-learning design patterns need a thorough proof of their quality; thus, they have to be systematically subjected to detailed evaluation. It seems clear that currently used design patterns in the pedagogical domain are not always suitable solutions for instructional design problems.” (Niegemann and Domagk, 2005, pp. 5)

- In contrast to architectural and software design patterns e-learning patterns tend to demand higher levels of abstraction. Hardly ever the same educational environment can be dealt with (different students, different teachers, different examination rules, different and continuously developing technical equipment, different previous knowledge on the teachers' as on the students' side, etc.). A modularization of large patterns (e.g. for e-assessment) into smaller and less abstract patterns (as discussed in (Kohls, 2009)) might help to isolate reusable elements, but it also leads to more complex and fine-grained pattern languages, which are more difficult to understand and adopt. The definition of appropriate delimitations and levels of abstraction for e-learning patterns thus appears to be of special difficulty.

In summary, patterns can be considered a promising approach to deal with technical and pedagogical challenges in the field of e-learning. Compared to architectural and software design patterns, they face special abstraction and quality assurance problems that need to be considered during pattern writing and adoption.

Discussion and Integration of the two Approaches

Table 2 summarizes the described characteristics of educational service platforms and e-learning patterns. We will now discuss overlap and differences between the two approaches with regard to their interoperability and possible mutual assistance.

Both educational service platforms and e-learning patterns build on the idea of modularization and recombination. In each of the two approaches standardized components, subsystems / "sub-patterns" are considered as an appropriate basis of flexible and adjustable combination processes that, in the pattern context, is described with the metaphor of a "pattern language." Also, both approaches aim at a utilization of learning curves, so that a basic conformity can be stated among them. Still the orientation of the two approaches is different: Educational service platforms aim at more efficient and effective service processes, improved new service developments and more customized service bundles. The educational service platform strategy is derived from a competitive way of thinking and thus focuses on one service supplier in the context of a specific value chain and its service offer and service production models. E-Learning patterns focus on the replication of solutions for certain problems within the whole e-learning community instead. Experiences and expertise that were developed by experts and which are embraced in their approved solutions for recurring problems are made available in pattern format to third parties. It is therefore reasonable that service platforms have been primarily addressed with regard to economical challenges of educational service providers so far, while e-learning patterns in particular have been setting forth educational and technical issues. Since educational services imply an interdisciplinary set of challenges, a holistic educational service model that takes into account the ideas of both approaches sounds promising.

The development process of service platforms and patterns differs as well. An efficient reuse of patterns by educators other than the pattern authors requires their generally comprehensible depiction, which is why patterns for pattern writing have been introduced (Meszaros and Doble, 2009). Since patterns need to be verified as approved solutions if not even best practices, their development process consumes a lot of energy, including "shepherding" as reviewing of patterns, the suggestion and presentation of pattern (parts) in conference papers and presentations, specific pattern workshops, etc. (Rising, 2007). In comparison, the more conceptually-held discussion of service platforms doesn't need such a standardized development process. It considers both an inductive and deductive platform development process as reasonable, while e-learning patterns de facto currently exclusively derive from observation of existing (mostly pattern author) solutions.

Table 2
Educational service platforms and e-learning patterns

	Educational Service Platforms	E-Learning Patterns
Definition	Sets of optional components and interfaces that form a reusable structure, which allows the efficient and effective creation and further development of differentiated educational service bundles repeatedly.	Description of “context-problem-solution-combinations “, which refer to problems that occur repeatedly in the e-learning environment and that allow the reutilization of approved invariant solution components.
Origin	Industrial product platforms and service platforms (Meyer and Lehnerd, 1997; Huang, Simpson and Pine II, 2005; Muffatto and Roveda, 2000; Meyer and DeTore, 1999; Stauss, 2006; Simpson, Maier and Mistree, 2001)	Patterns in architectural theory and software design (Alexander, Ishikawa and Silverstein, 1977; Gamma et al., 1995; Buschmann et al., 1996)
Focus	Service development and accomplishment of a single service supplier.	Diffusion of generic and successful solutions within the e-learning community.
Objectives	Cost and time savings in the process of new service development and a greater variety of more customized services.	Reusability of experiences and expertise, and avoiding reinventing the wheel.
Development	Interdisciplinary, collaborative teams Top-down (a priori) or Bottom-up (a posteriori)	“Shepherding” Pattern workshops Conference papers/presentations De facto inductive
Requirements	Service understanding for educational offers Modularization of service bundles and standardization of service components Long term service development plan	Integrated consideration of problem, context and solution Modularization and standardization of solutions Generally comprehensible documentation
Examples and discussion	ECC architecture (explained on p. 7) Learning scenario for international collaborative e-learning (explained on p.(8/ 9) (Gabriel, Gersch and Weber, 2007)	Early Bird pattern and pattern collection by J. Bergin (explained on p. 12; Bergin, 2007) Pattern on facilitation of learning through web 2.0 (explained on p. 12; Finlay et al., 2009) (Kohls, 2009; Niegemann and Domagk, 2005)

Because of their strategic orientation, service platforms appear to be the more appropriate approach when it comes to a systematic and long term overall educational service strategy. With its explicit focus on the continuous development, differentiation and customization of a supplier’s service offer, an educational service platform strategy helps to respond to the dynamic changes in the e-learning environment. E-learning patterns on the other hand represent an excellent vehicle for the documentation of approved and definite service components. The discussion of patterns

has led to a distinct identification of indispensable description elements, which ensure the reusability of the documented solutions for typical e-learning problems in typical educational contexts.

We therefore suggest that the most appropriate integration of both approaches is to use service platforms as a basis for long term supplier specific service strategy, while using patterns as a substantial basis for the service platforms.

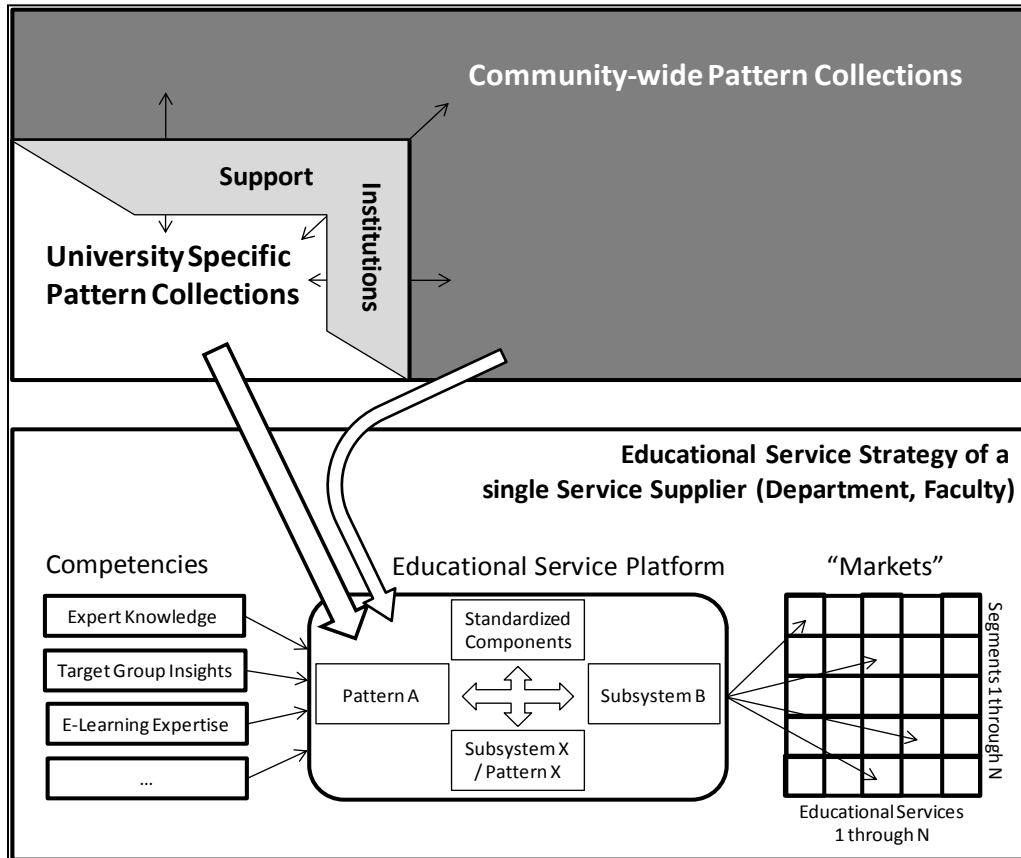


Figure 2: An integrated educational service approach
(based on Meyer and DeTore, 1999)

Figure 2 shows the resulting integrated educational service approach from the perspective of a single university educational service supplier as part of a typical decentralized institutional structure. The overall service platform strategy of the service supplier (e.g. a certain department or faculty) comprises e-learning patterns as a substantial basis of holistic, efficient and effective service development and accomplishment processes. Thereby institution specific pattern collections (on the university level) appear promising, since they can help to alleviate the above described abstraction problems. They can refer to a more homogeneous context concerning the technical equipment, target group characteristics, e-learning competencies of faculty, etc., so that less abstraction is necessary in the process of pattern documentation. The interface between the university-specific pattern collection and community wide pattern discussions and collections could be allocated to e-learning support institutions of the university. It would be the task of such institutions to manage the internal pattern collection and to coordinate the exchange with external collections. The pattern approach could thereby benefit from a similar differentiation of pattern types as suggested for service platforms by Stauss (2006): outcome patterns, process patterns, preparation patterns, external factor patterns. Such a differentiation would provide additional orientation to pattern authors and pattern users.

Summary and Future Research

Providing educational services – understood as service bundles for blended learning – is a complex undertaking, because partly conflicting pedagogical, technical and economical challenges and goals, and a dynamically changing environment need to be considered. Since attractive educational services have developed into important elements of competition strategies and also carry the hope of more effective learning processes, approaches like service platforms and e-learning patterns have gained growing attention lately. Both approaches build on modularization, standardization and (re-)combination, and aim at more effective and efficient service processes on the basis of systematic reutilization and learning curves.

The orientation of service platforms and e-learning patterns is different though. Service platforms focus on the development of a greater variety of customized service bundles, while e-learning patterns target a community wide exchange of successful solutions for recurring pedagogical and technical problems in the e-learning context. Because of the different backgrounds and orientation of the two approaches, opportunities for cross-platform learning and pollination could be identified. For example, pattern mining and documentation processes and the discussion of the abstraction problem could enrich the service platform literature. Additionally, integrating both approaches, as outlined at the end of the paper, appears promising. E-learning patterns as part of service platform strategy introduces a holistic way of thinking that takes into account pedagogical and technical issues, and focuses on an economically sustainable service strategy.

As for future research issues it is necessary to identify implementations of both approaches in the educational industry. These implementations and an exemplary integrated service strategy should be subject to critical and empirical scrutiny. Additionally we see a great potential in a deeper and broader analysis of the adaptability of the ideas, procedures, instruments and approaches that have evolved in both the platform and the pattern community. We hope this paper would serve as an inspiration to other researches to pick up and to contribute to the idea of a systematic educational service strategy.

Bibliography

- Ahmed, Hassan M. S. "Hybrid E-Learning Acceptance Model: Learner Perceptions." *Decision Sciences Journal of Innovative Education* 8, no. 2 (2010): 313–346.
- Alexander, Christopher, Ishikawa, Sara, and Silverstein, Murray. *A pattern language: Towns, buildings, construction*. New York: Oxford University Press, 1977.
- Bergin, Joseph. "Do The Right Thing." 2002. <http://csis.pace.edu/~bergin/patterns/dotherightthing.html>, accessed September 2009.
- Bergin, Joseph. "Fourteen Pedagogical Patterns." 2007. <http://csis.pace.edu/~bergin/PedPat1.3.html>, accessed September 2010.
- Buschmann, Frank, Meinier, Regine, Rohnert, Hans, Sommerlad, Peter, and Stal, Michael. *Pattern-oriented software architecture*. Chichester: Wiley, 1996.
- Clark, Ruth C., and Mayer, Richard E. *E-Learning and the science of instruction: Proven guidelines for consumers and designers of multimedia learning*. San Francisco, Calif.: Pfeiffer, 2003.
- Commission of the European Communities. "Delivering on the modernisation agenda for universities: education, research and innovation." 2006. <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2006:0208:FIN:EN:PDF>, accessed August 2009.
- Commission of the European Communities. "The Bologna Process - Towards the European Higher Education Area." 2009. http://ec.europa.eu/education/higher-education/doc1290_en.htm, accessed August 2009.

- Derntl, Michael. *Patterns for Person-Centered e-Learning*. Berlin: Aka, 2006, accessed August 2009.
- Fiedler, Marina, Welp, Isabell M., and Picot, Arnold. "Radical Change in Higher Education. The case of the Educational systems in German speaking Europe." 2006.
- Finlay, Janet; John Gray, Isobel Falconer, Jim Hensman, Yishay Mor, and Steven Warburton. "Planet: Pattern Language Network for Web 2.0 in Learning: Final Report." 2009.
- Gabriel, Roland, Gersch, Martin, and Weber, Peter. "Mass Customization as an adequate strategy for Education-Services." 2006. In *Proceedings of World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education 2006*, edited by T. C. Reeves, and S. F. Yamashita. Chesapeake: VA: AACE, 2006: pp. 1620-1627.
- Gabriel, Roland, Gersch, Martin, and Weber, Peter. "Service Platforms for E-Learning-supported Management Education." 2007. In *Proceedings of World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education 2008*, edited by T. Bastiaens, and S. Carliner. Chesapeake: VA: AACE, 2008: pp. 853-859.
- Gamma, Erich, Helm, Richard, Johnson, Ralph, and Vlissides, John. *Design patterns: Elements of reusable object-oriented software*. Reading Mass.: Addison-Wesley, 1995.
- Garrison, D. R., Vaughan, Norman D., and Garrison, D. Randy. *Blended learning in higher education: Framework, principles, and guidelines*. 1st ed. San Francisco Calif.: Jossey-Bass, 2008.
- Gill, Grandon T. "Quick and Dirty Multimedia." *Decision Sciences Journal of Innovative Education* 5, no. 1 (2007): 197-206.
- Gilmore, James H., and Pine II, B. Joseph. "The Four Faces of Mass Customization." *Harvard Business Review* 75, no. 1 (1997): 91-101.
- Graham, Charles R. "Blended Learning Systems: Definition, Current Trends, and Future Directions." In *The handbook of blended learning: Global perspectives, local designs*. 1st ed., edited by Curtis J. Bonk and Charles R. Graham. San Francisco, Calif.: Pfeiffer, 2006.
- Han, Yan. "On the Clouds: A New Way of Computing." *Information Technology & Libraries* 29, no. 2 (2010): 87-92.
- Huang, George Q., Simpson, Timothy W., and Pine II, B. Joseph. "The power of product platforms in mass customisation." *International Journal of Mass Customisation* 1, 1-13 (2005).
- Knowledge Media Research Center. "www.e-teaching.org." 2010. <http://www.e-teaching.org/specials/e-Learning-patterns>, accessed September 2010.
- Kohls, Christian. "E-Learning Patterns: Nutzen und Hürden des Entwurfsmuster-Ansatzes." 2009. In *E-Learning 2009*, edited by N. Apostolopoulos, H. Hoffmann, V. Mansmann, and A. Schwill. Münster: Waxmann, pp. 61-72.
- Marginson, Simon, and van der Wende, Marijk. *Globalisation and Higher Education: OECD Education Working Papers, No. 8*: OECD Publishing, 2007.
- Meszaros, Gerard, and Jim Doble. "A Pattern Language for Pattern Writing." 2009. <http://hillside.net/patterns/writing/patterns.htm#1.1>, accessed September 2009.
- Meyer, Marc H. "Product Platform Strategies." 1996. http://cims.ncsu.edu/downloads/Research/88_Product%20Platform%20Strategies.pdf, accessed September 2009.
- Meyer, Marc H., and DeTore, Arthur. "Product development for services." *Academy of Management Executive* 13, no. 3 (1999): 64-76.
- Meyer, Marc H., and Lehnerd, Alvin P. *The power of product platforms: Building value and cost leadership*. New York: Free Press, 1997.

