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Editorial

Definition of Instructional Technology

Donald G. Perrin

According to the National Aeronautics and Space Administration:

> History changed on October 4, 1957, when the Soviet Union successfully launched Sputnik I. The world's first artificial satellite . . . ushered in new political, military, technological, and scientific developments . . the start of the space age and the U.S.-U.S.S.R space race.

One outcome was an infusion of federal funds into U.S. public schools through the National Defense and Education Act (NDEA), to upgrade curricula and teaching methods, especially in science and engineering. Dr. James D. Finn, a national leader in audiovisual and innovative methods of education, participated in writing the legislation. Later, he was awarded a multi-year research grant by the National Education Association to study the role of technology in American Education. I was his research assistant. We engaged top researchers from across the country to write papers in their area of specialization, and initiated research from our project office to measure the impact of technology on classroom instruction. Results of the Technological Development Project were published in ten *Occasional Papers*, a final report, journal articles, and presentations and workshops at professional meetings.

The Project was in constant contact with innovators in military, business, industry, government, health care, and education, especially county offices of education and higher education. IT studied educational products of corporations such as RCA, General Learning, Eastman Kodak, and IBM; audiovisual equipment manufacturers such as DuKane and Bell & Howell; and startup companies such as Teaching Machines Incorporated (TMI) and Western Design. The study extended to current theory and research in communication, learning and methods of teaching.

Many innovative technologies were not *audiovisual* devices in the traditional sense. The overhead projector made it possible to teach with lights on facing students, permitting a more interactive kind of teaching. Language laboratories, teaching machines and computers were designed for individualized learning with interaction and feedback from the device itself.

One day, after a weekend with Charlie Hoban, Finn called together his project staff and graduate students to discuss a new definition. The term *Audiovisual* was too limiting; an expansive definition was needed to incorporate newer technologies as they are introduced. The definition must integrate theory and practice, methods and materials, and men and machines into systems of learning – systems that encompass empirical data, research, and instructional design. Finn and Hoban settled on the term "instructional technology". The group embraced the new definition, and almost a decade later, it was used by the Commission on Instructional Technology to introduce its two-volume report:

> Instructional technology is more than the sum of its parts. It is a systematic way of designing, carrying out, and evaluating the total process of teaching and learning in terms of specific objectives, based on research in human learning and communication, and employing a combination of human and non-human resources to bring about more effective instruction.
>
> Tickton, Sydney (ed.) To Improve Learning: An Evaluation of Instructional Technology. Vol.1. p.21. Bowker, 1970

Today, instructional technology is a sub-set of information technology, which adds storage and retrieval systems, information processing, and global networks. The computer facilitates Learning Management Systems (LMS), customized learning based on diagnostic / prescriptive evaluation,

and criterion-based learning so that all learners, including face-to-face and distant learners – reach established benchmarks. For almost half a century, *instructional technology* has defined key aspects of learning systems for instructional designers, teachers, and learners.

Editor's Note: If we could travel the world we could see the world's finest museums. But distance alone makes it difficult for most students to experience more than local museums, where they exist. The Internet can bring a global range of museum experiences to students everywhere, linking cultures, continents, and the local, regional, and global histories of the human race. This pilot test explored the value of virtual museums for student motivation and conceptual understanding.

Open Education Students' Perspectives on Using Virtual Museums Application in Teaching History Subjects

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Turkey

Abstract

The study was made to determine whether the attitudes of the open education students, will be changed or not by a virtual museum application. A pre-test / post-test experimental design model of was used in this research. The experimental group was comprised of 20 students. The pre-test was given to the group before the study and the post-test was administered at the end of the study. T-test analysis of the data was used to determine whether the attitude scores of open education students was changed or not based on their level of computer knowledge. In the qualitative section, students were asked open-ended questions and their answers were given in a frequency table. The data was analyzed in two phases. In the first phase, T-test, arithmetic mean ($\overline{X}$) and standard deviation (Ss) were used to analyse the pre-test and post-test data using the SPSS 11.0 statistical programme. The significance of the data was tested at the 0.05 level of significance. A significant difference in student opinion was found in data gathered to measure attitudes towards the history lesson after the application. The students had a favourable opinion of the virtual museum application in history lessons after observing the various documents and resources.

Keywords: distance education students, virtual museum, history subjects.

Introduction

A museum is important institution which provides detailed information about science, history, art, and life styles of ancient societies to enlighten people now and in the future. As Hetherington (2006) stated, a museum is a key institutional space of modernity implicated in addressing the changing character of experience in the present. A formal definition of museum comes from several sources. For instance, according to International Council of Museums (http1) a museum is a "permanent institution in the service of society and of its development, open to the public, which acquires, conserves, researches, communicates and exhibits the tangible and intangible heritage of humanity and its environment, for the purposes of education, study, and enjoyment". Another definition of museum is expressed as "Museums enable people to explore collections for inspiration, learning and enjoyment. They are institutions that collect, safeguard and make accessible artefacts and specimens, which they hold in trust for society." by The UK Museums Association (http2)

According to Giral and Dixon, (1996), museums provide images and information. The researchers stated that these images and information could be used by educational institutions for educational purposes. However, recent reports show that annual attendance at many museums is falling. Young people, often the museum's core audience, have markedly different attention spans compared to previous generations, and have radically different expectations. Many young people see museums as boring and irrelevant (http3). Therefore, according to Giral and Dixon, (1996), considering the falling rate of the annual attendance and the major desire of the museums to make their collections more widely known, publication of objects in electronic format provides students

opportunities to visit a museum and access images and information easily. Educators can also access these images and information from museum collections all over the world in electronic format and provide images for lectures, publication, and other teaching purposes (Giral, Dixon , 1996).

Virtual Museums

According to Swank (http), after the invention of printing, the internet (and the WWW) is the most important revolution in the world of human communication. In her critique, she stated that the transformative process from written world to a printed one and the implications of this new way of delivering information and creating knowledge was not immediately accepted nor fully understood by society, nor were the technological innovations used at their full potential. As Bowen (2002) stated, the web is being increasingly used by a wide variety of people, and in all important industrial and related sectors, such as broadcasting, newspapers, hospitals, police, government, etc. Like other sectors, museums have been learning to use the World Wide Web technology at a rapid rate since it has become widely available from the mid 1990s onward. In addition, research into learning and teaching with Internet technology has been widely recognised and discussed in recent years (Omale, Hung, Luetkehans and Cooke-Plagwitz, 2009). According to Omale et. al. (2009), one of the most exciting trends in the field of education is the development of 3-D virtual environments.

Twining (2009) stated that the virtual world provides the ideal vehicle for different models of education for two reasons:

- It allows you to do things which it would be difficult or impossible to do in the physical world—both literally and pragmatically. Pragmatically, it is difficult and expensive to set up a new learning community in the physical world than in a virtual world. Literally, there are things you can do in virtual worlds that are not possible in the physical world; such as flying like a bird (without even having to flap your arms).

- Our experiences of virtual worlds suggested that these are spaces which encourage playfulness and testing of boundaries.

According to Veltman (2001), while the earliest experiments with electronic media in the museum world go back nearly three decades, it is only in the last decade that computers linked via the Internet have become a serious topic. In addition, Novak stated that rapid development of technology results in the new paradigm of museum. Such new challenges as extended types and attributes of media require rethinking the conventional concept of museum (Kwon, Hwang, Lee, Lee, Suhl and Ryu (2003). As Sully (2006) wrote, after the Internet and computers became available, museums realized that they could use the new technologies, not only to manage their collections, but to make their collections accessible to other institutions and their onsite public. In addition, Swank (http) reported that these new technologies provided people with opportunities to visit a museum, the virtual museum, where people can interact with objects, create their own space, express their information needs and so forth.

With the use of new technologies mentioned above, Veltman (2001) stated that the Internet can offer virtual online exhibitions, which otherwise would not be physically feasible. He then emphasized that virtual exhibitions bring fascinating subjects in the sciences and humanities to life by combining text, pictures, video and sounds. These exhibitions can be used as resources for a multitude of subjects, such as history, art and environmental studies.

The creation of virtual museums (or digital museums), as Schweibenz (1998) stated, is a way to reach the audience in a new, more constructive way. A remote user can reach virtual museum services through the Internet with a personal computer. Virtual museums, generally known as

virtual libraries, are web sites that contain collections of digitized artefacts and information resources. They can contain text, photos, movies, audio files, maps, graphs, and links to other sites in the Internet (http4). Besides this general definition, Veltman (2001) gave two quite distinct definitions to the term, "virtual museum":

1. It can mean an electronic version of an existing physical collection. In the interests of clarity we shall call this a digital museum.

2. It can mean an imaginary museum without any necessary physical counterpart.

This second meaning has grown partly out of the vision of the French diplomat and author, André Malraux, who introduced the idea of an imaginary museum (*un musée imaginaire*) long before the Internet existed. André Malraux's famous idea about the imaginary museum without walls was presented in 1947. The main factor behind Malraux's questioning of the traditional role of the museum institution was the spreading of photography. The ever-present photographic reproductions of artworks made art accessible to audiences who would never have entered a museum (Huhtamo, 2002).

On the other hand, Lewis described the "virtual museum" as a collection of digitally recorded images, sound files, text documents, and other data of historical, scientific, or cultural interest that are accessed through electronic media. A virtual museum does not house actual objects and therefore lacks the permanence and unique qualities of a museum in the traditional definition of the term (in Schweibenz, 1998). According to Hoptman, the virtual museum provides multiple levels, perspectives, and dimensions of information about a particular topic: it provides not only multimedia (print, visual images through photographs, illustrations or video, and audio), but, more importantly, it provides information that has not been filtered out through traditional methods (in Schweibenz, 1998).