- Muffatto, Moreno, and Roveda, Marco. "Developing product platforms: analysis of the development process." *Technovation* 20, no. 11 (2000): 617–630.
- Mykytyn, Kathleen, Pearson, Ann, Paul, Souren, and Mykytyn, Peter P. "The Use of Problem-Based Learning to Enhance MIS Education." *Decision Sciences Journal of Innovative Education* 6, no. 1 (2008): 89–113.
- Niegemann, Helmut M., and Domagk, Steffi. *E-LEN project Evaluation Report: Report of Work package 5*, 2005.
- Pine, Buddie Joseph. *Mass customization: The new frontier in business competition*. Boston, Mass.: Harvard Business School Press, 1993.
- Porter, Michael E. *Competitive strategy: Techniques for analyzing industries and competitors*. New York, NY: Free Press, 2004.
- Rising, Linda. "Understanding the Power of Abstraction in Patterns." *IEEE Software* 24, no. 4 (2007): 46–51.
- Rungtusanatham, Manus, Ellram, Lisa M., Siferd, Sue P., and Salik, Steven. "Toward a Typology of Business Education in the Internet Age." *Decision Sciences Journal of Innovative Education* 2, no. 2 (2004): 101–120.
- Salmon, Gilly. *Podcasting for learning in universities*. Maidenhead: Open University Press, 2008.
- Savery, John R. "Problem-Based Approach to Instruction." In *Building a common knowledge base*, edited by Charles M. Reigeluth and Alison A. Carr-Chellman. Mahwah, NJ: Erlbaum, 2009.
- Shapiro, Carl, and Varian, Hal R. *Information rules: A strategic guide to the network economy*. Boston, Mass.: Harvard Business School Press, 2008.
- Simpson, Timothy W., Maier, Jonathan R. A., and Mistree, Farrokh. "Product platform design: method and application." *Research in Engineering Design* 13, no. 1 (2001): 2–22.
- Stahl, Gerry, Koschmann, Timothy, and Suthers, Dan. "Computer-supported collaborative learning: An historical perspective." In *The Cambridge handbook of the learning sciences*, edited by R. Keith Sawyer. Cambridge, New York: Cambridge University Press, 2006.
- Stauss, Bernd. "Plattformstrategien im Service Engineering." In *Service engineering: Entwicklung und Gestaltung innovativer Dienstleistungen*. 2nd ed., edited by Hans-Jörg Bullinger and August-Wilhelm Scheer. Berlin: Springer, 2006.
- UNESCO. "Education - GATS and Education." 2004. http://portal.unesco.org/education/en/ev.php-URL_ID=21854&URL_DO=DO_TOPIC&URL_SECTION=201.html, accessed August 2009.
- Zentel, Peter, Bett, Katja, Meister, Dorothee, Rinn, Ulrike, and Wedekind, Joachim. "A change process at German University: Innovation through Information and Communication Technologies?" *EJEL - Electronic Journal of e-Learning* 2, no. 1 (2004).

About the Authors

Peter Weber

Lehrstuhl für Wirtschaftsinformatik, Ruhr-Universität Bochum, Germany

e-mail: peter.weber@rub.de

Ayman Abuhamdiah

Organizational Department, Scott College of Business, Indiana State University,

e-mail: ayman@indstate.edu

Editor's Note: Any widely used communication tool has the potential to facilitate learning. This paper shows how email can be used to improve reading skills in English as a Foreign language (EFL).

Improving Reading Skills through E-mail: The Case of Iranian EFL Students

Saeed Taki and Zahra Ramazani

Iran

Abstract

While many studies have examined the influence of e-mail on students' writing performance, few have looked into improving students' reading performance via e-mail. This study investigated the effect of using e-mail to improve reading in English as a foreign language. The participants of the study were three groups of high school students participating in EFL reading classes at one of Iran's pre-universities. One group was taught through the traditional face-to-face method; another group through using e-mail, and the third group through both traditional method and using e-mail. The participants were further divided into low, mid, and high proficiency levels according to the results of the OPT. After administering the treatment, the results of the tests were submitted to the ANOVA. The results indicated that e-mail had statistically significant effects on improving students' reading skill. Further, the Scheffe post hoc test was run to find more about the differences among proficiency groups. The results showed that the e-mail-only group performed almost the same as the other two groups at the high proficiency level; in other words, the high level group did not benefit much from using e-mail.

Keywords: constructivist learning, e-mail, reading skill, English as a foreign language, computer assisted language learning

Introduction

As a consequence of the rapid development of technologies, computers and information technology (IT) have been playing an important role in education, in general, and language education in particular. Online learning environments as well as social media Internet technologies provide many new forms of communication that allow teachers and students to exchange information and ideas comfortably. These new technologies consist of discussion boards, weblogs, wiki, synchronous chat environment, e-mail, and instant messaging, to name but a few (Connell, 2006; Farmer, 2004; Fichter, 2005; Richardson, 2008).

Among these new technologies, electronic mail has become a necessary tool in business and academic institutions. Personal use is increasing every day, and e-mail has become the predominant means of communication in the information society. Therefore, e-mail has been established as an indicator of collaboration and knowledge exchange (Whittaker & Sinder, 1996). E-mail technology has an important effect on English language learning because it boosts students' motivation (Mansor, 2007). Using e-mail also has an important role in second language learning, especially in the area of reading comprehension (Warschauer & Healey, 1998). Thus, using e-mail in the classroom is a good technique to familiarize students with both reading comprehension and computer literacy (Bacha, 2000).

Using e-mail for teaching English as a foreign language has been the subject of many studies; for example, Yu and Yu (2002) investigated the impact of incorporating e-mail into a classroom setting to analyze students' academic achievements and attitudes and observed that there was a statistically significant difference in their academic performances with the use of email. Warschauer (1995) conducted a study in which e-mail provided students with an excellent

opportunity for real and natural communication and provided opportunities for independent learning, which is essential for ESL writing and also allows students to communicate easily with hundreds of other students. Studies have found that students who use e-mail ask more questions and use more language functions (Belisle, 1996). But, as Couzenza (2009) observes, using e-mail effectively as a teaching and motivational strategy requires planning and careful use. However, few studies have tried to find the effectiveness of e-mail as related to reading.

In EFL situations normally the reading skill receives the most or all of the attention. In the mainstream education in Iran, the primary goal of teaching English as a foreign language is to prepare students for reading technical texts as they enter the university. However, most students at this level, despite studying English for years, still have problems with certain basic tasks such as finding the main idea of paragraphs, discovering the relationship between paragraphs in a text, providing a summary of a passage, or guessing the meaning of unfamiliar words.

Thus, poor reading skills as pointed out above are among the concerns of high school EFL teachers. Hence, this study was designed to investigate the effectiveness of using e-mail as a method for teaching reading skills. In other words, an attempt was made to probe into whether teaching reading skill via e-mail was more effective than the traditional face-to-face method.

Theoretical Background

Creating constructivist learning environment on the web

Lefoe (1998) observes that there is a widespread increase in the use of web-based instruction. In fact, there is a shift in approaches to pedagogy as well as shifts in instruction within a web-based environment. Behaviorist instructional strategies rely on learning a set of instructional sequences with predetermined outcomes (Lefoe, 1998). However, Jonassen (1994) holds that constructivists emphasize less the sequence of instruction and place more emphasis on the design of the learning environment. In fact, a web-based environment is more challenging.

Constructivism and CALL

Bonk and Cunningham (1998) point out that communication technologies can realize constructivist ideals of learning. Instead of transferring knowledge from one person to another we can use active, collaborative construction by using computer technology. Collaborative construction takes place in less controlled environments and such learning environments encourage thoughtful reflection (O'Malley, 1995). Collins and Berge (1996) observe that asynchronous communication changes the role of teachers and students; in fact, students become more active and problem-solvers. Furthermore, the collaborative nature of asynchronous technology allows students to share their experiences and exchange their information and attitudes (Chong, 1998). Weasenforth (2002) provides a broader view of constructivist learning by examining social, cognitive, affective, and individual principles of learning.

Characteristics of computer applications and critical reading

Rings (1994) explains that, as the use of computer technology in teaching and learning has expanded and as the importance of critical reading skills is reiterated, many commercial software products are advertised for promoting such skills. Rings (1994) asserts that applying the pedagogical approaches based on constructivism to the capabilities of computer technology reveals three underlying characteristics of computer applications that foster critical reading.

The first characteristic is a high level of interactivity, which means, in such a context, there is necessarily a two-way communication between the user and the computer (Klinger & Connet, 1993). Therefore, the learner is involved in the instructional process. From a constructivist perspective, interactivity consists of more than students' punching response keys; it consists of generating questions, mapping concepts, or summarizing for which the software provides the

prompts. Interactivity also extends beyond one student using one computer to many students using many computers. A high level of interactivity encourages students to become more actively involved in what they are reading (Kubota, 1991).

Goodrum and Knuth (1991) introduced the second characteristic of such software that helps promote critical reading. It encourages the use of those strategies as used by efficient readers. They refer to the electronic journal which not only provides a forum for students to discuss reading, but also helps students become more aware of the strategies they use by providing prompts pertaining to strategy use. The strategy of accessing one's prior knowledge about a topic of a reading can be fostered through prompts in the software that asks students to write what they already know about the topic of a reading. Such prompts may also ask students to analyze the sources of their prior knowledge. Furthermore, where there are gaps in prior knowledge, various forms of technology, such as interactive video, maybe used to fill some of those gaps.

Rings (1994) explains that the third characteristic of software that promotes critical reading is approximating a "real" context. One aspect of a real context is that the readings are available in print. Computer technology provides higher resolution so that larger chunks of text may be viewed at once. Another aspect of real context is that it involves interactions among persons; in other words, it provides a social environment, since the process of constructing meaning is often negotiated through collaboration with others (Goodrum & Knuth, 1991).

E-mail technology has then an impact on English language learning, because it boosts students' motivation (Mansor, 2007). Furthermore, as technology becomes center-stage in our lives, there are compelling reasons for incorporating technologies into the classroom. Using e-mail in the classroom is a good step to familiarize students with computer literacy (Bacha, 2000). However, as Couzenza (2009) observes, "using e-mail effectively as a teaching and motivational strategy requires planning and careful use" (p. 77).

The present study sought to answer two main questions: (1) is using e-mail more effective than the traditional way (face-to-face communication) in teaching the reading skill to Iranian EFL high school students? (2) do the students' English proficiency levels have any effect on their reading improvement through using e-mail?

Method

Participants

The students (N=150) between the age of 17 and 18 in three classes of a high school in Iran participated in this study. The Oxford Placement test (OPT) was administered to each class and the students were identified as low level, mid-level, and high-level. One class was taught through the traditional face-to-face method, another class through e-mail only, and the third class through both traditional method and e-mail.

Procedure

A reading comprehension test was administered to determine the students' reading ability. This pretest contained 40 reading comprehension questions, which were based on the students' coursebook. A parallel test was used three months later to check their progress.

As for their teaching, the same lessons of their English book were presented to them in three different way. One class received instruction through the traditional method, i.e. the teacher explained everything to the class and reading assignments in the form of answering questions or writing a summery were done at home by the students and later checked by the teacher in the class. The same procedure was repeated for each lesson to the end of the term which lasted three months.

For the second group, instructions were sent to the students through e-mail. Every lesson was taught by the use of an audio file. The audio file included the teacher's instruction during teaching, which was then sent to the students through e-mail. In addition to the recorded voice, the assignments including reading comprehension questions and the answer sheets were attached to the e-mail. In the body text, the students were asked to listen to the recorded voice, read the assigned material and then individually write down two or three paragraphs as summaries and send back the answer sheet through e-mail. All the interactions with the instructor were done electronically. The instructor corrected the answer sheets, scored them and sent them back through e-mail to each student. The same procedure was followed for other lessons.

For the third class both methods of teaching were used. First, they received instruction through e-mail as described above. Then, further explanation was presented to the students in the class and their assignments were checked and reviewed in the class as well.

Results

The Results of the Pretests

At the beginning, in order to make sure that the selected groups at each language proficiency level were homogeneous in terms of their reading ability, a pretest was run. Table 1 shows the descriptive statistics for the pretest.

Table 1
The Descriptive Statistics for the Pretest
for All Groups

Group	Group	No.	Mean	SD	Min	Max
Low	1	18	26.61	13.469	7	54
	2	17	24.35	13.057	7	50
	3	13	19.00	9.345	7	40
Intermediate	1	22	33.09	13.694	10	67
	2	20	31.15	16.191	7	54
	3	9	22.33	11.790	10	47
High	1	22	38.27	14.399	10	60
	2	20	37.30	14.360	17	70
	3	8	27.13	12.415	12	43

1 = group with email and class explanation
2 = group with class explanation only
3 = group with email only

As Table 1 shows, there are some small differences among the means of groups at different proficiency levels. To find out whether these differences were significant or not, a one-way ANOVA was run. Table 2 depicts the results of the ANOVA.

According to Table 2, the value of F-observed in none of the three proficiency groups is high enough to show a significant difference among the groups. Therefore, it can be claimed that the three groups at each proficiency level were homogeneous.

Table 2
The Results of the ANOVA for the Pretest
for All Groups

Group	Source	SS	df	MS	F	Sig.
Low	Between Groups	446.840	2	223.420	1.466	.242
	Within Groups	6860.160	45	152.448		
	Total	7307.000	47			
Intermediate	Between Groups	756.142	2	378.071	1.809	.175
	Within Groups	10030.368	48	208.966		
	Total	10786.510	50			
High	Between Groups	777.061	2	388.531	1.953	.153
	Within Groups	9351.439	47	198.967		
	Total	10128.500	49			

Results of the Post-tests

After administering the treatment, the three groups under comparison were given the posttest to find out about the results of the treatment. What follows are the results of the posttest.