A virtual museum, according to Soren (2004), is a logically related collection of digital objects composed in a variety of media. A virtual museum has no real place or space and its objects and related information can be disseminated all over the world. Within a virtual museum are virtual exhibits in which individuals find their own meanings by using state of the art animation, sound, and search capabilities. A Virtual Exhibit provides an online entrance hall for a global audience in a presentation that brings to life the potential dynamism of objects and their stories.

Veltman (2001) stated that virtual museums cannot replace the experience of the original objects. However, he then expressed the twelve valuable purposes of virtual museums as follows.

- Stimulate persons to look more attentively at the originals in physical museums.

- Include other sensorial effects such as sound, touch, or even smell which would usually be inappropriate in a public physical museum.

- Orientate visitors to find paintings more quickly.

- Raise awareness of other works in storage.

- Contextualize objects.

- Visualize techniques used (perspective, *chiaroscuro*, *pentimenti*, etc.).

- Provide virtual restorations and reconstructions of paintings and sites.

- Bring together objects in a fictive space, which cannot be brought together physically and see works when there when there is no museum.

- Provide a virtual history of exhibitions.

- Provide a history of the museum.

- Show collections in distant sites.
- Show sites not open to the public.

A few research studies were conducted recently about online learning in the virtual museum (Castle, 2004; Goldman & Schaller, 2004; Maryse & Marion, 2007; Neill, 2008; Schaller & Allison-Bunnell, 2003; Soren, 2004). For instance, Maryse and Marion (2007) conducted a study that examined the way 125 teachers in Canada used the Internet and museum websites, also called virtual museums, to encourage student learning in history and social studies at the primary and secondary level. The results of this study suggested that Canadian teachers were making increasing use of the Internet in the classroom for the teaching and learning of these school subjects. This study showed that virtual museum websites provided supplemental learning resources for achieving the learning outcomes set out in the various educational programs across the country. According to Schaller & Allison-Bunnell, (2003), learning theory constructivism underlies much educational practice in museums and has come to inform the design of virtual museums as well. A fundamental curriculum change for elementary and middle schools occurred in Turkey in 2004. This fundamental change was based upon constructivist teaching and learning theories. In this curriculum reform, necessity of museum visits were emphasized and use of virtual museums in teaching was included in social science curriculums in middle schools.

Neill (2008) conducted a research focused on cultural heritage and aimed to produce a virtual museum of cultural heritage from ten countries in Europe to encourage users to develop an understanding of the cultural heritage of other European countries and to feel more European. He found that rural students were significantly more positive about the educational use of the virtual museums in the Internet, though their cultural attitudes were more parochial than those of urban students. Nah Tah Wash School in Michigan developed a virtual museum project in 2000. Upon completion of this project it was emphasized that the development and maintenance of a virtual museum is an ideal way to provide a student-centred, constructivist learning environment in schools. It allows students to make choices about what they want to study, provides meaningful topics that incorporate academics and culture. They also stated that a typical student assignment would be to select a topic, research it, write about it, and create a web page that demonstrates the knowledge that the student has gained in the activity. It was said that prospective virtual museum projects can come from visiting museums and libraries; researching topics for social studies, English or art classes; or satisfying a student's curiosity about a topic that involves his or her culture (http4).

Purpose of the Study

The purpose of this study is, to determine whether the virtual museum application affect the attitudes of the open education students towards the history lesson, will be changed or not by virtual museum application. For this purpose;

1. An experimental group was formed.
2. A pre-test was given to obtain the attitudes of the students in the experimental group.
3. A post-test was given to the students after the application.
4. Students were asked to express their opinions about the history lesson taught by the virtual museum application.

Method

The pre-test and post-test model of the experimental design was used in this research (Karasar, 2000). A group of 20 was formed as an experimental group. The group was asked to observe the official web-sites of the museums given below.

Name of Virtual Museum	Name of Museum in English	Source "EN"
Anıtkabir Sanal Müzesi	Anıtkabir Virtual Museum	http://www.anitkabirsanalmuze.org/
Anadolu Medeniyetleri Müzesi (360 Degree Panoramik Görüntüler)	Ankara Museum of Anatolian Civilizations (360 degree Panoramic Tour)	http://www.kultur.gov.tr/en/SanalTour/Ankara-AMM/index.html
Ayasofya Müzesi	Ayasofya Museum	http://www.kultur.gov.tr/EN/BelgeGoster.aspx?17A16AE30572D3130239EEA0FCDF038B6E95C5AED45E6A49
Konya Mevlana Müzesi (360 Derece Panoramik Görüntüler)	Konya Mevlana Museum (360 degree Panoramic Tour)	http://www.kultur.gov.tr/en/mevlana-eng/index.html
Mardin Müzesi (360 Derece Panoramik Görüntüler)	Mardin Museum (360 degree Panoramic Tour)	http://www.kultur.gov.tr/en/mardin_muze_english/index.html

The pre-test was given to the group before the study and the post-test was given to the group at the end of the study. Furthermore t-test analysis was made on the data to obtain whether the attitude scores of the open education students, will be changed or not according to their computer knowledge. In the qualitative section, the students were asked open-ended questions and their answers were given in a frequency table.

Data Collection

Qualitative and quantitative data was collected in October and November in 2009. Quantitative data was obtained by an "Attitude Scale" prepared for the virtual museum application in history lessons and qualitative data was obtained by "Open Ended Questions". While developing the "Attitude Scale"; an adaptation was made by benefiting from the items in "The Relations Between The Computer Experience of the Teachers and Computer Attitudes"(Deniz and Köse, 2003), "Computer Attitude Scale For Secondary Education Students" (Uzunboylu, 1995 (originally prepared by Jones and Clarke in 1994)), "The Attitudes of Teachers in Information Era: Elazığ Sample" (Özan and Erten,2005) studies.

The reliability study of the scale was made and The Cronbach Alfa reliability coefficient was found "0.86". There are 20 items in the scale. In the 5 point Likert type data collection tool in an interval scale the statements were assessed as "Strongly Agree=5; Agree=4; Neutral=3; Disagree=2; Strongly Disagree=1". The minimum score is 20; the maximum score is 100.

In the qualitative section "What did you enjoy most in the virtual museum application?" was asked.

While preparing the questions, opinions were invited from three IT class teachers, three social science teachers and five academic experts on social sciences and history instruction.

The "Attitude Scale" was given as pre-test in the beginning of the study and given as post-test at the end of the study.

The Procedure Steps of the Study:
After applying the pre-test to the students, they were given the chance of implementation for 2 months.

The Procedure Steps of the Experimental Group:

After the group was told about Atatürk's life and the importance of attaining information related to Atatürk, they were asked to get more information from this web-page: http://www.anitkabirsanalmuze.org/. A two-week time-period was given. At the end of the second week an application was made concerning the cultural and historical richness in Turkey.

Subsequent issues included a two-week application related with "Ankara Museum of Anatolian Civilizations (360 degree Panoramic Tour) http://www.kultur.gov.tr/en/SanalTour/Ankara-AMM/index.html;

A one-week application related with "Ayasofya Museum" http://www.kultur.gov.tr/EN/BelgeGoster.aspx?17A16AE30572D3130239EEA0FCDF038B6E95 C5AED45E6A49;

A one-week application related with Konya Mevlana Museum (360 degree Panoramic Tour); http://www.kultur.gov.tr/en/mevlana-eng/index.html;

A one-week application related with "Mardin Museum (360 degree Panoramic Tour)"; http://www.kultur.gov.tr/en/mardin_muze_english/index.html .

The students were asked to make virtual visits to these museums. The post-test was applied after this process. Then students were asked open-ended questions.

Data Analysis

The data was analyzed in two phases. In the first phase, an analysis was made of the pre-test and post-test using T-test, arithmetic mean ($\overline{X}$) and standard deviation (Ss) to analyse the data. Statistical procedures used the SPSS 11.0 programme. Significance of the data was tested at the 0.05 significance level. A Descriptive Analysis technique was used and data was summarized according to themes and quotations (Batı, 2004; Yıldırım ve Şimşek, 2005). Data relating to open-ended questions was analyzed as well. The frequency distribution of the answers was determined and quotations from 3 participants' opinions were taken.

Findings

A. The Quantitative Dimension Findings of The Research

Table 1
T values regarding application group's pre-test and post-test scores

	N	$\overline{X}$	Ss	df	t	p
Pre-test	20	68.15	5.414			
Post-test	20	84.75	3.978	18	2.417	0.000

When Table 1 for the question "Is there a significant difference between the students' pre-test scores' mean and post-test scores' mean?" is examined, a differentiation at a statistical significant level can be seen between the pre-test and post-test score (t_{18}=2.417, p<0.000).

The mean of attitude pre-test scores of the application students is ($\overline{X}$=68.15) and the mean of attitude post-test scores is ($\overline{X}$=84.75). According to this information, the attitudes of students towards history lessons were changed positively by the virtual museum application.

A significant difference emerged regarding the post-test data that measured attitudes of students towards history lesson after the application. The students had a favourable opinion on the virtual museum application in history lessons after observing various documents and sources.

Table 2
T-test result of open education students' attitudes
according to the knowledge of using a computer

Experience with computers	N	X	Ss	df	t	p
I know how to use a computer well.	15	87	3,41	28	1,213	,004
I know little.	5	78	2,38			

T-test result indicated that there is a significant difference in the attitude scores of the students on whom the virtual museum application were applied whether they know how to use a computer or not. (t_{18}=1.213, $p<0.004$).

The attitudes of the students who know how to use a computer well (X=87) are more positive than those who know little (X=78). This data suggests that there is a significant relationship between attitudes of the students who can use computer well and those with limited experience.

Considering the students' opinions shown in Table 3,, most frequently expressed opinion is "it was very enjoyable". Then students stated mostly that they couldn't realize how time passed, would like to see virtual version of all of the museums, found it a really useful experience and found rich visual images in virtual museums which are not accessible in most of the text books. Paralleling to these results, when we look at the detailed opinions of students in history classes, importance of the use of virtual museums can be understood better.

> Ş. D.: "*Virtual museum application was very good. I am sure that if we use virtual museums in all of the history lessons, most of the students like me would be more willing and they may not be bored during the lessons. We can easily remember the necessary information. I think the integration and application of virtual museums should be widened in all of the schools. We would have a chance to obtain information about cultures and histories of other countries, if there are virtual museums from other countries in Turkish.*"

B. A.: "*Virtual museum application was quite impressive. However, there are some deficiencies such as absence of information boxes prevented us from making assertions about the meaning of tools and objects that we saw. But we could still make some assertions. For example, drawings of deer and bison hunters and sharpened stones implied that humans were making their living by hunting and they couldn't use mines yet. In addition, statues of horse heads implied that horses took important places in human life in those ages. We saw hairclips and other kinds of jewelleries made out of stone. We can say that using jewelleries was important for women in those ages as it is now. We can make assertions about human life styles and their costume styles by looking at the human figures that we saw on the tablets. Many objects implied that humans in early ages made their living on agriculture and animal breeding. Therefore, virtual museums give us important information on humans' everyday life in early ages.*"

F. B. Ö.: "*Learning history is not just memorizing the given information in text books. Visiting historical places such as remains of old civilizations, looking at the objects belonging to those old civilizations and making sense out of those objects are very important for learning history. I saw a virtual museum for the first time with this application and I was very impressed with the virtual*

museums. I was able to move around and look at whatever I want while visiting the virtual museum in this study. I found a good chance to take a closer look at architectural works which express our history. Via virtual museum, I also found a chance to visit Anıtkabir Museum, located in Ankara, where I have never been physically. I was able to compare the content of virtual museums with Adıyaman Museum where I have visited physically before. I would like these kinds of applications to be widened."

Table 3
Student Opinions

Students' Opinions	Frequency
It was very enjoyable.	17
I couldn't realize how time passed.	14
I would like to see virtual version of all of the museums.	13
It was really useful experience for me.	11
Virtual museums provided opportunities to find rich visual images which are not accessible in most of the text books.	11
It would be better if there are audio features and more information about the objects in museums.	10
It would be better, if there are little boxes where we can find detailed information on objects when clicked on.	10
It is very important that the objects were presented in 3D.	8
People can visit many museums in a short time with the use of virtual museums.	8
I found a chance to see how tools and materials used by humans changed over time periods.	8
I think that all students need to see and do this kind of application.	7
Application of virtual museum in instruction increased my motivation in the class.	6
I realized that Anatolia has very valuable cultural heritage.	5
I felt like I was looking around in the actual museum.	5
It was very useful to move around by using arrow buttons.	5
Given plans about what we can see in the virtual museums were very useful.	4
I was able to make assertions about sources of living in the period that we were looking at.	4
I saw that many objects belonging to early ages together for the first time.	2
Bird's-eye view of museums should also be given.	2
With this kind of application I can obtain information about past without a teacher.	2

M.G.: "*I realized that virtual exhibitions and virtual visits are very important for learning related subject in history courses. With the application of virtual museums, I think, knowledge becomes more permanent, and I couldn't realize how time passed. 3D visuals were really nice. I wish all the museums in Turkey even all over the World were in virtual environment. In this way, humans can know different cultures and this may bring peace and tolerance to the whole World. I personally would like to express my thanks to Turkish Ministry of Culture and Tourism for providing us such an opportunity.*"

Conclusion

Using technology is necessary in teaching in order to apply alternative teaching methods for modern education and make lessons more productive. In this study, it was clearly seen that these kinds of applications were very useful and effective in terms of student involvement in learning process more actively. Since 2004, with the integration of constructivist learning theories, educational technology has been used in classroom teaching in Turkey. This opened a new page in education in a positive way.

The students implied that the study was very useful and enjoyable and their motivation was quite high during it.

These results indicated that using virtual museums in teaching history subjects can enhance students' motivation and conceptual understanding. According to results of this study, followings are the positive aspects of using virtual museums in teaching:

Existence of objects in 3-dimensional mode,

It has positive effects on students' motivation,

Many museums can be visited in a short time,

It gives an opportunity to employ student-centred teaching methods,

It gives an opportunity to see many historical objects and to make comparisons among them,

Existence of plans showing different parts of the museum,

Existence of rich visual images which are not accessible in most of the text books.

According to results of this study, followings are the negative aspects of using virtual museums in teaching:

There is no detailed information on objects exhibited in virtual museums,

Video features are somewhat poor,

There is no bird's-eye view of the museums,

There is no audio information system on the objects,

Students participated in this study stated that they used the virtual museums for the first time and they also said that the study was very effective. Students' opinions clearly showed that using virtual museum in teaching history subjects had positive effects on students' motivation.

Conclusions and Implications

These kinds of activities should be applied in the schools.

Students may want to have prior information about museums. In order to develop perspective of common heritage, virtual museums should be used effectively.

Students should have sufficient prior knowledge about the subjects.

Recent developments in educational technology should be followed and these modern technologies should be used in history classes.

Schools should be equipped with computer and internet technologies in order for students to make virtual museum applications.

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Using Flip Camcorders to Create Video Feedback: Is it Realistic for Professors and Beneficial to Students?

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Abstract

Social presence is critical for an instructor to establish in a course. Research shows that students who believe that a professor cares about them are more likely to connect with the material as well. Many avenues for creating that atmosphere exist including using audio feedback and leveraging social networking technologies. Until recently, customized video feedback was too cumbersome to be created and distributed by mainstream professors. This study examined the use of a Flip camcorder to provide instructor-created, customized feedback in a research methods graduate-level course conducted both on-line and face-to-face. Preliminary results indicate that the process was beneficial to students and reasonable for professors to accomplish.

Keywords: video feedback, social presence, teaching presence, higher education, educational technology, Flip video, multimedia.

Introduction and Background

"We lose so much in the written word …" (Ice, Curtis, Phillips, & Wells, 2007, p.12) is a poignant statement made by an instructor participating in a study on the affects of audio feedback in college courses. What exactly it is that we lose, though, is a harder question. In terms of educational exchanges, it could by hypothesized that 'it' may refer less to information, and more to a sense of connection between people. It is a commonly held principle that people who feel that their human needs are being addressed, are in turn more likely to be in a mindset to learn (Dunlap & Lowenthal, 2009; Newberry, 2001; Roblyer & Ekhaml, 2000). According to Shea, Pickett, and Pelz (2003), student-faculty interaction is one of the strongest predictors of both satisfaction with a course and perceived learning of material. This idea is expressed through the concept of social presence, which was first coined by Short, Williams, and Christie in 1976, and has become the theoretical foundation for many studies (Dunlap & Lowenthal, 2009; Ice, Curtis, Phillips, & Wells, 2007; Swan, 2004). The term has evolved to refer to the ability of people to convey a sense of themselves – in essence to become 'real' - to another person through media (Lowenthal & Parscal, 2008). Other theorists have built upon this idea and consider teaching presence to work in concert with social presence in educational arenas. Teaching presence deals specifically with the ability of instructors to create an atmosphere that addresses students in a personal and meaningful manner (Garrison, Anderson, & Archer, 2000). It can be further asserted that a healthy social and teaching presence will often lead to the development of a strong cognitive presence, or learning atmosphere, which together form the overall educational experience (Perry & Edwards, 2005).

Researchers and faculty members alike have investigated ways to increase social and teaching presence in both face-to-face and on-line classes. Although some recent investigations have used modern styles of instant, written communication such as cell phone texting (DuVall, Powell, Hodge, & Ellis, 2007) and twitter posts (Dunlap & Lowenthal, 2009) as an avenue to achieve this goal, the more common approach has been to move beyond the written word to other media

formats. In a study conducted by Ice, Curtis, Phillips, & Wells (2007), audio feedback was given in lieu of text only feedback for an on-line course. Through interviews and unsolicited emails, the researchers found that students perceived audio as being more personable and having a better ability to convey nuances. One student put it this way, "I think the audio shows that you cared about us … That's a warm fuzzy I haven't gotten with online classes before" (p.16). Students also were more willing to act on suggestions made by audio than text. Perceptions that the instructor was caring and supportive were similar to the comments gleaned from earlier studies that used personal audio feedback distributed on cassette tapes or through internet-based voice mail messages (Ice, Curtis, Philips, & Wells, 2007). It should be noted that other investigators (Kelly, 2009; Swan, 2004) have studied the use of non-personalized audio explanations, such as voiced-over screencasts to enhance social presence as well. Although arguably not as powerful as individualized audio messages, students still expressed positive perceptions of these efforts.

If audio is beneficial, then it stands to reason that video might be as beneficial or even more beneficial for increasing social presence. However, there is a very limited amount of information to test that idea in the literature due to the complex nature of creating and distributing video that prevailed until very recently (Moore & Cadwell, 2009). Typically the potential a process (such as video feedback) has for impacting students has to be tapered with the time, skill, and financial restraints of the professor to implement that process. If a technology poses too much of a challenge, it will be abandoned as evidenced throughout the history of educational technology in K-12 schools and higher education alike (Bauer, & Kenton, 2005).

Still, there are isolated examples of studies that successfully use instructor created video messages. For example, Rose (2009) detailed the steps she took to create short videos to enhance both her on-line and face-to-face classes along with student responses collected via surveys. She used a webcam as the video recorder and then edited and compressed the footage with iMovie software. The resulting videos were posted on You Tube and subsequently embedded in the course webpages. Topics typically included introductions, exam reviews, lecture highlights, and demo type videos. Surveys revealed that 100% of the students perceived the videos helped them know the instructor and the materials better. Written comments centered around an appreciation to the instructor for taking the time to create the videos and make a connection with students. In addition, 67% of the students, across both course formats, reported watching the videos multiple times (Rose, 2009). It is significant, however, that an entire appendix was devoted to tips for helping faculty create their own videos including how to install a web cam, how to use editing software, and how to use the html-generated code from You Tube to embed the videos in a web page or course management system. For many professors these steps pose a major stumbling block to using video in a course. Professors of Romance Literature, on the other hand, have experimented with using Flip Camcorders in their course and reported that very little technical training or support was required (Moore & Cadwell, 2009). The videos in this study were not used for students, but rather to record students speaking a foreign language so that instructors could evaluate their competencies.