The High-Proficiency Group

The result of the posttest for the high-proficiency group was analyzed for the presence of any difference among the three subgroups. The mean scores were observed to be 86.3, 89.13, and 92.96 for the traditional group, the e-mail-only group, and combined method group, respectively. In order to see whether these differences were statistically significant, a one-way ANOVA was run. Table 3 presents the results of the ANOVA.

Table 3
The Results of the ANOVA for the Posttest
for the High Group

Source	SS	df	MS	F	Sig.
Between Groups	466.850	2	233.425	3.314	.045
Within Groups	3310.030	47	70.426		
Total	3776.880	49			

According to the above table, the value of F-observed ($F_{\text{observed}} = 3.314$) is significant at the significance level of 0.045 ($p < 0.045$), which denotes that the differences among the three subgroups are significant. To find out about the exact place(s) of difference(s) the Scheffe post hoc test was run. Table 4 depicts the results.

Table 4
The Results of the Scheffe Post hoc Test
for the High Group

Groups		Mean Difference	Sig.
1	2	6.65455*	.046
	3	3.82955	.547
2	1	-6.65455*	.046
	3	-2.82500	.725
3	1	-3.82955	.547
	2	2.82500	.725

1 = group with email and class explanation
 2 = group with class explanation only
 3 = group with email only

By looking at Table 4, one can easily see that the difference between the group with both e-mail and class explanation and the group with only class explanation is significant, but the other differences are statistically not significant. In other words, the group which received the e-mail treatment performed almost the same as the other two groups.

The Intermediate-Proficiency Group

The result of the posttest for the intermediate-proficiency group was analyzed to see if there were any differences among the three subgroups. The mean scores were observed to be 72.6, 82, and 92.68 for the traditional group, the email-only group, and combined method group, respectively. In order to find out whether these differences were statistically significant or not, another one-way ANOVA was run. Table 5 presents the results of this ANOVA.

Table 5
The Results of the ANOVA for the Posttest
for the Intermediate Group

Source	SS	df	MS	F	Sig.
Between Groups	4234.114	2	2117.057	25.156	.000
Within Groups	4039.573	48	84.158		
Total	8273.686	50			

It can be understood from the above table that the value of F-observed (F-observed = 25.156) is significant at the significance level of .000 ($p < 0.0$), which confirms that the differences among the three subgroups are significant. In order to find out about the exact place(s) of difference(s), another Scheffe post hoc test was employed. Table 6 depicts the results.

By studying Table 6, it can be seen that the differences between all subgroups are significant. In other words, at the intermediate-proficiency level any change in the treatment has a positive effect on the students; therefore, the groups working with email outperformed the group which received the traditional way of teaching, and the group which benefitted from both kinds of teaching performed better than the group which received email treatment only.

Table 6
The Results of the Scheffe Post hoc Test
for the Intermediate Group

Groups		Mean Difference	Sig.
1	2	20.08182*	.000
	3	10.68182*	.019
2	1	-20.08182*	.000
	3	-9.40000*	.047
3	1	-10.68182*	.019
	2	9.40000*	.047

* The mean difference is significant at the 0.05 level ($p < 0.05$).

1 = group with email and class explanation
 2 = group with class explanation only
 3 = group with email only

The Low-Proficiency Group

The posttest results for the low-proficiency group were studied to understand if there were any differences among the three subgroups. The mean scores were observed to be 67.41, 78.15, and 87.5 for the traditional group, the email-only group, and combined method group, respectively. To find out whether these differences were statistically significant or not, still another one-way ANOVA was calculated. Table 7 presents the results of this ANOVA.

Table 7
The Results of the ANOVA for the Posttest
for the Low Group

Source	SS	df	MS	F	Sig.
Between Groups	3529.669	2	1764.835	19.044	.000
Within Groups	4170.310	45	92.674		
Total	7699.979	47			

It can be seen in Table 7 that the value of F-observed ($F_{\text{observed}} = 19.044$) is significant at the significance level of .000 ($p < 0.0$), which means that the differences among the three subgroups are significant. In order to find out about the exact place(s) of difference(s), the Scheffe post hoc test was employed. Table 8 depicts the result.

Table 8
The Results of the Scheffe Post hoc Test
for the Low Group

Groups		Mean Difference	Sig.
1	2	20.08824*	.000
	3	9.34615*	.037
2	1	-20.08824*	.000
	3	-10.74208*	.015
3	1	-9.34615*	.037
	2	10.74208*	.015

1 = group with email and class explanation
 2 = group with class explanation only
 3 = group with email only

Once again by studying Table 8, it can be seen that the differences between all subgroups are significant. In other words, here again any change in the treatment had a positive effect on the students; therefore, the groups working with e-mail outperformed the group which received the traditional way of teaching, and the group which benefitted from both kinds of teaching performed better than the group which received e-mail treatment only.

Discussion

As was described above, a comparison was made between the means of the three groups at different proficiency levels with three types of treatments: traditional method, teaching via e-mail, and both methods combined. As observed, changes in the treatment have a positive effect on the students' performance, that is why, the groups working with e-mail outperformed the group which received the traditional way of teaching, and the group which benefitted from both kinds of teaching performed better than the group which received the e-mail treatment only. This can be justified with reference to the students' attitude towards using email to improve their reading skill. Most of them believe that it is quite useful to exchange information via e-mail (Warschauer, 1996). Moreover, Yu and Yu (2002) observe that through fostering a sense of online communication that "facilitates collaboration and personal discussion, social construction of knowledge among audiences at different locations at different times is realized in the electronic world" (p. 122). The results of the study are also in line with Shang's (2005) speculation that "the effect of electronic discussion may directly affect students' reading enhancement" (p. 208).

As for the second question of this research, it can be maintained that the proficiency level has an effect on students' learning through e-mail. In fact, e-mail enhances intermediate and low proficiency level students' reading performance, but it does not have any statistically significant effect on high proficiency level students.

Conclusion

These findings lead us to conclude that e-mail plays a very important role in students' reading development. E-mail communication provides students with additional opportunities to communicate in English. Furthermore, there are some differences between high, intermediate and low proficiency level students regarding the benefits of using e-mail. While the students at low and intermediate proficiency levels benefit enough from using email, those at the high proficiency level may not benefit much since students who are at a high proficiency level are automatically more efficient and active all the time; therefore, high-proficiency students who receive e-mail treatment perform almost the same as those who receive class explanation only.

Therefore, it can be claimed, based on the results of the present study, that using e-mail can have a positive effect on students' second language literacy growth and serve as a catalyst for reading comprehension. Reading skills during e-mail exchanges can improve because the opportunity to communicate with one another via e-mail can provide participants with a sense of accomplishment and an awareness that their knowledge and experiences are worthy of consideration and acceptance.

References

- Bacha, N. N. (2000). Developing learners' academic writing skills in higher education: A study for educational reform. *International Journal of Arabic-English Studies*, 2(2), 140-156.
- Belisle, R. (1996). E-mail activities in the ESL writing class. *The Internet TESL Journal*, 2(12), 96-104. Retrieved December, 1996, from <http://iteslj.org/Articles/Belisle-Email.html>.
- Bonk, C., & Cunningham, D. (1998). Searching for learner-centered, constructivist, and sociocultural components of collaborative educational learning tools. In C. Bonk & K. King (Eds.), *Electronic collaborators* (pp. 25-50). Mahwah, NJ: Lawrence Erlbaum.
- Chong, S-M. (1998). Models of asynchronous computer conferencing for collaborative learning in large college classes. In C. J. Bonk & K. S. King (Eds.), *Electronic collaborators* (pp. 157-182). Mahwah, NJ: Lawrence Erlbaum.
- Collins, M., & Berge, Z. (1996). Facilitating interaction in computer mediated online courses. Retrieved June 15, 2000, from <http://www.emoderators.com/moderators/flcc.html>.
- Connell, S. L. (2006). Comparing blogs, wikis, and discussion boards as collaborative learning tools. In Wiki, Hyderabad: India: ICAFI (the Institute of Financial Analysts of India) University Press.
- Couzenza, T. (2009). Using electronic mail to motivate students. *Teaching and Learning Nursing*, 4, 76-78.
- Farmer, J. (2004). Communication dynamics: Discussion boards, weblogs and the development of communities of inquiry in online learning environments. In R. Atkinson, C. McBeath, D. Jonas-Dwyer & R. Phillips (Eds.), *Beyond the comfort zone* (pp. 274-283). Proceedings of the 21st ASCILITE conference, December 5-8. Perth. <http://www.ascilite.org.au/conferences/perth04/procs/farmer.html>.
- Fichter, D. (2005). The many forms of e-collaboration: Blogs, wikis, portals, groupware, discussion boards, and instant messaging. *Online*, 29(4), 48-50.
- Goodrum, D. A., & Knuth, R. A. (1991). Supporting learning with process tools: Theory and design issues. (ERIC Document Reproduction Service No. ED 334 984).
- Jonassen, D. H. (1994). Thinking Technology: Toward a constructivist design model. *Educational Technology*, 34(3), 34-37.
- Klinger, T. H., & Connet, M. R. (1993). Designing distance learning courses for critical thinking. *T.H.E. Journal*, 21(2), 87-90.
- Kubota, K. (1991). Applying a collaborative learning model to a course development project. Paper presented at the Annual Convention of the Association for Educational Communications and Technology, Orlando, FL, February 13-17, 1991. (ERIC Document Reproduction Service No. ED 331 490).
- Lefoe, G. (1998). Creating constructivist learning environments on the web: The challenge in higher education. Centre for Educational Development and Interactive Resources, (pp. 453-464). University of Wollongong, Australia.
- Mansor, N. (2007). Collaborative learning via email discussion: strategies for ESL writing classroom. *The Internet TESL Journal*, Vol. XIII, No. 3, March 2007 <http://iteslj.org/>
- O'Malley, C. (1995). Designing computer support for collaborative learning. In C. O'Malley (Ed.), *Computer supported collaborative learning* (pp. 283-297). New York: Springer-Verlag.

- Richardson, W. (2008). Blogs, Wikis, podcasts, and other powerful Web tools for classrooms (2nd ed.). Berlin: Corwin Press
- Rings, S. (1994, Feb). The role of computer technology in teaching critical reading. MCLI: Maricopa Center for Learning and Instruction. Maricopa County Community College District, Arizona
- Shang, H. (2005). Email dialogue journaling: attitudes and impact on L2 reading performance. *Educational studies*, 31(2), 197-212
- Warschauer, M. (1995). E-mail for English teaching. Alexandria, VA : TESOL Publications.
- Warschauer, M. (1996). Comparing face-to-face and electronic discussion in the second language classroom, *CALICO Journal*, 13(2), 7–26.
- Warschauer, M., & Healey, M. (1998) Computers and language learning: an overview, *Language Teaching*, 31, 57-71.
- Weasenforth, D. (2002, Sep). Realizing constructivist objectives through collaborative technologies: Threaded discussions. *Language learning technology*, (pp. 58-86). The George Washington University.
- Whittaker, S., Sidner, C. (1996). Email overload: Exploring personal information management of email. Lotus Development Corporation One Rogers St. Cambridge MA: 02142, USA
- Yu, F. Y., & Yu, H. J. J. (2002) Incorporating email into the learning process: its impact on student academic achievement and attitudes. *Computers and Education*, 38, 117–126.

About the Authors

Saeed Taki is an assistant professor in the English Department at Islamic Azad University, Shahreza Branch, IRAN. His main areas of interest include language pedagogy, cultural studies and (critical) discourse analysis.

E-mail: Taki@iaush.ac.ir

Zahra Ramazani is at the Islamic Azad University, Shahreza Branch, IRAN.

E-mail: zahraramazani@gmail.com

Editor's Note: Adult learners are usually more dedicated and more able to manage their own learning based on opportunities presented to them. Distance learning provides access to large numbers of students who could not otherwise participate in the higher-education experience. This study shows how access, learning, and retention can be enhanced through a well-designed distance learning program.

Access, Success Rate and Learner Characteristics of the Holiday Diploma in Teaching Program (*Sekolah Agama Bantuan Kerajaan*) Student Teachers in Malaysia

Helen Khoo Chooi Sim

Malaysia

Abstract

This paper discusses the access, success rate and learner characteristics of the Holiday Diploma in Teaching Program (*Sekolah Agama Bantuan Kerajaan*) student teachers at Institut Pendidikan Guru Kampus Pulau Pinang, Malaysia. The findings are based on the responses of 24 student teachers enrolled in this program. Quantitative and qualitative methods were employed in this study. Results from this study denoted that the access to teacher education is given to all teachers from religious school across the country and the success rate is 100%. At the end of the program, 66.7% of the student teachers graduated with excellent grades. This success rate is attributed to the constant and consistent hours spent by the respondents in their learning i.e. between 1 to 5 hours per day. All of the respondents are proponents of lifelong learning and perceived that learning is important to them and also professed that they personally wanted to learn. The reasons for them to pursue their education is to increase their self-confidence, to have higher qualification and to develop new skills. Respondents of this study opined that they have achieved the program objectives and the contents of the program is relevant to them as teachers. They also indicated that the instructional design for the program namely self-instructional study materials (course modules) and face-to-face interaction with lecturers assisted them in their learning. Respondents of this study are more confident as teachers after attending this program. This is a good indicator on the success of this program to produce qualified teachers to uplift the educational standards in Malaysia.

Keywords: Adult learners, lifelong learners, distance education, instructional design, face-to-face interaction, self-instructional study materials, success rate, Malaysia

Introduction

In the globalization era, education occupies the center stage in issues of world concern in educating of the young to take their rightful places as leaders and shapers of the future. In this respect, teachers have a crucial role to play to prepare the young to meet the challenges of the 21st century. In Malaysia, educational efforts are fully accord with teacher education practices in attempting to provide the highest quality preparation and training for pre-service teachers and in-service teachers to enable them to realize the aims of achieving developed-nation status by the year 2020.

The vision statement of teacher education in Malaysia focuses on the need to develop a system of teacher education that is comparable with world standards, and one that endeavors to produce teachers who are dynamic, constantly innovating and striving for excellence; and diligently working towards fulfilling the aspirations of the Nation. Teachers play important role to produce future citizens who are holistically developed in terms of their intellectual, spiritual, emotional and physical growth, who have a firm belief in God, who possess high moral standards and who are capable of effectively contributing to the family, the society and the Nation. It is imperative

that teachers as adult learners to be equipped with the knowledge, skills and attitudes to face the challenges of globalization. This calls for them to be lifelong learners to keep abreast with the developments in the teaching profession.

Holiday Diploma in Teaching Program (Kursus Diploma Perguruan Malaysia – Sekolah Agama Bantuan Kerajaan (SABK))

Education in Malaysia is designed to produce citizens who are knowledgeable and competent, who possess high moral standards, and who are responsible and capable of achieving a high level of personal well-being as well as contributing to the betterment of society and the nation at large (Ministry of Education, Malaysia, 1987). In order to realize its aims, more qualified and competent teachers are needed to produce the future citizens as aspired. This is in tandem with the second strategic thrust in National Education Blueprint (PIPP) i.e. Development of human capital aimed at uplifting the educational standards in Malaysia. Thus, it is imperative to raise the quality and status of the teachers and teaching profession. The Malaysian government aimed to produce teachers who are competent and qualified to teach in all schools in the country. The Teacher Education Programs planned by the Ministry of Education are in keeping with national aims of achieving developed-nation status by the year 2020.