Although a study detailed above (Rose, 2009) examined student perceptions of instructor-created video, those clips were not individualized. The videos were mass distributed to the class via the course management system and were available for everyone to see. This study differentiates itself from those previously conducted by focusing on customized video feedback that focuses on specific assignments. Additionally, this study not only endeavors to study the impact of video feedback on students, but to study the process from an instructor's perspective in terms of the technical considerations. Thus, it seeks to expand on the study by Moore & Cadwell (2009) by using Flip Camcorders not only for recording but for distributing videos to students to ascertain if it is realistic for non-technical faculty members to incorporate the process into classes on a routine basis.

Methods

The purpose of this study was two-fold. First, the researchers sought to determine what impact, if any, the videos had on students' perceptions of the class and the instructor. Second, the investigators wanted to see if it was a manageable activity for the professor in terms of the video production and distribution. The course selected for this study was a graduate level research methodology course taught by the second author over a summer session. The class was conducted using a hybrid approach that approximated 50% internet and 50% face-to-face time. The researchers felt it was important to select a professor whose field of expertise was not technology but rather another discipline, in this case research methods, in order to examine the potential for use among faculty who do not consider themselves tech savvy. Likewise a hybrid course was chosen in order to better examine whether or not the presence of video feedback was useful to the students both in terms of strengthening the connection with the professor and learning the course material even though in-person contact was also occurring. Twelve students participated in the class and subsequent study.

Prior to the semester starting, the instructor was given a Flip video camcorder and a personal desktop tripod. She was previously unfamiliar with the device and was not provided any training on how to use it although she was sent a sample email from the lead author to demonstrate the video quality. The Flips are designed to be simple not only to operate but also to share videos with other people. It connects through the standard USB port for the purpose of recharging and uploading video. Software, that launches automatically when the Flip is plugged into any computer, instantly allows the user to share the compressed video through a variety of avenues without any editing required through a user-friendly interface. By clicking on the email option, which was used for this study, the video was sent directly to a student's email account.

A sequence of three assignments was given to the students. The first one required them to create a problem statement about the research topic for the semester. This paper was printed and the instructor made comments and suggestions on the hardcopy which was then returned to the student. The second assignment was to write a literature review plan on the chosen topic. This paper was printed and the instructor again made comments and suggestions on the hardcopy. This time, however, the instructor also created a personalized video for each student that explained the remarks made on the printed copy. The videos were approximately five minutes in length and were distributed shortly before the hard copies were returned to the students. The final assignment was for the students to generate a research design plan for the topic and submit it via email to the instructor. Although comments were initially recorded on printed copies, those pages were not returned to the student. Participants received feedback on the assignment only through the individualized video that was sent to them. This video was also approximately five minutes in length.

At the end of the semester, the instructor was interviewed for approximately thirty minutes and the student participants were asked to complete an on-line survey. The lead author met with the students in a computer lab adjacent to the regular meeting room and asked them to fill out the survey which consisted of both direct questions and open-ended responses. The data was not shown to the instructor until after grades were submitted for the session and no names were associated with the responses.

Analysis

Analysis of the data must be dealt with both in terms of the student experience and the instructor experience. In reference to the latter, an interview was conducted to find out about her perceptions of using the Flip camcorder to provide individualized feedback to students. She stated that she is usually intimidated by using new technologies, but the simplicity of the process

made her feel comfortable very quickly. She also reported feeling initially nervous about creating videos of herself, but gained confidence as the semester progressed. When asked to discuss any technical difficulties that she had during the project, the instructor listed only two minor annoyances but no major problems. The two things that were frustrating was the lack of a pause button during the recording phase and one crash during the upload phase. If she was interrupted for any reason, she had to re-make the video or send the file in halves to the student which she choose not to do. In the case of the upload crash, she just had to restart the software.

She felt that it was easiest to create the videos a couple at a time so that the feedback information that she wanted to convey to a particular student was fresh on her mind rather than using a batch creation approach. In the future, she would say the student's name in the greeting on the video rather than just 'hello' for the purpose of rapidly identifying the videos on the user interface rather than relying on sequencing. This professor also explained that she was able to convey much more through the video than through the written comments especially in terms of encouragement and praise for parts of the assignments which she might have simply marked 'good job' on a hardcopy. She said she could elaborate and give more detail than she has been able to previously.

When asked if she received any informal feedback, she said that several students told her how much they appreciated the videos, but one person stood out in her mind. This student never talked during the face-to-face meetings, but sent an email immediately after the first video saying it was helpful and continued to appear more engaged after that. Another student told her that the videos had made such a big difference that she was going to show them to her principle for possible implementation at her school. The last question posed to the instructor was if she would continue using video feedback in her classes now that the study was completed to which she responded in the affirmative and said it was a positive, fun experience that she felt was worth her time because of the benefits to the students.

Turning now to the student surveys, the researchers downloaded all responses and comments entered into the on-line form. All participants reported having a high-speed internet connection at the location where they watched the videos. Of the twelve subjects, eight were majoring in 'Teaching and Learning', two were majoring in 'Educational Technology', and the remaining two were non-degree seeking. When asked if the videos were easy to retrieve and watch, 100% responded that they agreed (33.3%) or strongly agreed (66.7%). Likewise, when asked if the technical quality of the video was acceptable in terms of sound, size, and clarity, 100% responded that they agreed (58.3%) or strongly agreed (41.7%). A finding in the data that was especially noteworthy was the manner in which students used the videos. All but one participant reported that they watched the video multiple times.

Table one shows student response to selected statements regarding assignment feedback. The percentage of students who strongly agreed that feedback was easy to understand and beneficial to learning the material increased slightly when video was introduced as the medium to convey comments. More strikingly, however, was the positive change in the number of students who reported feeling as though they had a closer connection to the professor after the feedback moved from written to video-based. Only 25% experienced that connection during assignment one, but the number jumps to 83.3% after assignment two that incorporated video feedback. Interestingly, the students sensed that the instructor cared about their performance from the very start.

The responses to the open-ended questions on the survey perhaps provide an even clearer picture of the attitudes and perceptions of the students. Eleven of the twelve subjects wrote remarks about the study and all but one was positive, with the outlier citing poor sound quality as a stumbling block to the video usage

Table 1
Student Response to Feedback

Statement to Evaluate	Percentage of Students who Strongly Agree		
	Assignment One Hardcopy Only	Assignment Two both Hardcopy & Video	Assignment Three Video
Feedback on this assignment was easy to understand.	66.7%	83.3%	91.7%
The feedback on this assignment was beneficial to my learning of research methods.	75%	83.3%	91.7%
I felt the instructor cared about my performance on this assignment.	91.7%	91.7%	91.7%
I felt like I had a closer connection with my professor after receiving feedback on this assignment.	25%	83.3%	91.7%

The following excerpts are representative of the remaining responses:

I really like the video feedback. I better understand what corrections need to be made, but most importantly WHY I need to make them. I love how I have access to them later.

This was such a neat way of getting feedback. It's like having that one on one time with the instructor that you need without the whole class knowing your business!

I found the video was easier to follow along with. Looking at all the corrections on the paper was a bit overwhelming and the video forced me to take them one at a time.

I thought the video feedback was a great idea. It was more personal than just a corrected paper, and you have the benefit of referring back to it.

Through this video feedback I felt more connected to my professor, that she knew me personally, and that my response to assignments were important to her. One aspect of this video feedback is that that the person making it becomes viable and approachable to the receiver.

Conclusions and Discussions

The goal of this study was to determine if personalized video feedback with a Flip camcorder was realistic from the professor's view point and/or beneficial from the students' view points. Based on the data collected, it appears that this approach is both simple enough to not be a burden on the faculty member, but powerful enough to have a positive impact on students. A major limitation of this study, however, is the small sample size. The authors recommend this line of inquiry be continued with additional studies that include a larger number of participants and a wider variety of instructors. For example, while it may be practical to implement video feedback in a small graduate class, it may be difficult to replicate the success in undergraduate courses with a large number of students.

Two distinctive themes emerged from the findings that should serve as a catalyst for future research. First, the students valued the video for its permanency. Overwhelming, the participants reported that they watched the videos multiple times which is consistent with the findings of Rose (2009). Second, the value of the feedback goes well beyond increasing knowledge in the content area. The actual primary benefit of the videos appears to be in developing the bond between instructors and students who reflected that the clips created an atmosphere of caring. Since the course in this study was of a hybrid nature, the students had a dual opportunity to connect with the instructor both in person and through the personalized videos. It is possible that the videos would have an even more dramatic impact on students who were taking an on-line only course where they never met the professor face-to-face.

The Flip camcorder was chosen as the tool for this experiment because it offers what most video equipment does not – simplicity especially in terms of the uploading/sharing process. Until very recently, if a person wanted to use video it was a cumbersome process of recording the clips, transferring the material to a computer, using editing software to compress the video into an appropriate format, and devising a way to deliver the file to the recipient. In practice, very few professors wanted to take the time to learn those skills. The availability of tools to automate these tasks, however, is increasing; thus, it is recommended that this study be duplicated with other user-friendly video recording devices such as an iPhone which will also transmit compressed videos via email without any editing. In general, research in the area of teacher-created, personalized video feedback is one that has the potential to lead to improved educational experiences for students and professors.