The Malaysian Diploma in Teaching (MDT) for the SABK program is a three and a half year program for the training of teachers for non-trained primary and secondary school teachers from government-aided religious schools in Malaysia. The MDT is awarded on successful completion of five levels of interaction and practicum, which is the duration of the whole program. In each level the student teachers are required to pass the coursework as well as the examination, which are mandatory in order to proceed to the next level.

Besides coursework assessment and formal written examinations, practical examinations are also conducted for subjects such as Science and Music, oral examinations for languages, and assessment of teaching practice or practicum. Student teachers undertake practical experience in teaching, which is the Practicum, twice during their course namely Practicum Phase One and Practicum Phase II. Trainees were also provided with self-instructional study materials (modules) and they have to attend face-to-face interactions at Teacher Education Institutions registered during the school holidays.

Characteristics of Student Teachers as Lifelong Learners

The 21st century has been characterized by globalization and technological advances. These trends are likely to have long-term consequences on the Malaysian society. Nowadays, it is imperative for teachers to be lifelong learners because there are constant development and changes in the educational arena. Despite the primary, secondary and tertiary education that one would undertake, the knowledge and skills acquired during that period are usually not sufficient for the rapid development in information and technology arena in this globalized era.

In this era, lifelong learning has become a part of teachers' life and professionalism. This is to keep abreast with the new development in the globalized world. For the education organization to survive and progress, learning in the organization has got to be greater or at least equal to the degree of change (Garratt, 1990). Undeniably, teachers constitute the most important component of the education organization and in the teaching and learning process. This role deems more important when teachers become agents of change (Vaughn, Wang & Dytman, 1996). Thus, teachers who are the important personal and leaders of education organization should be lifelong learners. It is imperative that educators are lifelong learners.

Lifelong learning is also often used as a synonym with adult education, permanent education and or continuing education. It refers to education throughout one's lifetime which encompasses

formal, non-formal and informal education (Theo, et. al., 2005). Lifelong learning has opened up new opportunities for learners especially adult learners to further their education. Therefore, adult learners nowadays seek to further their learning in order to enhance their knowledge, skills, competency and professional development. Adult learners fall into the category of nontraditional students, whom the National Center for Education Statistics (2010) defines as meeting at least one of the following seven criteria:

Delays enrollment (does not enter postsecondary education in the same calendar year that he or she finished high school).

1. Attends part time for at least part of the academic year.
2. Works full time (35 hours or more per week) while enrolled.
3. Is considered financially independent for purposes of determining eligibility for financial aid.
4. Has dependents other than a spouse (usually children, but sometimes others).
5. Is a single parent (either not married or married but separated and has dependents).
6. Does not have a high school diploma (completed high school with a GED or other high school completion certificate or did not finish high school).

According to Cross (1981), children and adult learners are different from two aspects namely, personal characteristics and situational characteristics. Personal characteristics include physical, psychological, social, and cultural aspects of the learner. These are all areas of growth as an individual develops from child to adult. Situational characteristics include part-time versus full-time participation in schooling, and voluntary versus compulsory participation. Thus, adult educators should utilize the experience of the participants (adult learners), to adapt to the physiological aging limitations of participants, to challenge learners in the area of personal development, and to provide high levels of choice for the learner.

The major differences between adult learners when compared to school-age children are in the degree of motivation, the amount of previous experience, the level of engagement in the learning process, and how the learning is applied. Adult learners have other social roles than that of a traditional student and that educating them is fundamentally different from educating children and adolescent (Knowles, 1990). This calls for adult educators to assess the level of these traits and the readiness to learn should be included each time a teaching experience is being planned.

Adult learners have a variety of needs especially for an adult (Knowles, Holton & Swanson, 1997). As adults are experience individuals, they bring to the learning experience preconceived thoughts and feelings. All adults come to courses with a variety and range of experiences, both in terms of their working life and educational backgrounds. This impacts on how and why they participate in learning (Wynne, 2011). Adult learners tend to be self-directing, to use their experience in learning, to identify their own readiness to learn, and organize their learning around life problem increase from infancy to preadolescence, and then increase rapidly during adolescence.

In order to assist adults in their learning, adult educators need to be able to identify the learner characteristics. Adult educators should use multiple modes of presentation, such as visual, verbal, and auditory to cater to the different learning styles of their learners. Adult learning programs should place a high priority on developing the students' confidence, comfort, and participation in the learning process.

There are many reasons that encouraged adults to be lifelong learners. The reasons most adults enter any learning experience is to create change. This could encompass a change in (a) their

skills, (b) behavior, (c) knowledge level, or (d) even their attitudes about things (Adult Education Centre, 2005). Thus, educators who are aware of the needs of their adult learners are able to provide them with the guidance needed.

According to Rogers (1969), the adult-learning process is facilitated when:

- The learner participates completely in the learning process and has control over its nature and direction.
- It is primarily based upon direct confrontation with practical, social, or personal problems.
- Self-evaluation is the principal method of assessing the progress or success.

Thus, it is important to engage the adult learner and facilitate the transfer of knowledge and skills needed. This calls for detailed planning and implementation of the adult learning strategies to achieve the learning objectives identified.

Adult learners usually approach learning differently than younger learners. They are more self-guided in their learning. In addition, they bring more, and expect to bring more, to a learning situation because of their wider experience. In addition, they require learning "to make sense" so that they can perform the learning activity successfully. This calls for studies to be conducted regarding the characteristics of lifelong or adult learners so that teaching and learning can be successfully imparted to adult learners.

Objectives of Study

The Holiday Diploma in Teaching Program (*Sekolah Agama Bantuan Kerajaan*) for non-trained primary school teachers from government-aided religious schools in Malaysia started at Institut Pendidikan Guru Kampus Pulau Pinang (IPGKPP) in December 2006. 24 teachers from various religious schools throughout Malaysia enrolled in this program for the duration of 3½ years with 18 of them majoring in Mathematics and 6 students majoring in Science (First Cohort – SABK1). This program employed the Holiday Course Modus Operandi (*Kursus Dalam Cuti*). The instructional design for this program uses modules, face-to-face interaction, assignment and examination. Face-to-face interactions were conducted during the semester holidays at Teacher Education Institutions throughout Malaysia.

The objectives of this study are to elicit information for the following:

- Access and relevance of the program to learner needs and expectations;
- Success rates, academic achievement and the study habits of enrolled student teachers
- Lifelong learners characteristics of the respondents

Significance of the Study

The participation in learning activities by adult learners has increased in recent years. This trend will continue as the government is encouraging the population especially teachers to seek better education in all aspects. Studies on adult learners are important to enhance the quality of adult or lifelong education. This study is important for improving the program conducted for adult learners at teacher institutions. Results of the study will add to the body of knowledge surrounding the Holiday Diploma in Teaching Program. Results of the investigation can be used to enhance and augment the planning and implementation of the program conducted at various teacher education institutions across the country. The researcher hopes to identify the adult learners' characteristics that exist as well to make recommendations, modifications and changes so as to improve the implementation of the program. The findings gathered will be used to make

recommendations about how best to plan and execute the holiday teaching diploma program so that the objectives of the program is achieved and that optimal learning takes place. This will result in improvement in adult learners' learning and achievement, and thus ensure that quality teachers are produced to teach in religious schools throughout the country.

Methodology

The following methods were adopted to carry out this study:

- *Records, document, and database analysis*: Institutional data, documents, and records were used to source information on student teachers' enrolment and their academic performance.
- *Surveys*: Questionnaire was used to probe the variables and trends emerging from aspects of academic achievement and lifelong learning characteristics such as the respondents' study habits, reasons for pursuing their studies and obstacles that prevented them from becoming lifelong learners. Feedback was obtained through questionnaires (structured, semi-structured, and open-ended). Participants were surveyed using an instrument designed to measure, using Likert scales from 0 to 4 with "strongly agree" designated as a 4, "agree" as a 3, "disagree" as a 2, "strongly disagree" as 1.

A pilot test was conducted prior to the actual study to test the reliability of the questionnaire. The overall Cronbach's Alpha coefficient of 0.76 was recorded. The coefficient indicated that the questionnaire was reliable.

The sample for this study was SABK student teachers of IPGKPP enrolled in November 2006. The questionnaires were distributed to all 24 student teachers in June 2010 that is during the last face-to-face interaction of the program (before their final examination). The researcher used a relatively purposive sample due to the nature of the study. The questionnaires were distributed in person by the researcher and the completed questionnaires were collected at a specific time agreed to by both parties. Data analysis was conducted using the Statistical Package for Social Sciences version 16.0. Data were collected and analyzed with quantitative and qualitative methods. Results generated included percentages and means and provided information about the central tendency of the identified groups.

Results and Discussion

Both quantitative and qualitative methodologies were employed to evaluate the Holiday Course Teaching Diploma Program (*Sekolah Agama Bantuan Kerajaan*). Descriptive and inferential statistics were used to report the results of the study.

a. Student teachers' Profile

As depicted in Table 1, a significant majority of 19 student teachers (79.2%) were females and only 5 student teachers (20.8%) were males. The learner composition of this program reflects the dominance of the female gender in program. It also signified the dominance of the female gender in the Malaysian teaching profession.

The basic characteristics of 24 respondents revealed that all of them are over 26 years of age. This indicates that all the respondents are adult learners. 75% of the respondents are over the age of 31 years. In addition, a large majority of them i.e. 79.2% are married with families. This indicated that they are matured learners and hold various responsibilities of an adult and family person. As adult learners, they are responsible for their own learning.

The demographic data also revealed that the respondents are experienced teachers. 20 respondents (83.4%) have more than 6 years of teaching experiences with only 4 student teachers (16.7%) who have less than 5 years of teaching experiences. In terms of academic qualification,

25% of the respondents possessed the Malaysian Certificate of Education qualification; 16.7% with the Higher School Certificate qualification and more than half of the respondents are Diploma holders (58.3%).

Table 1
Demographic Information of Respondents

		Frequency	Percentage
Gender:	Male	5	20.8
	Female	19	79.2
Age:	26 – 30 years	6	25.0
	31 – 35 years	9	37.5
	36 – 40 years	3	12.5
	41 – 45 years	5	20.8
	More than 46 years	1	4.2
Marital Status	Single	5	20.8
	Married	19	79.2
Years of teaching experience in school:	Less than 5 years	4	16.7
	6 – 10 years	12	50.0
	11 – 15 years	7	29.2
	16 – 20 years	1	4.2
Academic/ Professional Qualification	Malaysia Certificate of Education	6	25.0
	Higher School Certificate	4	16.7
	Diploma	14	58.3

All the respondents lived far away from the Institution. The nearest distance is 100km and the furthest is 510 km from the Institution. The mean distance from the respondents' home to the learning institution is 297.14km. This indicated that they have to spend considerable time and expenses on travelling to the institution during the semester holidays for the face-to-face interaction at the Institution.

b. Access and relevance of program to student teachers' expectations and needs

Results from this study indicated that the access to teacher education is given to all teachers from religious school across the country. As depicted in Table 2, respondents from this study opined that they have achieved the program objectives (mean=3.38) and the content of the program is relevant to them as teachers (mean=3.50). They also indicated that the instructional design for the program namely, self-instructional study materials (course modules), face-to-face interaction with lecturers, assignments and examination are suitable. Thus, it can be said that the instructional design of the program is suitable facilitating and in assisting students' learning.

Respondents of this study opined that they are more confident as teachers after attending this program and it recorded a high means of 3.71. This is a good indicator on the success of this program. The respondents are satisfied as learners of this program (mean=3.39) and they are confident as a lifelong learner (mean=3.46). In addition, this program has also instill positive

attitude in the respondents as lifelong learners because they opined that they will continue to study to obtain a first degree in education (mean=3.42). They also opined that they will recommend this program to other friends (mean=3.50).

Table 2
Program relevance to learner expectations and needs

No.	Item	Mean	Std Deviation
1.	I have achieved the program objectives	3.38	0.495
2.	The program content is relevant to me as a teacher	3.50	0.511
3.	Instructional design for the program is suitable	3.38	0.647
4.	I am more confident as a teacher after attending this program	3.71	0.464
5.	I will continue to be a lifelong learner after this program	3.38	0.576
6.	I am satisfied with all aspects of this program	3.17	0.702
7.	With the experience gained from this program, I am confident as a lifelong learner	3.46	0.509
8.	I will continue to study to obtain a degree in education	3.42	0.504
9.	I am satisfied as a learner of this program	3.39	0.583
10.	I would strongly recommend this program to other friends	3.50	0.590

The results of this study indicated that the respondents have positive attitude and found that the program is relevant to their needs and expectations. This findings of this study indicated that this program is successful in realizing the aims of producing more qualified and competent teachers in line with the second strategic thrust in National Education Blueprint (PIPP). It has produced qualified and competent teachers as aspired by the Ministry of Education.

c. Success Rate, Academic Achievement and Study habits of Student teachers

i. Success and retention rates of enrolled student teachers

The success rates, retention rates, and performances of student teachers are important indicators of the acceptability and sustainability of a program. At the end of this Diploma in Teaching Program, the success and retention rate were 100%, meaning that no learner left this program. This indicated that IPG Kampus Pulau Pinang is successful in creating opportunities for learning to student teachers of the program to complete the program successfully.

ii. Academic Achievement of Respondents

Table 3
Results of the respondents

No.	Result	Mathematics Major	Science Major
1.	Excellent	10	6
2.	Credit	8	0
3.	Pass	0	0
	TOTAL	18 (66.7%)	6 (33.3%)

From the results of the examination as shown in Table 3, 100% student teachers were able to complete the program successfully. This is the final result of the respondents for 5 levels of interaction throughout a span of 3½ years, This is a good indicator as the attrition rate is 0% and that all the student teachers are able to complete the program successfully. Of these, 16 (66.7%) of the student teachers graduated with excellent grades and 8 (33.3%) of the student teachers graduated with credits. Obviously, this dispels the fear that adult students cannot be learn and complete a program successfully. The high success rate of student teachers has implications for the Institute to produce qualified and competent teachers.

iii. Study Time and Study Habits

To explore the reasons for the high success rates, learner responses on the time they devoted to their studies and on their study habits were examined. In view of their societal, familial, and personal commitments, student teachers invariably experience acute shortages of time. A frequently asked question concerned the number of hours student teachers must study everyday or in a week to successfully complete a program in the minimum time without compromising the quality of learning. This study showed that respondents spend between 1 to 5 hours per day to learn the contents of this program. The average spent per day is 1.67 hours and 7.72 hours per week. This indicated that consistent study habit is essential to be successful learners. The respondents of this study are conscientious learners and they are concern about their studies. They spent considerable number of hours in their studies everyday and eventually completed the program successfully.