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Knowledge Management Cycle:
A Case Study at Institute of Management Research & Education (IMRE)

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Abstract

In the uncertain environment of today's organizations, change is an indispensable quality, and success requires the knowledge management cycle to be properly implemented. The 'knowledge' competitive advantage will be reflected it in their goods and services.

In this article, status of the knowledge management cycle is studied and a model is introduced for knowledge management in companies. Nonaka's five-loops model for the knowledge management cycle (knowledge creation, knowledge organizing, knowledge sharing, knowledge applying loops) is used and five research question is examined.

The results in this study indicate that IMRE scores highest in the loop of knowledge creation and lowest in the loop of knowledge organizing. These findings can be applied for improvement of loops and better correlation among them.

Keywords: knowledge management, knowledge management cycle, knowledge creation, knowledge organizing, knowledge sharing, knowledge applying loops.

Introduction

Knowledge management is a movement to upgrade a company's abilities, help it to preserve competitive potential, and reflect its knowledge in goods and services. On the other hand, through knowledge management, the knowledge fund is reserved and not lost by employee turnover (Nonaka, 1991, p.96).

The status of knowledge management in organizations reveals that they act poorly in the loops of knowledge management cycle: they do not value knowledge creation, easily lose the knowledge they already own, forbid knowledge sharing, and do not invest in knowledge. And most important, because of lack of proper knowledge organizing, they are not aware of what they already know (Polani, 1966, p14).

How is knowledge defined? What are the components of its loops, including creation, organizing, sharing, and applying? In which way are they correlated? Next in this article, is a review of the literature and research methodology. The data is analyzed and conclusions are presented.

Literature Review

In this section, the knowledge management cycle is examined and definitions are presented for knowledge, knowledge management, and the knowledge management cycle.

Knowledge and different aspects of knowledge

Davenport and Prusak (2000) define knowledge as: the dynamic and smooth flow of specialized experiences, values, and insights. In organizations, knowledge is hidden in documents, reports,

files, procedures, norms and even values. Attempts to grasping hidden organizational knowledge may achieve better competitive advantage.

Yale Rumer defines knowledge as an endless source of power which, through application, increases in volume and depth. (www.moesmea.gov.tw)

Knowledge is a human capacity. What exists in files, documents, or videos, is not by itself knowledge. It is organizing, sharing, and applying, that turns information into organizational knowledge. Knowledge creation is very time-consuming; through proper organizing, it can easily be shared. It should be noted that this knowledge is useless unless applied by members of the organization (Our Competitive Future- building a knowledge driven economy).

Drucker (1999) introduced explicit information and knowledge as a resource for organization and Senge (1994) pointed to learning organization, which is the cultural dimension of knowledge management (Drucker, 1995, p. 238).

To Nonaka (1994), in every company there are two kinds of knowledge: tacit knowledge and explicit knowledge. Tacit knowledge consists of one's mental models, beliefs and opinions, and is rare, irreplaceable, inimitable, and precious. Knowledge sharing changes tacit knowledge to explicit knowledge. Explicit knowledge is a kind of knowledge which can be defined and shared easily through information technology.

According to Subi, every kind of knowledge is either tacit, or has its roots in tacit knowledge. He believes as well that tacit and explicit knowledge complete each other.

Mac Loop (1994), classifies knowledge into six types: practical knowledge, mental knowledge, amusement knowledge, abstract knowledge, and ordinary knowledge.

Ghashal (1995) considers three types for knowledge: practical, experience-based, and theorical knowledge. Rale (1994) believes knowledge to be procedure knowledge, and know how knowledge (Jashapara, 2004, p. 158).

The Emergence of Knowledge Revolution to Drucker

To Drucker, the meaning of knowledge radically changed in 1700, which itself led to birth and emergence of four revolutions: the industrial revolution (1770-1880), productivity revolution (1881-1960), management revolution (1960-1995) and during the 1990's, simultaneous impacts of the Internet and Digital revolutions, led to emergence of fourth revolution which is the knowledge revolution (1995-on-going). It was through this last revolution that companies became aware of the importance of "becoming aware of what they know". Companies grasp this fact that without proper knowledge management, knowledge utilization would be impossible. And before knowledge documentation, and proper organizing, companies were not able to become aware of their knowledge gap.

Knowledge Management Definitions

- knowledge management is methods, tools and techniques by which knowledge may be created and shared. This knowledge is a capital through which profitability and productivity is achieved, and better goods and services concerning quality are presented.

- knowledge management is sharing what we know with others. www.dod.mil/learn/knowledgemanconcept.htm.

- knowledge management is the ability to acquire, record and access knowledge, for gaining competitive advantage.

- Swan et al (1999) define knowledge management as every activity of knowledge creating, sharing, and applying for the purpose of better learning and improved performance (Jashapara, 2004, p. 12).

- Vite (2000) believes that knowledge management is to acquire right knowledge, from right context, in the right time ([Our Competitive Future- building a knowledge driven economy](#))
- Jashapara defines knowledge management in the form of a four-looped process as: effective learning process blended in creation, organizing, sharing (both tacit and explicit) and applying knowledge, which leads to upgrade of organizational intellectual capitals and performance improvement (see Figure 1).
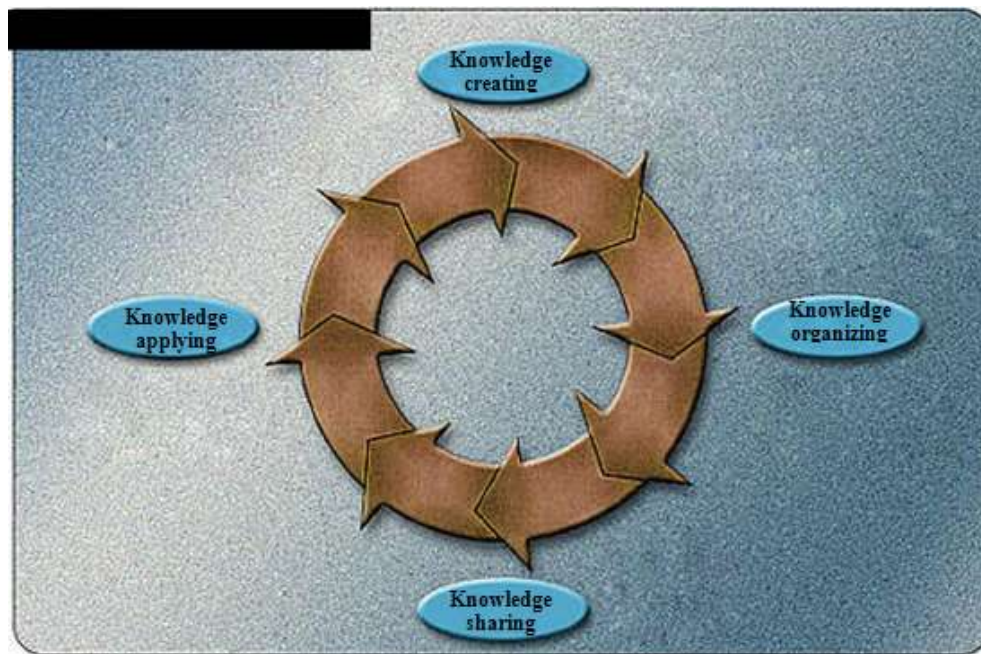

Figure1: Four-looped Knowledge Management Cycle
(Jashapara, 2004, p. 12)

1. *Knowledge Creating*

Knowledge creating is an endless process which includes creating novel ideas, grasping new paradigms, and combining isolated principles for establishing new processes. Libraries and Departments for Documents are central resources for knowledge creating (Nazari, 1382, pp. 262-263).

2. *Knowledge Organizing*

This loop of knowledge management cycle refers to storing, recording, and preserving knowledge in formats and frames which let other employees regain it. In fact, knowledge organizing is prerequisite to knowledge sharing. In other words recording knowledge within folders and intranets, provides capacity for knowledge sharing (Radring,2003,pp178-189).

3. *Knowledge Sharing*

Knowledge sharing is the mutual knowledge flowing and scattering among people and mechanical and non mechanical bases for knowledge. In fact, 90% of the knowledge management success depends on right knowledge sharing. In other words, the effectiveness of knowledge management cycle relies on the abilities of people for knowledge sharing. It should be noted here that culture has a significant role for a fruitful sharing of knowledge. The establishment of a culture where "sharing knowledge is power instead of knowledge is

power", has a great influence on the success of knowledge sharing in knowledge management cycle (Radring, 2003, pp. 160).

4. *Knowledge Applying*

This refers to application of knowledge shared, without any bias or prejudice against the one who is the source of that knowledge. This loop refers to blending of knowledge with action and its emergence in company's goods or services (Kwakman, 2004, p. 150).

Research Topic Definition

Institute of Management Research and Education (IMRE) is affiliated with the ministry of energy founded in 1994 with the mission of training and educating managers who are responsible for critical and important duties of the ministry. The vital role of the ministry of energy in Iran's industrial and economic development and the role of its managers in meeting these goals, reveal the critical importance of IMRE in the ministry of energy. The main branches of IMRE's activities are long term courses, seminars, work-shops, development and promotion courses which are designed and executed according to the training needs of the water and power industry.

In this research, the state of knowledge management cycle is examined through the four-looped model, and suggestions based on the conclusions are presented.

Importance and Necessity of Research

Concerning the importance of knowledge management and its benefits and advantages in the companies, this research centered on the survey of knowledge management cycle in a pioneer company (as a sample), that is IMRE. Then suggestions based on gained results presented in order for improvements. Furthermore the model applied in this research can be used as a framework for knowledge management cycle survey in other organizations.

As this research helps to know more about the knowledge management cycle, its loops, and other knowledge management related topics at IMRE, so it has cognitive functions. And as this research can be used for introducing knowledge management cycle, its loops, and benefits in other companies, it possesses applied functions as well.

Novelty of topic of research in Iran's companies and her interest in the field of knowledge management, led the author to perform the research.