Table 4
Hours spend on learning per day and week

No.	Item	No. of hours	Mean
1.	Hours spend on learning per day	Between 1 – 5 hrs	1.67 hrs
2.	Hours spend on learning per week	Between 1 – 20 hrs	7.72 hrs

Regarding the time of day spend to study, majority of the respondents i.e. 87.5% of them indicated that they prefer to study at night, while 41.4% of the respondents indicated that they prefer to study in the morning and only 4.2% indicated that she prefers to study in the afternoon. The results of this study revealed that adult learners prefer to study at night when they have completed the day's task. 75% of respondents of this study found that the modules provided helped them a lot in their studies. They gathered a lot of information from the modules. In addition, they also cited that the face-to-face interaction held during the semester holidays also helped them in their studies. Results from this study indicated that the instructional design for the program namely, self-instructional study materials (course modules), and face-to-face interaction with lecturers helped the respondents in their studies.

d. Lifelong Learner Characteristics

All of respondents (100%) of this study perceived that learning is important to them as shown in Table 5. Learning was viewed as very important by 95.8% of the respondents. Additionally, 95.8% of respondents agreed that it is important for teachers to be lifelong learners. All respondents professed that they personally want to learn. It is of utmost importance to instill lifelong learning culture amongst Malaysian citizens in accordance with the government's policy to achieve the status of a developed nation. Teachers should be lifelong learners in order to update and upgrade themselves with the new development in the teaching arena.

Table 5
Importance of learning

Item		Frequency	Percentage
How important is learning to you?	Important	1	4.2
	Very Important	23	95.8
Is it important for teachers to be a lifelong learner?	Important	3	12.5
	Very Important	21	87.5
Should teachers be lifelong learners?	No	1	4.2
	Yes	23	95.8
Do you personally want to learn?	Yes	24	100
	No	0	0

Respondents of this study indicated that the reason for them to pursue their education is to increase their self confidence, to have higher qualification and to develop new skills (Table 6). These three reasons recorded means of 3.79 from a four Likert-scale of agreement (1=Strongly Disagree; 2=Disagree; 3=Agree and 4=Strongly Agree). This is followed by the reason for them to continue their education due to personal development and to gain new knowledge (mean=3.75). The findings of this study is congruent with the reasons that encouraged adults to be lifelong learners cited by Adult Education Centre, 2005 as a change in (a) their skills, (b) behavior, (c) knowledge level, or (d) even their attitudes about things. The findings of this study indicated that adult learners of this program are lifelong learners and always seek to improve themselves in terms of skills and knowledge. This is of utmost importance as teachers are required to update and upgrade themselves with the new information and technology in this globalization era. It is imperative of them to be lifelong learners seeking new information and skills to keep abreast with the new developments in the world. This finding also implied that the Ministry of Education should provide more opportunities and avenue for teachers to continuously develop their professionalism in all aspects related to the school and education environment.

In this study, reasons to study for item 'For promotion' and 'For enjoyment' recorded the lowest mean of 2.91. This implied that the respondents do not view promotion as an outcome of their learning and that they do not view learning as for enjoyment. This is a good indicator and it implied that the respondents are conscientious learners and take the learning process seriously. This finding is also in congruent with the reasons cited for them to pursue their education namely to increase their self confidence, to have higher qualification and to develop new skills. This is proven by the respondents' academic achievement shown in Table 3 whereby 66.7% of the student teachers obtained excellent grade in their studies.

Table 7 depicts the primary obstacle that prevented the respondents to be lifelong learners. The item 'Not enough time' is cited to be the main obstacle. This item recorded a mean of 2.84 out of a four Likert-scale of agreement (1=Strongly Disagree; 2=Disagree; 3=Agree and 4=Strongly Agree). This is followed by the item 'Childcare commitments' (mean=2.74) and 'Working hours prevent it' (mean=2.42). Although these three items recorded the highest mean out of the 11 items identified in this study, but all the three means are less than 3. This implied that these three items are not strong obstacles.

Table 6
Reasons to study

No.	Item	Mean	Standard Deviation
1.	To increase self confidence	3.79	.415
2.	To have higher qualification	3.79	.509
3.	For promotion	2.91	.971
4.	For more money	3.26	.689
5.	Develop new skills	3.79	.415
6.	For personal development	3.75	.532
7.	For enjoyment	2.91	.900
8.	To help others	3.63	.495
9.	To gain new knowledge	3.75	.442
10.	For personal satisfaction	3.57	.590

The number of hours per day which is 24 hours is insufficient for working adults to complete all the errands and responsibilities that they hold. This is the main reason that prevented them from continuing their studies after their secondary school education. The results of this study also indicated that majority of them are married (79.2%). This means that most of them have additional role and responsibility as a father or mother besides their official role as untrained religious school teachers in their respective schools. Moreover, the demanding hours in religious schools which required them to work additional hours have prevented them from furthering their studies. This calls for more avenues given by the Ministry of Education, Malaysia to provide more opportunities for untrained teachers from religious and non-religious schools to pursue their education. More and better incentives or promotions should be given to lifelong learners who sacrifice their time, effort and energy to uplift the educational standards of the nation.

Table 7
Obstacles to continue study

No.	Item	Mean	Standard Deviation
1.	Childcare commitments	2.74	1.096
2.	Not enough time	2.83	1.007
3.	Not relevant to me	1.74	.810
4.	Working hours prevent it	2.42	.929
5.	No suitable program	1.67	.702
6.	Transport difficulties	2.08	.881
7.	Don't know what is available	1.88	.741
8.	I feel I am too old	1.79	.833
9.	Lack of confidence	2.26	.752
10.	Fear of exams	2.39	.722
11.	Not interested	1.88	.537

Recommendations

An interesting finding from this study was that the respondents of this study are adult and lifelong learners. As lifelong learners, they always seek to improve themselves in terms of skills and knowledge. The reason for the respondents to pursue their education is to increase their self-confidence, to have higher qualification and to develop new skills. This calls for adult learning programs and adult educators to place a high priority on developing the students' confidence and skills. Adult educators should be competent in terms of knowledge and skills to lecture, tutor and facilitate their adult learners' studies. Thus, it is recommended that all adult educators to consistently update and upgrade their knowledge and skills in accordance to the new development in the world of education.

The respondents opined that they have achieved the program objectives and the content of the program is relevant to them as teachers. This result indicated that the instructional design for the program namely, self-instructional study materials (course modules) and face-to-face interaction with lecturers is suitable and successful in assisting students' learning. Thus, more emphasis should be given to these two methods to ensure the success of future holiday course programs implemented by the Ministry of Education. It is also recommended that studies to be conducted on the quality of course modules and the face-to-face interaction with lecturers.

As the study showed that the respondents perceived that learning is important and teachers should be lifelong learners, more opportunities should be provided by the Ministry of Education to enable the respondents to pursue their ambition as lifelong learners. The respondents also indicated that they would like to further their studies to obtain their first degree. Thus, it is recommended that the Ministry of Education should provide more opportunities and avenue for teachers to continuously develop their professionalism in all aspects related to the school and education environment. This will be a two-pronged strategy for it will be able to produce more qualified and competent teachers as aspired by the Ministry of Education and also to uplift the educational standard of Malaysian education. It is of paramount importance for ensuring that all Malaysian teachers are qualified and trained with pedagogical and psychological knowledge and skills to produce future leaders of the nation. All teachers whether trained or untrained should be given more opportunities to update and upgrade themselves in this globalization era. It is imperative of them to be lifelong learners seeking new information and skills to keep abreast with the new developments in the world.

Conclusion

In this age of rapid technological and economic change, life-long learning is becoming a way of life. As the population seeks more education, participation in learning activities by adult learners have also increased. There will continue to be an increase in the number of adult learners. Teachers who are adult learners should reinvigorate their educational knowledge, skills and competencies to uplift the educational standards in Malaysia. It has become crucial for teachers to increase one's level of vocational competence. The respondents of this study were predominantly adult learners (teachers from religious schools), who lived far from the institution. IPGKPP has succeeded in providing access to teacher education for the non-trained primary school teachers from government-aided religious schools in Malaysia. A high retention and success rate have significant implications for future students, the program developers, and the Institute. It indicated that adult learners can be successful learners if they desired to do so. Self-instructional study materials and face-to-face interaction have helped the learners to complete the courses in the program successfully.

Respondents of this study are more confident as teachers after attending this program. This is a good indicator on the success of this program to produce qualified teachers to uplift the

educational standards in Malaysia by having more qualified and competent teachers. In addition, the respondents of this study also opined that the objectives of this program have been achieved. They are satisfied as learners of this program and will recommend this program to other friends. This program has also produced lifelong learners who will continue to learn and develop their career paths. Lastly, teachers should be lifelong learners so as to be opened to new ideas, knowledge and skills that are constantly evolving in this globalised era.

References

- Adult Education Centre. (2005). *Facilitation skills: Working with adult leaders*. Dublin, Ireland: University College Dublin. Retrieved on April 6, 2011 from www.ucd.ie/adulted/resources/pages/faciladnrogog.htm
- Cross, K. P. (1981). *Adults as Learners*. San Francisco: Jossey-Bass.
- Garratt, B. (1990). *Creating a learning organization*. Cambridge: Director Book.
- Knowles, M. (1990). *Adult learners: The neglected species*. London: Kogan Page
- Knowles, M, Holton, E.F. & Swanson, R.A. (1998). *The Adult Learner* (5th Edition). Texas: Gulf Publishing Co.
- Lacefield, R. S. (2004). *Adult Education in Practice: Highlights from Research*. Retrieved from <http://roberta.tripod.com/adulted/indexadu.htm>
- Ministry of Education Malaysia. (September, 1987). National Philosophy of Education.
- National Center for Education Statistics*. (2010). Adult Learners. Retrieved on 28 March 2011 from http://en.wikipedia.org/wiki/Adult_learner.htm
- Rogers, A. (1969). *Teaching Adults*. Milton Keynes, England: Open University Press.
- Smith, N. N. (2003). Characteristics of Successful Adult Distance Instructors for Adult Learners. *Inquiry*, Volume 8, Number 1, Spring 2003
- Speck, M. (1996, Spring). Best practice in professional development for sustained educational change. *ERS Spectrum*, 33-41.
- Theo, N.K., Abdul Rani, R. and Soon Fook, F. (2005). Developing scientific and technological literacy (STL) towards lifelong learning: A case study for continuing professional development (CPD). *Malaysian Online Journal of Instructional Technology*, 2 (2), 137-147.
- Vaughn, E.D., Wang, M. C. & Dytman, J.A. (1996). Implementing an Innovative Program: Staff Development and Teacher Classroom Performance. *Journal of Teacher Education*, 38(6). Pp. 40-47
- Vacca R.T. & Walker, J.E. (1980). Andragogy: the missing link in college reading programs. *Lifelong Learning*, 3(6), 16-25.
- Wynne, R. (2011). *The Learner Centred Methodologies*. Retrieved on 20 March 2011. from http://www.assetproject.info/learner_methodologies/before/characteristics.htm

About the Author

Helen Khoo Chooi Sim, PhD., is a lecturer at the Malaysian Teacher Education Institute, Penang Campus (Institut Pendidikan Guru Kampus Pulau Pinang, Malaysia). She holds a PhD in the field of Distance Education Systems.

Email: helenkhoocs@yahoo.com

Editor's Note: Each institution and each culture that is infiltrated by technology and the opportunities of e-learning make similar discoveries about its value to strengthen education programs and the transformation in pedagogy and administrative support required to optimize hybrid and total distance learning systems.

Dealing with Challenges to Learning in Higher Education Institutions through E-Learning

Jephias Mapuva
South Africa

Abstract

It has become common knowledge that Information and Communication Technologies (ICTs) have had an unprecedented impact notably in HEIs where students seeking to enhance their computer literacy skills and communication have been enrolling for courses, some doing so through distance education. Consequently, this has made the internet a very significant and indispensable teaching/learning, communication, and marketing tool for information dissemination for both education purposes and business transactions. This has also shown that the internet possesses the propensity to transform the face of educational deliverables and deliverances, as well as change how society perceives the retention of and have access to knowledge. Faced with the daunting task of having to grapple with this inevitable change brought by the emergence of ICTs within the education and communication domains, universities have had to re-adjust and re-organise institutional and organisational culture in preparation for the incorporation of e-learning within their institutions. At the same time institutional leaders have been daunted with the challenge of having to (re)align their institutional objectives to meet the needs and demands of e-learning, such as having to commit financial resources (and time) to procure the necessary infrastructure. This article holistically explores how HEIs have been able to accept and adopt (and even adapt themselves) to the increasingly changing educational and learning environment on face of increased demand for ICT utilization in HEIs.

Keywords: technology, e-learning, e-pedagogy, students, institutional, university, lecturers, education, implementation, environment.

Introduction

Use of the internet as an e-learning deliverable and initiative has created expectations both in the business market and in higher education institutions (Singh, O'Donoghue and Worton, 2005, p 3). Indeed, e-learning has enabled universities to expand on their current geographical reach, to capitalise on new prospective students, and to establish themselves as global educational providers. As a result this has made the internet an indispensable teaching and learning tool. As a consequence, e-learning has also become an indispensable learning and teaching tool. Govindasamy (2002, p 287) has noted that most HEIs across the globe as well as training institutes within the corporate world are resorting to e-learning as a means of solving authentic learning and performance problems, while other institutions are hopping onto the bandwagon simply because they do not want to be left behind. Despite the different reasons for adopting e-learning within HEIs across the globe, the underlying end-result has been that e-learning has helped to transform education and has become associated with and construed in a variety of contexts such as distance learning, online learning, and networked learning (Wilson 2001).

In the context of this paper, all of these instances will be considered to describe learning that utilises information communications technology (ICT) to promote educational interaction between students, lecturers, and learning communities (Holley 2002, p45).

Volery (2000, p 35) argues that the fast expansion of the Internet and related technological advancements, in conjunction with limited budgets and social demands for improved access to higher education, has produced a substantial incentive for universities to introduce eLearning courses. Volery (2000, p 36) concurs that if universities do not embrace eLearning technology that is readily available, they will be left behind in the pursuit of globalisation. Ribiero (2002, p23) argues that if universities are to maximise the potential of eLearning as a means of delivering higher education, they must be fully aware of the critical success factors concerned with introducing online models of education.

The emergence of ICT within the education sector has not only changed the role of lecturers and their modes of instruction. Instead ICTs have been able to augment and supplement what has been done over time. O'Hearn (2000, p 7) contends that university structures are rigid and unproven regarding the incorporation of technological advancements. Holley (2000:35) states that eLearning is difficult to implement without the full cooperation and support of lecturers, as the degree of interaction between lecturers and students is still predominant in eLearning environments (Volery 2000, p 37). O'Hearn (2000, p 67) concurs by noting that traditional universities should be able to compete with other independent education providers in relation to social demands for 'lifelong learning' and globalised education services.

This paper draws from a wealth of relevant literature by proponents of the use of e-learning in HEIs, but towards the end the authors take a position on the extent to which the application of technology in HEIs has impacted information dissemination and delivery of courses to students.

Institutional Leadership as Conduits for Change and Innovation

Institutional leaders are perceived to be drivers of change within their constituencies. In dynamic situations, institutional leaders should assume the role of being the front runners in the transformation of their institutions and as such have been pivotal in instituting change and transformation within the education sector. The role of institutional leaders should therefore be explored because they are the implementation arm of HEIs, and their decisions impact the adoption or non-adoption of e-learning, as well as attitudes towards the adoption of e-learning in their institutions. One of the most crucial prerequisites for successful implementation of e-learning is the need for careful consideration of the underlying pedagogy, or how learning takes place online (Govindasamy, 2002, p 287). This is the prerogative of institutional leaders to ensure that the right approach is adopted and the appropriate infrastructure and attitude are inculcated in those whose task it is to implement e-learning. Leadership and management are seen as key to effective e-learning implementation. "*Lack of leadership*" among people in senior positions throughout the education system (principals, finance officers, learning directors and local authority officers) can be considered one of the most important barriers to effective e-learning implementation (Thorpe, 2007, p 67). Poor planning and lack of foresight by institutional leaders may create problems emanating from a lack of understanding (and vision) of what e-learning could do for their particular organisation, with insufficient recognition of the resources required (KI 24); as well as poor understanding of what e-learning can offer more generally, resulting in "*strategies, plans, and funding arrangements*" that do not exploit e-learning (Harris et al, 2007, p 5). In the implementation of such programmes as e-learning within HEIs, institutional leaders are a determining factor given their decision-making roles, which could make or break the e-learning projects by either facilitating or impeding its implementation within their institutions.

The *modus operandi* of HEIs entirely rests with the attitude of these institutional leaders and the institutional structures and organisations that they implant within their institutions for the execution of policy. Research has shown that institutional leaders and administrators who have a keen interest in adopting new technology have shown the desire to inculcate the same values to their respective institutions by creating a conducive and supportive teaching /learning

environment through ‘...their recognition of the [institutions’] *in loco parentis* role in protecting their institutions from inappropriate material’ (Levin and Arafeh’s, 2002, p 66). Such leaders would devote or channel many more resources (expertise/personnel, infrastructure and financial) for the subsequent implementation of e-learning and e-pedagogy within their institutions, especially given the large number of students questing for tertiary education. Fry (2001, p 36) expresses the view that if universities are to compete in a global higher education market, they must embrace technological advancements and use them as a strategic tool capable of transforming educational and business practices. Fry (2001, p 29) considers that eLearning initiatives will not only give universities a new channel of educational deployment, they will also support strategic objectives by assisting asynchronous discussion consortiums and networked communities. The success of e-learning implementation depends on the institutional structures that institutional leaders create within their institutions in preparation for the incorporation of any new technological innovations for improving the efficiency of their lecturers and the effectiveness of the pedagogical methods that lecturers use in disseminating educational material to learners. It is therefore necessary to explore HEI organisational structures that enable the adoption of e-learning.

The Changing Organisational Structure of HEIs

Age-old practices and habits especially in dynamic institutions are soon overtaken by events. In HEIs, the traditional modes of instruction find themselves soon superseded by new technological innovations, with some being declared redundant. Consequently organisations and institutions need to gear-up for change, a process which is inevitable. Within the HEI discourse, debates have raged about the importance of changing organisational structures in preparation for the incorporation of technological innovations within HEIs. The last decade has experienced structural changes of higher educational institutions in preparation for the introduction of technological initiatives. Scott (2000, p 36) contends that as e-learning is now facilitating a more flexible learning approach; contemporary institutional structures are less robust than in previous years. On the same note Shaba (2000, p 7) states that technology in general has not only improved knowledge storing methods and learning techniques but has also acted as a catalyst to combat the barrier of inflexible organisational structures. (Singh et al, 2005, p 9) concur by pointing out that this view suggests that to fully experience the benefits of technological advancements such as eLearning in higher education, universities must have flexible organisational structures. According to Scott (2000, p 37), the structure of today’s universities must be ‘changeable’ in order to integrate distance learning courses, and those institutions that will not or cannot change their structure to incorporate this technology may be bypassed by other educational providers such as virtual universities and independent educational services. It might well be the case that corporate universities, which hitherto only offered training to their employees, will be in competition with the higher education sector. Darling (2002, p 43) argues that such a wide acceptance of eLearning methods in higher educational institutions will create broader repercussions regarding organisational structure. This point is illustrated by Shaba (2000, p 65), who suggests that universities are currently inexperienced concerning the acceptance and incorporation of eLearning and other technological changes into their organisational structures. Shaba (2000, p 31) considers that this lack of experience will initiate a number of reactions within universities, such as ambiguity towards future technology strategies and how to incorporate new technological advancements into organisational structure, and how to cope with the diverse range of teaching courses and learning programmes ongoing within a university comprised of full time and part time students. Shapiro (2000, p 45) suggests one of the challenges facing traditional universities intending to transform organisational structure to incorporate technological innovations is coming to terms with the process design for distance learning courses without ignoring the organisational, managerial, and financial constraints. Many universities in

developing countries have been the worst hit by technological innovations given their deeply entrenched traditional pedagogical experiences based on the talk-and-chalk teaching methods. However shortage of resources has been a stumbling block in the implementation and adoption of e-learning both in developing and under-developed countries. In most cases such shortages have been overcome through devoting more financial resources for the procurement of technology to enhance learning and teaching, which is the prerogative of institutional leadership and the appropriate state departments.

Although advocates of traditional approaches to higher education may argue that courses should be taught in fixed locations using somewhat rigid organisational structures, the opinions of many writers suggest that eLearning methods will greatly change future higher educational systems. Volery (2000, p 65) suggests the broadening geographic distribution, flexible learning environments, and variety of educational models that are offered by distance learning facilitate improved education, and he points out that if universities do not embrace this technology, they will be left behind in the pursuit of globalisation and technological development and excellence.

The impact of eLearning initiatives will have direct effects on the future structure of universities on both strategic and tactical levels (Shaba 2000, p 34). Strategically, universities will experience issues concerning face-to-face versus virtual environments, the number of buildings to keep, and most importantly, whether to maintain the existing organisational framework. On a tactical level, the changing role of lecturers, the changeable learning environment, and the design of eLearning facilities will all contribute to a potentially more flexible organisational structure. Despite the apparent dysfunctional effects the implementation of distance learning techniques can assert on university structure, O'Hearn (2000, p 29) adds that contemporary university structures must be changeable and adaptable, able to embrace new learning and communications technology offered through eLearning or face the consequence of limiting student's direct access to global knowledge repositories that have the ability to extend higher education. In addition to the organisation and structural organisation of HEIs, the lecturing staff plays a pivotal role in the implementation of e-learning within HEIs. Therefore, their role as pacesetters and implementers, as well as determinants of e-learning in HEIs, should be explored.

Providing Staff Training Support in Preparation of the Adoption of e-Learning

In HEIs, the teaching staff is there to implement educational policies that are in place. As a result upon introduction of new procedures and practices, training support should be provided for staff to equip them with the prerequisite for their new role as users of new resources. The same applies in HEIs where, once ICTs are introduced, support training should be done to orient staff on the use of new technology. Volery (2000, p 57) maintains that technical expertise on its own is not of great value unless lecturers conceive effective ways to utilise it. Educational material should be transmitted to students through the teaching staff, who are tasked with the dissemination of educational material to students. Debates on the pivotal role of lecturers have ensued with the bottom-line being the indispensability of the teaching staff in the education sector. Lecturers will always play a key role in the effective delivery of eLearning initiatives, as it is the lecturer, not the technology that facilitates the students learning experience. Wilson (2001, p 8) suggests that three characteristics of the lecturer will control the degree of learning: attitude towards technology, teaching style, and the control of technology.

Attitudinal aspects should be considered in addition to the availability of lecturers if successful adoption and implementation of e-learning within HEIs is to be achieved. Flexibility on the part of lecturers should be exercised, especially given that the world is a dynamic place; so is technology and the demands of society. Commitment and a positive attitude towards e-learning by lecturers helps to create a conducive environment for the successful implementation of e-pedagogy and subsequently yield positive results for students as well. In support of this view, Holley (2002, p 117) concludes that students will experience a more positive learning experience

if guided by a lecturer who retains a positive attitude towards traditional learning whilst promoting eLearning methods. This has been referred to as 'Blended Learning,' which is “an important building block of the new schoolhouse that offers students both flexibility and convenience, important characteristics for working adults who decide to pursue postsecondary degrees,” (Singh, O'Donoghue and Worton, 2005, p 12). Blended learning is a hybrid of traditional face-to-face and online learning so that instruction occurs both in the classroom and online, and where the online component becomes a natural extension of traditional classroom learning (Colis and Moonen 2001, p 28).

However, despite the possession of positive attitudinal attributes, the dynamic nature of the IT industry in conjunction with evolving eLearning technologies has created challenges and, in some cases, tension for lecturers in higher education. E-learning initiatives have reportedly created new educational issues for lecturers, such as changing work patterns or the reluctant integration of technology. Serwatka (2002, p 49) argues that sometimes student success can be achieved simply by preventing student withdrawals from eLearning programmes. The teaching techniques used by lecturers in traditional courses may also have to be reviewed and modified, as they do not always prove effective or necessarily transferable in eLearning environments (Serwatka 2002, p 49). Lecturers in networked learning environments modify their courses as they go along, meaning the longer a course is taught in a particular format, the more effective it is (Volery 2000, p 22).

Given the pivotal role that lecturing staff play in the adoption and execution of e-pedagogy, it becomes necessary to continuously equip them with more knowledge through training and refresher courses as a way of creating confidence in them. It has been observed that most lecturers are not impervious to learning new skills. Many are more than prepared and receptive to new ideas. Recent studies indicate that the success of eLearning methods in higher education can only be measured according to the effectiveness of delivery; training staff may be regarded as a major challenge in the adoption of eLearning initiatives (Singh, et al 2005, p 528). However, given the different experiences and ideologies among the lecturers, it is acknowledged that some academics working in higher education are reluctant to accept aspects of technology in their teaching and learning because of lack of understanding and confidence in the new technological innovations. Charlesworth (2002, p 179) adds that contemporary lecturers are not resistant to training in the use of technological applications; they are simply confused as to how to implement such into lectures or more formal teaching methods. Lecturers that enter the profession in today's information age are much more likely to have used computers and have significant access to the Internet than those in previous years and are more likely to accept technological advances in teaching methods. (Wilson 2001, p 24). Academics are often encouraged by their institution to "go online" by either moving or supplementing teaching in an online environment. This could simply be attempting to replicate face-to-face teaching, in effect changing nothing; enhancing face-to-face teaching with the available technology; or transforming face-to-face teaching by the available technology. The approach chosen will be determined by several factors, one of which will be existing knowledge of the technological environment being used (Coldwell 2003, p 185).

Additionally, the pivotal and determinant nature of lecturers is further shown by the fact that they should be involved in the whole process of the education dissemination continuum. (Shank 2002, p 56) concurs with this argument by asserting that “educators must therefore be involved in all stages of eLearning course development, including determining the prospective audience, the purpose of the learning programme and the best format”. This view highlights the requirement for lecturers not only to be trained to apply eLearning technology in higher education but also be attentive of the theories behind distance based learning. Proficient training includes both technical and conceptual issues and if executed correctly will generate increased support for the merits of eLearning (Shapiro 2000, p 56). Lecturers must possess the appropriate facilitation skills if eLearning courses are to be successful. Shank (2002, p 65) argues that facilitation skills fall into

three sections: facilitating real time events, moderating online discussions, and coaching students. Shank (2002, p 66) continues that if lecturers do not maintain a high level of facilitation skills, even the most effectively designed eLearning courses will be unsuccessful due to inattention by the lecturer. The evidence suggests that staff training is a central concern for universities implementing any form of learning methods. It is essential that the opportunity to redesign and improve university teaching practises through eLearning is not usurped by a focus on training lecturers how to use the hardware and software (Shapiro 2000, p 56). Inadequately trained lecturers using eLearning in educational environments can become an obstacle which can, in the perception of students, lead to more problems in the application and use of ICTs (Volery 2000, p 8). The most conspicuous obstacle is the lack of confidence among academic staff who may envisage the collapse of the system during class. In contrast to traditional teaching skills (such as the talk-and-chalk and rote teaching methods), eLearning requires lecturers to be committed to a constant and changing learning curve, which may involve a mixture of formal training in conjunction with conferences and other less formal techniques, if they are to acquire and develop the skills needed to be an effective eLearning tutor (Shank 2000, p 19).

What is evident is that lecturers in HEIs work in a unique educational environment given that they are expected to implement technological changes within their respective working environments. It therefore becomes incumbent upon the lecturing fraternity to be receptive to changes in technology and to be prepared to embrace and impart the same skills to students. Lecturers in higher educational institutions must accept and embrace technological advancements offered by eLearning. Holley (2002, p 119) explains that lecturers have to adopt new educational approaches in order to maintain the quality of courses. Collectively, the evidence offered on the role of lecturing staff in contemporary eLearning courses suggests that online learning should not be regarded as an alternative to a traditional tutor. Effective eLearning programmes use lecturing staff combined with the appropriate technology to deliver effective learning. In addition, the lecturer is not only the knowledge source but is also a knowledge navigator using the Internet as a teaching tool. This enables lecturers to transfer their skills in other business areas such as developing training and corporate courses (Ribiero 2002, p 85).

The Need to Create a Conducive Learning Environment

Within the learning environment students form the epi-centre of the learning continuum and as such are the principal clientele for HEIs. It therefore becomes compulsory that institutions create conducive learning environments for their students. A good learning environment has a bearing on the provision of an improved learning experience. Singh, et al, (2005, p 526) suggest that an eLearning environment offers students an improved learning experience when compared to a more traditional learning environment. Holley (2002, p 120) found that students in eLearning university courses using techniques such as virtual lectures and bulletin boards achieved better grades than students who studied in traditional learning settings. Hartley (2000, p 37) maintains that the constraints of conventional university teaching practises with regards to group work are removed in eLearning environments, as students can participate in group activities without actually being situated in the same location. Indeed, alternative relationships are developed within the context of an online community (O'Donoghue and Singh, 2001, p 525). This supports the view that eLearning environments loosen the time and space restrictions associated with traditional university practises.

The complementarities of modern and traditional teaching methods have been espoused by many educators who argue that there is no one method that is all-encompassing and effective. Serwatka, (2002, p 62) concluded that although eLearning environments overcome the traditional time and space constraints, universities must be cautious when deciding if modern distance learning environments should replace the traditional methods, as students recognise the benefits of the eLearning environments but only when combined with traditional formats.