Research Questions

Research questions in this research concerning the expected results can be divided into two parts: first establishment of knowledge management through complete survey of the population, and second the study of research literature in order to getting acquainted with and then master the new fields of knowledge. The questions examined in the statistical society are as below:

1. What is the status of the knowledge creating loop at IMRE?
2. What is the status of the knowledge organizing loop at IMRE?
3. What is the status of the knowledge sharing loop at IMRE?
4. What is the status of the knowledge applying loop at IMRE?

Research Analysis Model

Concepts should have empirical indicators to be applicable. Concepts are only tools for quick understanding of issues. They are abstract summaries of behaviors and attitudes.

Conceptualization is more than a mere definition or presenting some series of technical words. Its main objective is to make it easier to understand a real object. Therefore, in conceptualization, not all aspects of reality are taken into consideration. Instead, its main and critical aspects are presented. The first step is to determine its dimensions. The next step is defining indicators through which one can measure dimensions of a concept. In most cases in social sciences, concepts and their dimensions are not measured by their observable signs (Rymon & Campenhood, 1999). The analysis model of research is presented as table 1.

Table 1
The Analysis Model of Research

Dimension		Indicator making
Knowledge creating	Enthusiasm to upgrade personal knowledge, enjoying monetary benefits for acquiring more knowledge, personal tendency for benefiting learning opportunities, having a system for training employees, personal tendencies towards continuous learning, awareness of company about its best experts in each field, sensitivity towards attracting and preserving knowledge-based employees, the consensus of knowledge- based employees about company's HRM policies, employees' personal investment on learning, the degree of which higher management motivates employee for creating knowledge.	How much you are worry about upgrading your knowledge in the future? To what extent does more knowledge means more monetary benefits in your organization? How much are you personally inclined to benefit from learning opportunities? Is there any systematic trend for training employees? How much do you exploit from learning centers (seminars, conferences) for upgrading your daily learning? How much is continuous learning a priority for you? How much the management does know his best experts in the organization? How much is preserving knowledge-based employees a priority for the higher management? How much does the higher management provide learning opportunities for employees? Reflecting your knowledge in the duties, how much does effect on your receipts? How much are the holders of strategic knowledge satisfied in your organization? How much the benefits of being knowledgeable motivate you to acquire more knowledge? How much more knowledge in your organization does mean just more hard work? How much more benefits resulting from knowledge, motivates you to acquire more knowledge? How mush is preserving knowledge-based employees a priority and systematic in your organization? How much do you invest on your knowledge upgrade? To what extent you are proud of yourself for presenting a scientific article? To what extent you are proud of yourself for translating a scientific article from a foreign language to your mother tongue?
Knowledge organizing	Continuous review of personal experience (employees), the degree of recording personal experience, distinguishing information gaps, personal knowledge organizing, attempt for classifying individual knowledge, the accessibility of people to knowledge resources.	To what extent can you precisely describe what you've learned? How much do you record whatever you have acquired as knowledge? How much do you review your experiences for learning more? To what extent is your received information is incomplete? To what extent is your information accessible to your colleagues? How much are information gaps known at your organization? How much are you obliged to review a thick volume of information to reach your needed knowledge? To what extent do you consider your duty to organize your knowledge? Is there any information system at your company for organizing knowledge? To what extent do you receive your needed information exactly when needed? How much are aware about the knowledge resources at your company?
Knowledge sharing	Management encouragement knowledge sharing, accordance of information systems with right knowledge sharing, strong culture for knowledge sharing, in time announcement to employee about new knowledge sources (on side of librarians), flow knowledge sharing among functional divisions, a powerful internet network, the status of knowledge sharing from top to down(of organization), the status of knowledge sharing from down to top (of organization).	When employees need information, to what extent do they receive it in time? How much does higher management does motivate employees to share knowledge? How much automation system is suitable for knowledge sharing? to what extent is knowledge sharing admired by majority of employees? How much do librarians distribute needed information? To what extent does the continuous flow of knowledge sharing among functional divisions exist? How much the flow of knowledge from top to down (management to employees) is appropriate? How much the flow of knowledge from down to top (employees to management) is appropriate? To what extent needed information about employees is available to him? How much the internet status is appropriate for knowledge sharing? To what extent does the higher management provide the opportunity for others to make use from your created knowledge?

Dimension		Indicator making
Knowledge applying	Personal enthusiasm for knowledge application, the degree of personal learning applied from training courses, a strong culture applying knowledge, the existence of systematic processes for using individual knowledge in organization, the degree of knowledge interference in goods and services, employee desire for making activities knowledge-based, management enthusiasm for applying knowledge by employees, benefiting the experiences of projects(on the part of organizations)	How much do you ask yourself, ' how can I apply what I've learned? To what extent are you anxious about putting your knowledge into action? To what extent do you apply what you've learned from training courses? How much there is preference for knowledge application? To what extent are systematic trends applied to organizational knowledge? How much do you reflect your knowledge in your work? To what extent is organizational knowledge and competencies reflected in products and services? To what extent is there a system to apply knowledge? Are employees inclined to make their jobs more knowledge-based? How much does higher management try to apply what has been learned from projects?

8- Research Method

The method used in this research is the survey method. It begins with a question about the present status of the knowledge management cycle. In order to answer this question, an exploratory study was performed using various resources. The research theoretical framework is based on Jashapara's model. Then questionnaire which is the main tool of researcher was designed based on theoretical studies, doing a pretest, and final test. The data was analyzed and answers to the research questions presented.

9- Information Gathering Method

The information gathering method in this research is as below:

- Library research for specialized books and publications; internet searches (information websites) to determine other researchers' attitudes, theories, hypotheses and findings.

- Observations, documents surveys, and interviews with the managers and experts.

- Questionnaire as the main tool for collecting information

The Questionnaire Distribution

The IMRE employees (office employee with diploma, experts, supervisors, middle and top managers, and faculty members) are the members of statistical population of this research. For this purpose 55 questionnaires were distributed and 48 questionnaires were returned with responses.

Validity and Reliability

In order to determine content reliability of questionnaire and research hypothesis, the questionnaire was delivered to some professors and organizational experts for review. Their views were used for editing and finalizing the questionnaire.

For its validity, 20 copies of the questionnaire were distributed among the members of the population. And then Alpha Kronbakh was computed through SPSS software. As a result it made clear that changing some questions would increase the validity of questionnaire. After that, the validity of questionnaire was confirmed to be 90.6 percent.

Statistical Population (Location of Research Study)

The statistical population in this research is from the Institute of Management Research and Education (IMRE). Diversification of tasks, expert employees with higher education degrees (who increased both reliability and validity of the research), commitment and support of higher management and other top managers, and their acquaintance with research activities. IMRE's role as a pioneer in fields such as customer-orientation, quality, training, technology, and information systems, made the choice of IMRE appropriate for this research. Therefore, the statistical population is IMRE: 70 employees including office employee with diploma, experts, supervisors, middle and top managers, and faculty members.

Data Analysis Methods

In order to examine reliability of questionnaire, the alpha Kronbakh test was used. The data analysis method was descriptive analytical, and data analyzed by SPSS software. In order to examine the research hypothesis and for correlation between answers and their personal qualifications, the Chi-square one-way variance test was used. Statistical methods are summarized below:

1- Frequency distribution, percents figures and diagrams for determining the present status of the knowledge management cycle.

2- One way variance and Tuki test for testing the correlation between respondees and their aspects.

3- Correlation coefficient for correlation between loops of the knowledge management cycle.

Research Data Analysis

General Questions (Personal Qualifications)

Education level

The greatest frequency concerning education level among respondees was holders of bachelor degrees, that is 43/8%, the least frequency belongs to holders of doctoral degrees, which is 8/3%.

Field of education

20.8% of respondees have been educated in management and 79.2% human and basic sciences.

Age

The greatest frequency is 68.7% for age group 40-20; the least, 4.2%, for the age group 60 and over.

Years of service

The greatest frequency is 31.3% for respondees with 2-5 years of service; the least is 4.2% for those with less than one year of service.

Place of work

The greatest frequency concerning the place of work, belongs to people in the Deputy on Educational Affairs, that is 39.6%.

Specific Questions

The frequency of each question examined, the average frequency of questions related to knowledge creating, organizing, sharing and applying, and who chose alternatives 'much' and 'very much' are reported in Figure 2.

Figure 2

The Average Frequency of Answers to Questions of Each Four Loop

Loop name	Knowledge Creating	Knowledge Organizing	Knowledge Sharing	Knowledge Applying
Frequency percent of 'much' and 'very much' alternatives	41%	42%	32%	40%

The survey data in Figure 2 provides answer to the research questions:

1- What is the present status of knowledge creating loop at IMRE?

   41% of respondees chose the alternatives 'much' and 'very much' to questions concerning the knowledge creating loop.

2- What is the present status of Knowledge organizing at IMRE?

   42% of respondees chose the alternatives 'much' and 'very much' to te questions concerning the knowledge organizing loop.

3- What is the present status of knowledge sharing loop at IMRE?

   32% of respondees chose the alternatives 'much' and 'very much' to questions concerning the knowledge sharing loop.

4- What is the present status of knowledge applying loop at IMRE?

   40% of respondees chose the alternatives 'much' and 'very much' to questions concerning the knowledge applying loop.

Anova Variance Test

In order to examine the relation between personal qualifications of respondees and respond to questions related to creating, organizing, sharing, and applying loops, the Anova test was used.

In the creating the knowledge loop, people with 2-5 years of service had the lowest 'very much' response while people with 16 and more years of service had the highest response for the 'much' alternative.

In the organizing loop, people with 2-5 years of service had the lowest response for the 'very much' alternative. Those with 6-10 and 11-15 years of services were highest for the 'much' alternative.

In the sharing loop, there is a meaningful relation between people age and choice of fourth alternative. People with age 51-60 years most often chose the 'less' alternative.