On the other hand debates about the environment as a determinant factor in e-learning have raged. Many writers have proposed that the current significant limitations of eLearning environments are not exposed by contemporary research (Singh, et al 2001, p 527). O'Connell (2002, p 15) proposes that those students from non-technical backgrounds or those who are more accustomed to traditional face-to-face learning environments experience problems absorbing course material in eLearning environments. Similarly, Holley (2002, p 118) suggests that even undergraduate students who are perhaps more assertive and motivated should be given focused training on how they can take full advantage of eLearning environments. IT skills can prove problematic for students on distance learning courses, and if the requirement for training is not addressed, students will not experience the full benefits of the eLearning environment (Holley 2002, p 119). Furthermore, a lack of IT skills is one of the main reasons for student non-participation in eLearning courses (Wilson 2001, p 17). Whilst not looking to replace 'real' paper with technology based resources, it is the process of augmentation and enhancement of the 'traditional' resources that enables reflection, encapsulation, consolidation and extension of the written word (Wilson, 2001, p 18).

Deriving Benefits From e-learning by Students

It has also been found out that e-learning can facilitate enhanced communication between and among students and lecturers. Singh, (2001, p 528) has noted that among the most visible and valuable attributes of e-learning techniques and delivery has been greater access for students to education, in comparison to more traditional, less flexible educational methods. Hemsley (2002, p 27) has noted that full time and part time students can now partake in their chosen degree courses from any location, giving people who travel or who are relocated a transferable and easily accessible learning resource and experience. Through the use of advanced technology, students who have previously not had access to higher education now have the opportunity to study at the location that best suits their needs (Sadler-Smith 2000, p 32). ELearning offers people with disabilities the opportunity to further their education from home (Brown, Cromby and Staden 2001, p 294). Although these views propose the positive aspects of home working, there is still evidence to suggest that students who learn from their most convenient location will not engage in a positive learning experience (Singh, 2001, p 529). Working from home may at first sight, seem a positive way forward, but the learning process is often disrupted as the surroundings are not necessarily conducive to study (Shaba 2000, p 6) due to the household chores and interruptions from family members.

Accessibility to educational technology has been identified as vital for acquisition of knowledge and information dissemination to students, as well as interaction between lecturers and students. If eLearning is to benefit students by offering students greater access to higher education, it is necessary to consider not only access to education but also the access to technology where computers become an indispensable element of effective eLearning courses (Ribiero 2002, p 85). Students who have access to networked computers may have the opportunity to experience a more flexible learning process but students and indeed higher educational institutions could fail to benefit from this opportunity, due to students not being able to afford or gain access to a computer (Shaba 2002:19). Therefore, students with no computer at home maybe disadvantaged in eLearning environments. In addition, as a major consequence of an increased participation in higher education, a large number of students originate from low income backgrounds will have little disposable income to purchase computers (Holley 2002, p 116), therefore increased reliance on technology to deliver higher education may potentially lead to further divisions in society (Shaba 2002, p 26). In such cases, deprived home backgrounds militant against the acquisition of technological skills which further impedes on acquisition of knowledge through e-learning, a gap which HEIs should be able to fill.

HEIs have encountered problems where students lack the confidence to use technology and interaction with lecturers. Students need to be prepared to adapt to advances in technology, especially for learning and communication purposes. Untimely eLearning initiatives create unproductive learning environments in which students encounter difficulties with course material, are unsure how to prepare for online assessments and are reluctant to contact lecturers for assistance (Serwatka 2002, p 27). A major challenge for contemporary universities is to offer students a more client orientated educational programme (Hartley 2000, p 48) and this requires an educational understanding of the students need for a more flexible, easily accessible learning environment, which can be offered through distance learning (Fry 2001, p 236). Moreover, contemporary learners need to communicate and require the ability to share knowledge and skills from distance, therefore networked initiatives that are technically satisfactory and are highly personal offer students and universities the opportunity to customise the learning environment (Hemsley 2002, p 28).

Envisaged Prospects for e-Learning in HEIs

Despite challenges faced by HEIs, e-learning has successfully managed to bring education to the doorstep of all those who seek it. The need to create more conducive environment for learners has proved to be a requirement for the attainment of good results. Lecturers, to be able to conduct themselves confidently, should receive continuously training and upgrading of their pedagogical skills in accordance with the dynamic nature of technology. Students, being the central focal point for HEIs, should have access to internet and e-learning facilities if they are to prove themselves and attain their goals. Institutional leaders should continuously adapt themselves to changing technological environments and inculcate a positive attitude to adoption and implementation of e-learning within their institutions. Attitudinal aspects have been cited as determining the success or failure of adopting e-learning in institutions. The prospects for e-learning in HEIs remain bright, especially given the receptive nature that numerous HEIs and institutional leadership have and the optimism that students and lecturers hold of the future of e-learning in educations. This has been compounded by the preparedness of lecturers to meet challenges posed by the continuous technological innovations and their preparedness to learn new skills.

Conclusion

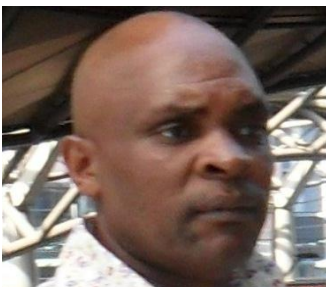
Despite the various debates on the adoption and implementation of e-learning as well as the accompanying challenges, e-learning remains an indispensable pedagogical phenomenon in the 21st century and beyond. Its ability to cater for a myriad of students seeking educational opportunities have made it the best conduit through which lecturers can interact with students anytime anywhere. The utilisation of e-learning has also cut distances which students in conventional learning institutions would have covered to access lecturers and learning materials. Incentives should therefore be accorded to HEIs to enhance e-learning facilities within their institutions. More financial resources should be devoted to the acquisition of resources and infrastructure for the promotion of e-learning facilities and infrastructure in HEIs. Attitudinal change should also be inculcated in institutional leaders to keep abreast of technological innovations for their respective institutions for the advancement of both their lecturers and students.

References

- ALT, (2003). A bullet point paper for the JIG from the Association for Learning Technology (ALT).
- Atwere, D., (2002). *A Survey into ILT/ICT skills Training in UK Further Education Colleges*, CITSCAPES Phase II, LSDA.
- Bennett, S; Maton, K; & Kervin, L (2008). The ‘digital natives’ debate: A critical review of the evidence *British Journal of Educational Technology* 39 (5) 775–786
- Brodsky, M. W. (2007). Four Blended Learning Blunders and How to Avoid Them, *ASTD’s Source for E-Learning*, Retrieved 9 September 2008; <http://www.learningcircuits.org>
- Brown, J. S. (2000). Growing up digital: how the Web changes work, education, and the ways people learn. *Change, March/April*, 10–20.
- Brown, D., Cromby, J., and Standen, P. (2001). The effective use of virtual environments in the education and rehabilitation of students with intellectual disabilities. *British Journal of Educational Technology*, 32(3) 289-299.
- Charlesworth, A. (2002). Computer tutor, *PC Advisor*, pp. 177-181.
- Coldwell (2003). Mapping Pedagogy to Technology - A Simple Model. In *Advances in Web-Based Learning - ICWL 2003 Vol. 2783 / 2003*. Springer-Verlag GmbH. pp.180 - 192
- Colis, B., and Moonen, J. (2001). *Flexible learning in a digital world: Experiences and expectations*. London: Kogan-Page.
- Darling, L. (2002). Your ELearning Strategy: Make sure it's learning for results. *Training*, 39(3), 2.
- Fry, K. (2001). ELearning Markets and Providers: some issues and prospects. *Training and Education*, 43(4) 233-239.
- Govindasamy, T (2002) “Successful implementation of e-Learning Pedagogical considerations”, *Internet and Higher Education* 4, 287–299.
- Hartley, D. (2000). All Aboard the ELearning Train. *Training & Development*, 54(7) 37.
- Hemsley, C. (2002). Jones International University's focus on quality eLearning opens doors for students worldwide. *Business Media*, 39(9) 26-29.
- Henry, P. (2002). Learning enters the boardroom: making the connection between strategy and enterprise-wide learning. *Industrial and Commercial Training*, 34(2) 66-69.
- Holley, D. (2002). "Which room is the virtual seminar in please?". *Education and Training*, 44(3) 112-121.
- O'Donoghue, J., and Singh, G. (2001). A Study of Social-Learning Networks of Students Studying an Online Programme. *International Conference on Advanced Learning Technologies (ICALT 2001)*. Madison, Wisconsin USA.
- O'Donoghue, J., Singh, G., and Dorward, L. (2001). Virtual Education in Universities: A Technological Imperative. *British Journal of Educational Technology*, 32(5) 517-530.
- O'Connell, B. (2002). A Poor Grade for ELearning. (Classroom Students Did Better). *Workforce*, 81(7) 15.

- O'Hearn, J. (2000). Challenges for service leaders: setting the agenda for the virtual learning organization. *International Journal of Contemporary Hospitality Management*, 12(2) 97-106.
- Ribiero, T. (2002). From a distance: Look at distance learning's increased following. *Education*, 152(9) 85.
- Sadler-Smith, E. (2000). "Modern" learning methods: rhetoric and reality. *Personnel Review*, 29(4), 474-490.
- Scott, T. (2000) The Wired Campus, *Business Weekly*, p. 102.
- Serwatka, J. (2002). Improving student performance in distance learning courses. *The Journal of Technological Horizons in Education*, 29 (9). 46-52.
- Shabha, G. (2000). Virtual universities in the third millennium: an assessment of the implications of teleworking on university buildings and space planning. *Facilities*, 18(5) 235-244.
- Shank, P. (2002). New skills for a new field: What you need to know to be an eLearning expert. *Online learning*, http://www.onlinelearningmag.com/onlinelearning/magazine/article_display.jsp?vnu_content_id=1278800 (accessed 5 March 2009).
- Shapiro, L. (2000). Evolution of Collaborative Distance Work at ITESM: structure and process. *Journal of Knowledge Management*, 4(1) 44-55.
- Sadler-Smith, E. (2000). "Modern" learning methods: rhetoric and reality. *Personnel Review*, 29 (4) 474-490.
- Volery, T. (2000). Critical success factors in online education. *The International Journal of Educational Management*, 14(5) 216-223.
- Wilson, J. (2001). Lessons of a Virtual Timetable: Education. *The Economist*, (17 February), p. 1 (CD-ROM).

About the Author



Jephias Mapuva is a researcher in the E-Learning Department of the University of the Western Cape, South Africa.

Email: mapuva@coolgoose.com jmapuva@uwc.ac.za

Editor's Note: Online assessment with immediate knowledge of results is preferred by most learners. It also makes sense from an "effectiveness of learning" point-of-view. This preliminary study is useful to explore the attitudes of pre-service teachers and to define parameters for further studies.

Pre-Service Teachers' Attitudes towards Online Assessment: An Initial Component of Teacher Training

Patrice C. Boyles
USA

Abstract

Online education is becoming the preferred mode of learning for many adults. More institutions are offering a myriad of courses and programs. This research examined perceptions of online assessment of pre-service teachers' who were enrolled in a class at an urban institution in the Midwestern United States. The survey focused on student and instructor performance, and future implementation. Data from this study revealed students preferred classes that use online assessment. The survey data uncovered common issues associated with online learning such as the need for educators to focus on learning styles and implement online 'best practices'. Recommendations can be used by higher education institutions to proactively plan and prepare distance education courses.

Keywords: Assessment, Evaluation, Distance Learning, Perceptions, Pre-Service, Teachers, Technology, Performance, Online Learning, Training.

Introduction

In a classroom without walls, online education has become the desired mode of many adult learners. It has become the anytime, anywhere way of continuing education thus forcing many educational institutions to revise delivery methods and strategies to adapt to e-Pedagogy learning environments. Those institutions that have chosen to embrace distance education are doing so for a variety of reasons including acquiring the opportunity to reach a more diverse population and expanding their revenue base. A research report by Allen and Seaman (2008) found almost two-thirds of all higher education institutions in the United States offer some type of online course.

The convergence of curriculum redesign, online methodologies, and new technologies can be difficult for some instructors. Some instructors are even apprehensive teaching online courses because they require significant planning and preparation. Given that, it has become critical for instructors to maintain instructional quality and implement 'best practices' in a virtual environment, which includes online assessment.

Assessment in any course helps instructors to identify potential learning outcomes. Online assessment allows for collaborative interaction between students and the instructor; it accommodates students and creates a flexible learning environment. Online Assessment fosters a climate of learning by allowing instructors to provide immediate feedback to students. It allows students to become actively engaged in the assessment process. There are several factors to consider prior to initiating online assessment.

Internal Factors

Internal factors include perceptions and beliefs related to learning, more specifically online learning. Instructors need to become aware of their teaching styles as well as their student's learning habits. Both instructor and student should displace preconceived notions of distance learning and employ a self-questioning framework that includes determining their motives, goals, abilities, disposition and strategies before embarking in an online course. More importantly,

instructors must create and employ a climate that is conducive to learning while at the same time help students identify their barriers. Grash and Hicks (2000, p. 3) research concluded teaching styles are centered on the “needs, emotions, and attitudes of the teacher.

External Factors

External factors to be considered include technical support as well as the student demographics. Many schools do not have the technical infrastructure to handle a migration to a distance learning platform. With regards to student demographics, many students enroll in distance learning courses with the preconceived notion that the courses are easier than face-to-face courses; some students are ill-prepared, and not disciplined. Many students enroll in online courses without proper preparation. To add fuel to the fire, some instructors who are facilitating online courses, are not properly trained to teach in an online environment.

The goal is to enhance the student’s experience in virtual environment. A student’s experience can be enhanced by promoting learning through discussion, feedback and by giving students opportunity for self-direction. Instructors are encouraged to inform students of course expectations and requirements early. Communication, collaboration and discussion are vital components to a successful virtual environment. While many schools rely primarily on asynchronous communication to deliver instruction, many instructors prefer incorporating synchronous as well as asynchronous instruction. Synchronous lectures allow the students and instructors to chat one-on-one in real-time to facilitate immediate feedback. Given that, the purpose of this study was to examine the degree in which students perceived online assessment and their faculty’s usefulness.

Literature Review

Advances in technology have forced many educational institutions to move beyond face-to-face traditional assessment to one that expands online curriculum. The goal is to increase student enrollment. There are a growing number of students enrolling in online courses. This was affirmed by Allen and Seaman (2010) report; approximately 5.6 million students were enrolled in at least one online course in fall 2009. Based on this, educational institutions have been required to prepare their students and instructors for online classes.

Pecheone and Chung (2006) addressed performance assessment as part of the teaching practice in their research. These assessments inform instructors on needed curriculum changes. In addition, the assessments can contribute to improvement of teaching. Curriculum embedded assessments are stressed more than ever before. These assessments occur throughout teacher preparation. Instructors can embed assessments into instruction in a variety of ways that include case studies of individual students, lessons, unit plans, analysis of student work, observation of student teaching and e-portfolio-based assessment. Research by Quellmalz, Schank, Hinojosa and Padilla’s (1999) research asserted assessment is another means to education reform; it has a direct correlation to budget implications. It allows stakeholders to use data to perpetuate change. Performance-based assessment has become one of the critical issues in educational reform, teacher preparation and educational funding. Ahn, through her research asserted “Portfolio-based assessment and more recently, the electronic portfolio have been seen as an alternative to standardized tests” (Ahn, 2004, p. 12). There is growing need for research on online assessment practices from face-to-face to online environments. Their research discussed the pros and cons of online assessment. In addition to instructors acquiring a new technology skill set, using the online medium structure required more time spent streamlining course content, requirements, building test banks, and uploading resources. Instructors needed to learn how to build a sense of community as they redefine pedagogy to meet the needs of learners in a virtual environment. This was affirmed by Woods and Ebersole (2010) research using “communal architect” or

community-building strategies. A “communal architect” is someone who erects a communal scaffold for the purpose of community building (Woods and Ebersole, p2).