In the applying loop, people with 51-60 years age, chose the "less" alternative.

Nonparametric Test of Correlation between Loops

In order to examine the correlation among loops of knowledge management cycle, and response to the fifth question of this research concerning the correlation among loops of the management cycle, a nonparametric test used. Results show that people who believe knowledge creates in a

high level, do not believe at the same amount that knowledge is applied. In other words, there is no meaningful correlation between knowledge creating and applying at the 95% confidence level.

Recommendations Based on the Research Results

Knowledge Creating Loop

The results of this research show that yhe majority of respondees are concerned about upgrading their knowledge in the future. Continuous learning is a priority for them, and they personally desire to pursue available learning opportunities. On the other hand, 64/6% of respondees believe there is very little systematic trend for employee education. And 33% think that management should provides such learning opportunities for its people. Thus, it is suggested to establish a systematic trend for employee training.

To 14.6%, management evaluate much the knowledge upgrade of its employees. 77.1% of respondees would feel proud to write an article or translate one. 21.3% personally send articles to the conferences relating to their specializations. 47.9% believe that management can motivate writing or translating an article. Motivating policies could be devised to increase this percent.

37/6% of respondees, believe more knowledge means possessing more monetary benefits, to 23% holders of strategic knowledge are much satisfied at IMRE. To 8/8% of respondees, benefits of possessing knowledge motivate them much to acquire knowledge. 70% of respondees believe that more knowledge means more labour very much at IMRE. So modifying payment system and making it knowledge based would help.

43/8% believe management is sensitive in preserving its knowledge based employees and to 18/8% of them, preserving knowledge based employees is much systematic: it suggested here to the management to adopt proper policies in this respect.

Knowledge Organizing Loop

37/5% of respondees think they organize what they've learned much and very much. It is here suggested to concern a shared file in the intranet which guide people to organize their knowledge in them

77/11%desire much to organize personally their knowledge, while 16/7% believe there is much an information system for knowledge organizing. Concerning related soft wares for this purpose is problem solving.

Sharing Knowledge Loop

 To 14/6% of respodees, knowledge sharing is much desired by majority. Improving the culture of knowledge sharing here is recommended.

14/6% believe that sharing knowledge is much flown among functional divisions. So it is recommended to reengineer and rethink about work processes and procedures.

37/1% think that management encourages much employees for knowledge sharing and 10/4% believe knowledge sharing is actively rewarded all over the organizations borders. So here it is recommended to motivating systems to be desined.

According to 12/5% of respondees, librarians distribute necessary information on time. In this respect making them aware of their critical role in knowledge sharing could be useful.

Knowledge applying loop

To 14/6% of respodees, enthusiasm towards knowledge appliance exists much, and to 14/6%, IMRE has systematic processes for expoiting knpwledge. In this respect, IMRE can receive from employees themselves useful suggestions on making knowledge applicable. Furthermore, designing systematic processes for knowledge Appliances would be useful.

14/6% of respondees believe that after participating in educational courses, managemet worry much about its appliance by them. Policymaking for motivating people for applying what they've learned is essential.

To 10% of them, IMRE act for exploring knowledge gained through performed projects. It is recommended here to assign the duty of transferring this knowledge to the needed audiences in order to establish connection between projects results and applying them.

In spite of the fact that attaining a knowledge-based organization in which all its four loops are managed efficiently is difficult, it is not impossible.

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Automatic Update of e-Learning Environments Based on Heterogeneous Traces

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Abstract

In e-learning environments, collecting data on users from their activities traces is crucial. It permits improvement of the adaptation process and the development of pedagogical tools. Modeling users in an e-learning environment is well researched. Nevertheless, sharing and reusing user data jointly in different environments is still overlooked. In this context, the question that arises is: How to systematically update different environments after activities performed by a user in a given environment?

In this paper, this question is addressed and a solution is proposed. It updates systematically diverse models of different environments based on the activities performed by a user in a given environment.

Keywords: ILE; heterogeneous traces; interaction; SBHT; user model, repository, e-learning environment.

Introduction

In e-learning environments, collecting data on users from their activities traces is crucial. It permits improvement of the adaptation process and the development of pedagogical tools. Modeling users in an e-learning environment is largely studied in research [1],[2],[3]. Nevertheless, sharing and reusing user data jointly in different environments is yet overlooked. Indeed, we face obstacles such as: the technical characteristics of each environment, lack of interaction between different environments, difficulty of managing heterogeneous traces, inconsistency in some environments, etc. In this perspective we distinguish different end-users and different situations of reusing and sharing data.

First, we can consider the learner who pursues a course on an environment E1 and wants to continue his training in an environment E2. What happens? Simply, the learner must repeat all the steps already undertaken in the environment E1, and thereafter he could continue his training. Indeed, there is no trace in the second environment which can update his model and estimate the degree of progress of the learner!

Second, we consider the tutor who responds to learners requests in an environment E. Those interactions can be exploited by the rest of the environments to help improve the learners in similar situations.

To summarize, the question that arises is: How to systematically update different environments based on the activities performed by a user in a given environment?

To answer this question, we have to consider how to deal with heterogeneous traces (collected about the user in different environments) in order to update different heterogeneous learning environments. The difficulty is that the activity performed by a user in a given environment is represented by a trace having specific format and semantics. In this context, we propose a solution that systematically updates diverse models of different environments after the activities performed by a user in a given environment.

The paper is structured as follows: Section 2 explores a synthesis of research about the learning environments. We focus on systems based on traces and principally on systems based on heterogeneous traces. Section 3 discusses the various alternatives to address the issues mentioned above. In the next section, the solution is developed. The architectural, the conceptual and the technical aspects are detailed. Finally, a conclusion is presented in which we summarize what we have done and we discuss other aspects that remain to be done.

Synthesis on Systems Based on Traces

We began by giving an overview on Interactive Learning Environments (ILE) and their evolution, subsequently we focus on systems based on traces: a comparative study has been developed which has led to a System Based on Heterogeneous Traces (SBHT).

Brief Overview on ILE

The Interactive Learning Environment (ILE) is dealing with the environments designed in order to "foster human learning, ie the construction of knowledge among learners" [4]. Studying these environments has allowed us to identify the essential specifications that ILE should provide:

- First, the ILE must capitalize and integrate learning resources which it disseminates, being regularly fed and operated by teachers. The latter can create, put and update their educational resources with a view of all the lessons (better integration and coordination).

- It must be pedagogically adapted to needs of students, identified and grouped according to different profiles.

- It must be generic, i.e. built as a configurable container and help the contextualization of the content being able to accommodate diverse educational content, developed with the most commonly used tools.

However, these environments are often specific to the used tool and have several limitations such as the lack of interaction control between the trainer and the learner, the difficulty of re-learning of the training scenarios, the problems with the re-use, the low operating of the concept of trace in the modeling scenario. Therefore, these types of ILE evolved into Systems Based Traces (SBT). In the context of ILE, the concept of trace can mean either the historic of learner's interactions using an ILE or the productions the learner left during his training.

ILE Based on Traces

We have identified three categories of learning systems based on traces: the quantitative environments (based on log files), the proprietary environments (specific) and the environments based on models (SBT). The existing approaches of trace management that are based on the log files have to face some barriers relating to the access and the meaning of information:

- They are contained in files that are not generally available to any user.

- They do not transcribe the real exploitation of the system by the users.

- The acquisition of these data must be made according to an interval of time determined by the system´s supervisor and not real-time.

- The information, contained in these files, is not always very accurate.

These drawbacks could be remedied by approaches which provide observation mechanisms specific to a particular learning tool: For example, Application eMediathèque[1] of eLycée is an

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[1] eMédiathèque: Application developed by a young company eLycée offering to francophone students, enrolled to learn French language and culture.

interactive and collaborative work tool that aims to improve reflexive activities during a collaborative learning [5].

If the approaches which are specific to a particular tool have some strengths that fill gaps in approaches based on log files (acquisition and visualization of traces in real time, traces collected in function of user activity, precise and detailed information), they suffer from their partitioning and of their owner aspects. The traces collected by these systems have a specific format that prevents their processing by other SBT. On the other hand, traces are contained within a specific system and can not be reused. The review of different approaches leads us to propose a System Based on Heterogeneous Trace (SBHT) that incorporates the benefits of specific approaches, and fills their gaps.

Such system must be able to:

- collect heterogeneous traces and their models in a single repository through action reification mechanism to be able to share and reuse them.

- represent dynamically the effective activities of the learner, whether in terms of operating procedures, or of information searches using the collected traces.

- instantiate, from the repository, for each type of educational activity, a professional trace whose semantics is the activity it represents.

- chart in real time and in an exhaustive way all activities of the learner and visualize, in an interactive manner, the traces thereon.

- perform basic operations on these traces like sorting elements they contain, clustering, filtering, and displaying properties or entities (the visual masks).

- make easy the use of the ILE technologies for teachers, helping them to develop learning strategies from learning profiles and to customize different learning systems.

- allow a user to operate multiple environments with a systematic upgrading of the latter.

Proposed Solutions

System Architecture

The specifications above permit us to conceive the architecture of the proposed SBHT [Figure 1]. Based on the standards imposed by the DMTF (Distributed Management Task Force), including concept mapping CIM (Common Information Language) [6], we developed a generic model of traces that can represent user activities within learning systems based on heterogeneous traces [7]. In this paper, we zoom on the framed part to respond at the following questions: i.e. how can the traces be collected and transformed? What are the options to update the different ILE from our repository traces?

It is therefore necessary to propose solutions that can systematically update the different models from different environments after the activities performed by a user in a given environment.