Method

Research has shown that more educational institutions are offering online courses. Some are even offering entire degrees and certificates online. Authentic online assessment is at the heart of every learning experience and helps to negate negative student outcomes. Therefore, the purpose of this study was to investigate pre-service teachers’ perceptions of online assessment. The study was conducted at an urban university in the Midwest, where the majority of the students were African-American and all were enrolled in a technology class.

Overview of Design

To better understand teacher candidate’s perceptions of online assessment, a written survey was designed to collect data from the teacher candidates (see Appendix 1). Candidates were asked to reflect and respond to ten questions based on personal beliefs. All students enrolled in a technology course were given the opportunity to complete the survey. Descriptive and frequency statistics were conducted to analyze the data. The following describes the procedures used in detail.

Procedure

The procedure used to conduct this study comprised of several phases: 1) a survey was constructed, 2) the sample was selected, 3) data collection, and 4) data analysis. Students were given the option to participate in the study. Students who elected to participate were given the self-designed survey. To protect the anonymity of the participants, students were asked to not identify themselves and to return the survey to the instructor’s office or mailbox. Prior to class, students were given the purpose of the study and instructions to complete the survey and return it to the faculty member’s mailbox. All students completed a self-report questionnaire that gathered information on their perception toward online assessment. Participants were encouraged to reflect on their experience with online assessment.

Survey Construction

The researcher developed a self-constructed survey to gather information on students’ perceptions of online assessment. The instrument consisted of 2-page questionnaire which was divided into three sections: 1) perceptions of online assessment and 2) general comments and suggestions; 3) demographic information.

The first section consisted of ten questions rated on a Likert-type scale where the participants selected from strongly agree to strongly disagree. These questions focused on participants’ preference and use of online assessment. Participants reflected whether online assessment improved their pre-service teaching performance. Participants were also asked if online assessment enhanced their learning experience and if it should be required for all classes. To ascertain if more training is needed, participants were asked if they perceived instructors used online assessment effectively and if additional training was needed for faculty. To determine technology integration into curriculum planning, participants were asked if they plan to implement online assessment into their instruction after graduation. Participants were also asked if online assessment is an effective teaching method used in education courses.

Section two of the survey was left for general comments from the participants. The researcher was soliciting qualitative data that could be used to improve the use and effectiveness of online assessment at the university. The last section allowed participants to provide some general demographic information. (e.g. area of concentration, grade level, gender, age range). This information could be used to plan future online courses.

Data Collection

As the surveys were returned, the researcher sought potential themes from analyzing and sorting the data. The data was entered and analyzed using statistical software to complement descriptive data to provide student perceptions of online assessment.

Participants

The sample included all students who were enrolled in a technology course at a four-year urban higher education institution in the fall 2009 term. Students were informed the purpose of the study and procedures as well as the risks and benefits. Students who volunteered for the study were given a survey instrument. The survey was distributed to thirty-eight students. Twenty-three students (60%) agreed to participate. Nineteen students were female and four were males. For grade level, fourteen identified themselves as graduate students, three were seniors, two were juniors, one was a sophomore and the remainder were freshman.

Data Analysis

The phenomenological approach was used to analyze the experiences of students as they reflected on their perception of online assessment. The researchers intent was to give students a voice to the online assessment process and gain an understanding of past experiences using online assessment. To ensure every student had the opportunity to participate in the research, students were reminded during a face-to-face session that they could still participate in the survey until the end of the term.

Results

Of the 38 students selected for the sample, a total of 23 participated. This provided a final response rate of 60%. Of the students who participated in the survey, eighty-two (82%) were female. This coincides with the demographics of the student enrollment of the class and the university population. In 2007, the university reported 72% of its population were female and only 28% were male. Gender demographics of participants are shown in Table 1.

Table 1
Participant Gender Demographics

Sex	No. Students	Percent
female	19	82.6
male	4	17.4
Total	23	100.0

The data also revealed that the majority of the students were over 25 years of age. Out of the 23 students who responded to the question regarding age, 12 or 52 % reported they were between the ages of 31 and 40. This data also is reflected in the 2007 university report which indicated only 34% of the student population was between the ages of 22 and 29. Since this is a technology course, many students who enroll in this course are interested in learning how to integrate technology in a variety of majors. The majority of participants did not identify their area of concentration; however 21% identified their majors as elementary; 13% early childhood; 17% as career and technical education; and 8% as special education. The area of concentration is shown below in Table 2.

Table 2
Age and Area of Concentration

Area of Concentration	age range			Total
	21-30	31-40	41-50	
early childhood	1	2	1	4
elementary education	1	3	1	5
special education	0	2	0	2
career and technical education	2	0	2	4
other	2	5	1	8
Total	6	12	5	23

Preference Using Online Assessment

Of the students who participated in the survey, an overwhelming ninety-five (95%) percent agreed they preferred some use of online assessment. Many students prefer the use of online assessment due to the fact they can receive immediate feedback from instructors and have the opportunity to work in an asynchronous learning environment. The preference of online using online assessment is clearly shown in Table 3.

Table 3
Preference using Online Assessment.

Rating	Frequency	Percent
disagree	1	4.3
mildly agree	6	26.1
agree	12	52.2
strongly agree	4	17.4
Total	23	100.0

Participants also responded to whether online learning enhanced their learning experience. Students enrolled in an online course have more flexibility, and are allowed to reflect on becoming more active participants in the learning process. Students have the capability of using tools such as threaded discussions, e-mail, boards and chats. The majority of the students, ninety-one (91%) percent agreed online learning enhanced their learning experiences as shown in Table 4 below.

Table 4
Online Assessment Enhanced Learning Experience

Rating	Frequency	Percent
disagree	3	13.0
mildly agree	5	21.7
agree	10	43.5
strongly agree	5	21.7
Total	23	100.0

Instructors' usage of online assessment

While more instructors are revising their delivery methods to an online course platform, some instructors as well as students are having difficulty adapting to an online environment. Of the twenty-three students who participated in the survey, over ninety-five (95%) percent perceived to some degree instructors who use online assessment, use it effectively. This could be attributed to the implementation of best practices being incorporated in online courses. Instructors are encouraged to foster a climate of learning in a window without walls; and adapt instruction to allow every student the opportunity to express them and offer deeper discussion of topics. Students are encouraged to share experiences and suggestions related to issues being discussed. Instructors are also encouraged to develop social bonds online and switch their roles from content transmission to content acquisition while keeping students on task with relevant topics and promoting cooperative learning. Participant responses of usage of online assessment is shown in Table 5.

Table 5
Instructors who use online assessment, use it effectively

Rating	Frequency	Percent
disagree	1	4.3
mildly agree	10	43.5
agree	7	30.4
strongly agree	5	21.7
Total	23	100.0

Need of Online Instruction

While some pre-service teachers twenty-one (21%) do not agree additional instruction is needed using online assessment; a majority of the students seventy-nine (79%) perceive additional instruction is needed. The complexity of taking an online course can be overwhelming. Students must be able to identify barriers prior to enrolling in an online course. One of the first barriers is that of technology itself. Many students enroll in online courses do so without proper preparation. This could confirm the results of additional instruction responses as shown in Table 6.

Table 6
Additional instruction is needed using online assessment

Rating	Frequency	Percent
strongly disagree	2	8.6
disagree	3	13.0
mildly agree	4	17.4
agree	10	43.5
strongly agree	4	17.4
Total	23	100.0

Usage of Online Assessment

Several survey questions explored the usage of online assessment. Participants in the study were asked if online assessment should be used in all classes; should all pre-service teachers experience it, and if it is an effective teaching method used in education courses. Over half of the participants, seventy-eight (78%) percent agreed online assessment should be used in all classes. All respondents, (100%) agreed all pre-service teachers should experience online assessment and it is an effective method used in education courses. A high number of respondents also agreed online assessment is used effectively as illustrated in Table 4.

Table 7
Instructors who use online assessment, use it effectively

Rating	Frequency	Percent
disagree	1	4.3
mildly agree	10	43.5
agree	7	30.4
strongly agree	5	21.7
Total	23	100.0

Future Implementation Using Online Assessment

The data suggest that over ninety-five (95%) percent of the respondents agreed to some extent they plan on implementing online assessment into their instruction after they graduate. These factors suggest that future teachers are becoming aware of the latest technologies and pedagogical methods to enhance online learning. Prior to graduation, pre-service teachers are obtaining a first-hand look at what online assessment entails. The impact of technology integration and online assessment is clearly identified in Table 8 shown below.

Table 8**I plan to implement online assessment into my instruction after I graduate**

Rating	Frequency	Percent
disagree	1	4.3
mildly agree	3	13.0
agree	10	43.5
strongly agree	9	39.1
Total	23	100.0

Discussion and Conclusion

The findings from this survey can be divided into three discrete yet equally important outcomes associated with teaching and learning. The effects of these differing perceptions may explain why assessment and student outcomes go hand-in hand. Factors should be considered include both the pre-service teachers' preference using online assessment and their perception of instructors using online assessment. Insight was gained into pre-service teacher perceptions on how online assessment is used and how it impacts teaching and learning.

This study showed that there is a definite correlation between graduate course work and online instruction. The majority of the students participating in the survey were graduate students that plan to implement online assessment into their instruction upon graduation. This sets a roadmap for educational institutions to aggressively prepare for online instruction and assessment that is both flexible and authentic.

The first outcome relates to pre-service teacher preference using online assessment. Responses clearly show that the majority of the students prefer online assessment. The findings show it has enhanced their learning experiences and it has improved their pre-service teaching performance. The findings also suggest that the majority of the students plan to implement online assessment into instruction after graduation.

The second outcome relates to instruction. While more educational institutions are developing new strategies to develop online curriculums and assessments, results show that more training is needed for the instructor. Instructors are learning to assess themselves as learners as well as their students. "People who rely merely on a few learning strategies are likely to over-use them and apply them in inappropriate situations" (Roth, 1997, p. 2).

The third outcomes related to allowing the pre-service teachers have a voice in the online process. This section allowed respondents to make comments of online assessment and how it is used. Two students provided narrative feedback on online assessment.

One respondent said, "All teachers at this university need training on how to use Live Text". A different respondent said, "Chicago Public Schools has started an on-line assessment called (Scantron)." The responses from these students clearly indicated they are aware of movement towards online assessment.

Limitations and Future Considerations

This study has two major limitations: first, a limited sample. Data was obtained from a small percentage of students enrolled in a technology course in fall 2009. Participation in surveys is contingent on participants' interest in the subject matter. Participants may refuse to participate in surveys due to past experience with previous surveys. The use of a computer generated survey could have generated more responses and limited the amount of time of the respondents. The second limitation involved setting. This study took place during an evening and weekend technology class. Participants may feel they were overburdened and did not have sufficient time to complete survey.

When educational institutions elect to implement online learning, it is important to recognize the impact of online assessment. This study suggest that graduate students, particularly prefer online assessment. It also suggests that pre-service teachers who are exposed to online assessment plan to implement in their future classrooms. The findings of this study also suggest online assessment has enhanced their learning experience. A broader version of this study would include colleges and universities who offer online assessment exclusively for the graduate programs.

References

- Ahn, J. (2004). Electronic Portfolios: *Blending Technology, Accountability & Assessment*, T.H.E. Journal, 31:9: 12-18.
- Allen, I.E. & Seaman, J. (2008). *Online nation. Five years of Growth in Online Learning*. Needham, MA: Sloan Consortium.
- Allen, E. I., and Seaman, J. (2010) 'Class Differences: Online education in the United States', 2010, *Report from the Sloan Consortium*, Retrieved December 28, 2010, from [Online], Available: http://sloanconsortium.org/publications/survey/pdf/class_differences.pdf
- Anderson, Charles & Johnson (2003). *The impressive psychology paper*. Chicago: Lucerne Publishing.
- Grash, A.F. & Yangarber-Hicks, N. (2000). Integrating teaching styles and learning styles with instructional technology. *College Teaching*, 48 (1), 2.
- Pecheone, R.L. and Chung R.R. (2006). *Evidence in Teacher Education: The Performance Assessment for California Teachers (PACT)*, 57:1, 22-35.
- Roth, G. (1997). Helping adults learn how to learn. *The Korean Journal of Lifelong Education*, 3(1), pp. 139-153
- Quellmalz, E, Schank, P. Hinojosa, T. and Padilla C. (1999). *Performance Assessment Links in Science (PALS), Practical Assessment Research & Evaluation*. Retrieved February 23, 2011 from <http://PAREonline.net/getvn.asp?v=6&n=10>.
- Woods. R. Ebesole S. (2007). Becoming a "Communal Architect" in the Online Classroom-Integrating Cognitive and Affective Learning for Maximum Effect in Web-Based Environment, Retrieved June 28, 2011 from <http://www.westga.edu/~distance/ojdla/spring61/woods61.htm>.

About the Author

Dr. Patrice C. Boyles is a teacher, workshop leader and academic advisor with over ten years' experience in higher education. She has taught graduate courses in business education and technology education. She has provided professional development training to educators and business professionals across the state. Patrice embraces technology and is highly aware of the impact it has on teaching and learning in the classroom.

Email: pboyles@gmail.com

**Appendix A: Survey Instrument
Pre-Service Teachers' Attitudes towards Online Assessment:
An Initial Component of Teacher Training**

Directions: Indicate your opinion on online assessment by circling the appropriate number on the scale of 5-1.

5--strongly Agree, 4---agree, 3---mildly agree, 2---disagree, 1---strongly disagree

	Item	Strongly Agree	Agree	Mildly Agree	Disagree	Strongly Disagree
1	I prefer classes that use online assessment.					
2	Online assessment has improved my pre-service teaching performance					
3	Online assessment has enhanced my learning experience.					
4	Instructors, who use online assessment, use it effectively.					
5	Additional training is needed for faculty who use online assessment.					
6	I need additional instruction using online assessment.					
7	Online assessment should be used in all classes.					
8	All pre-service teaches should experience online assessment.					
9	Online assessment is an effective teaching method used in education courses.					
10	I plan to implement online assessment into my instruction after I graduate.					

Comments:

Please return form to Dr. Patrice C. Boyles, ED 203

Appendix B
Pre-Service Teachers' Attitudes towards Online Assessment:
An Initial Component of Teacher Training

Directions: Please complete the personal datasheet and return with the informed consent form

Personal Data Sheet

Please Circle Area of Concentration:

Early Childhood Elementary Education Special Education
Career and Technical Education Other _____

Grade Level: _____

Gender: Female _____ Male _____

Age Range: 21-30 _____, 31-40 _____, 41-50 _____