Two solutions can be envisaged, the first is to find a unified model for all traces issued from any environment and stored in the repository of traces; the second permits storage of all the traces and their models in a repository and relate them; when any activity is triggered, all models involved are given and therefore the related environments will be updated.
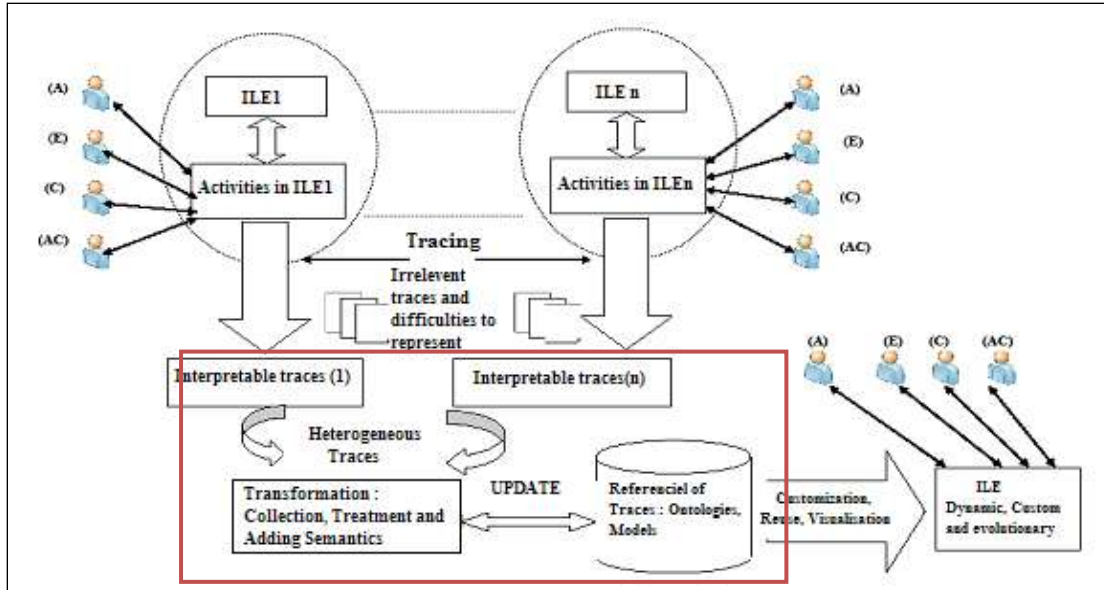
Figure 1. Architecture of the SBHT

First Solution : Unified Trace

The SBHT based on a distributed and multi-component architecture (Figure 2), will be conform with specifications detailed in [8]. We have several environments distributed on what activities were performed by different users: Learning (A), Teacher (E), Designer (C) and Research Analyst (AC). For each activity, a trace will be saved. This gives us for each environment a set of traces with different qualities and natures: incomplete, irrelevant, relevant, interpretable, and so on. Each trace environment must be analyzed and processed, using its modeling tools, to produce and implement the end modeled traces on which semantics have been added. If we denote by (E) the environment, (M) the application model on the trace and (TM) obtained modeled traces, we can represent the system (S) by S = ((E) (M) (TM)). It is clear that systems from different learning environments are not similar, especially at the level of representation model traces. So, we have at the end heterogeneous models and traces. Then, the questions that we can ask are:

From an environment how, one might use, reuse, or benefit from activities transformed in modeled traces? How can we customize the course of a user in an environment by operating the previous experiments performed on different systems?

It is therefore necessary to find a solution that can gather these traces and models in one repository able to standardize traces independently of semantic and specific technology of environments. This is the purpose of our SBHT. As input, it must be possible to store heterogeneous modeled traces and their models in a single repository, which is an intelligent system capable of representing the information and relationships that can exist between them. It looks like a Knowledge Base System (KBS) for which we must find a Knowledge Base (Traces Base) and a database containing models and ontologies of traces (Models Base). The interaction between these bases is essential to meet the needs of users. From these resources, our SBHT must have a generalized interface 'a kind of middleware' that will accept in input of the traces and their models and produce traces represented semantically in a standard model (Pivot Model). This is the highlight of this system. We can then generate a consistent traces database. However, the feedback will be difficult: How can update environments E_i from the repository traces?

Here, it will be more difficult: we must find inverse functions to convert a unified trace into a modeled trace imposed by the environmental issue. That is why we moved to the second solution.

Second Solution : Related user models

1) Presentation: The same assumptions will be considered and the same process is used at least initially. Each trace environment must be analyzed and processed, using its modeling tools, to produce and implement the end modeled traces on which semantics have been added. If we denote by (E) the environment, (M) the application model on the trace and (TM) obtained modeled traces, we can represent the system (S) by $S = ((E) (M) (TM))$. As input, our SBHT must be able to store heterogeneous modeled traces and their models in a single repository: it is an intelligent system capable of representing the information and relationships that can exist between-them. The interactions between models are needed to meet the needs of users on the one hand, and to ensure the consistency and integrity of the repository, on the other hand. In this case, if a user accesses an environment to perform an activity, the system will be able to update all environments affected by this activity. Technically, it develops a component (Services), from a model invoked by a user when he is oing an activity; this component must be able to update systematically the traces models stored in the repository (sequential scan of all models).

When the repository is updated, we must ensure the consistency of dealing environments; in which case our system must include a component that, from any model of the repository, you must be able to access it in the corresponding environment and update it (Figure 2).

2. Description: This architecture consists of four levels: the first level concerns the learning environments (ILE i), the second tier is related with the models and the traces of ILE i (Tmi model), the third level is dealing with services (Smi) which is the plate rotating system; it provides several features: control and trade. The final level is the repository of traces that form the core of this system. In the following, we will detail each level.
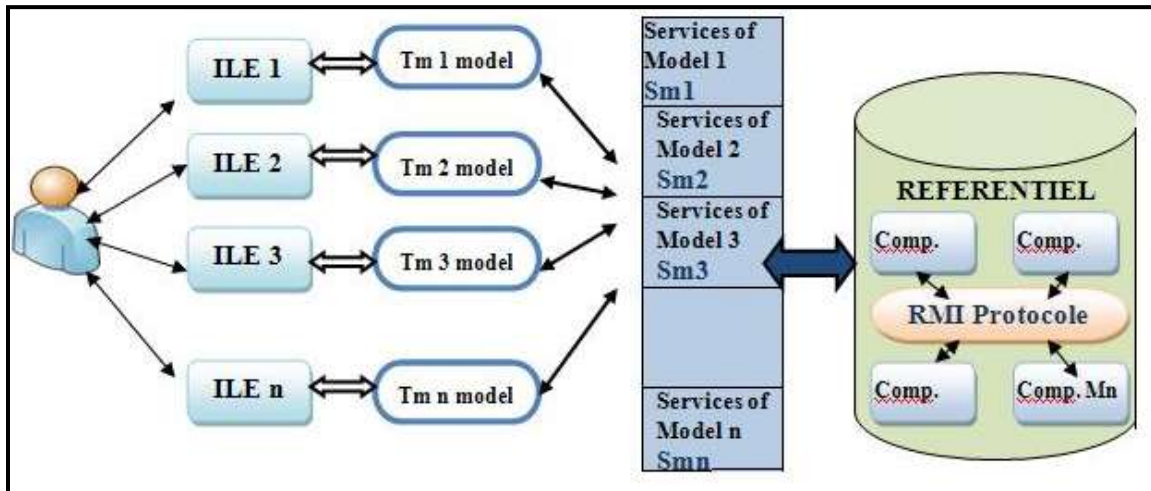

Figure 2. Architecture of the second solution (2)

ILE Level (ILE $_i$) : This level concerned the learning environments (ILE) that the user can exploit. The latter, for learning, can access various environments. There are different types of users: learners, tutors, designers and researchers. Each ILE is mainly characterized by activities traces and their semantics.

Models Level (Tm$_i$) : By accessing one or more ILE, a user will carry out activities; each one will leave a gross trace that will be modeled according to the belonging environment. The Tmi component consists on transforming activity of an environment Ei, in to modeled trace (Tmi). This way, if a user operates on an Environment Ei, it will be saved by his Tmi. The basic functionality of this component is to filter all traces (not that any traces will undergo a

conversion) and leave only the traces activities that are comprehensive and relevant. Thereafter, these traces will undergo changes depending on the traces model supported by the belonging environment.

Services Level (Sm$_i$) : When processed, the activities traces must be injected with their models in the traces repository. This is the first part flowing from that business component. In a second step, the components (Smi) must update the model (mi) from an activity represented by a model (TMj). In fact, for each user model (input), it should systematically invoke all the other repository components and update those who are concerned. This component is a composition unit with specific interfaces; it can be deployed independently and can also communicate with another component Smj through a protocol such as RMI. It is therefore the hub of our system.

*Repository Level:*This is the system kernel. It contains all models and all traces from different learning environments. It is organized into components (Comp Mi): each one contains all of the different users' models and must be compatible with the models obtained in models Level (Tmi), to allow the update and ensure consistency and integrity of information in the repository. To do this, we must have management system components (Comp. Mi) as a "Data Base Management System (DBMS)", which will allow them to relate them in a relational schema. In that case, if we have an activity performed by a user in a given environment, and represented by its model Mi, and based on the relational schema, the Smi will be able to update the corresponding models Mj. For what is the protocol that will ensure communication between the components (Comp. Mi) of the repository, we should not worry about it; protocol RMI (Remote Method Invocation) might do the trick: It is a programming interface (API) which allows the calling of remote methods. Using this API requires the use of an RMI registry on the remote machine hosting the registered objects we wish to call. This programming interface is very often used in conjunction with the JNDI directory, API, or with the specification of transactional distributed components EJB in Java language (in the Services Level Smi, we must also provide a JNDI directory service) [8]. It is a technology that enables communication via the HTTP protocol between Java objects physically distant from each other, ie running on distinct Java virtual machines.

RMI fosters the development of distributed applications by hiding the developer communication between client and server. As shown, the system management models (Comp. Mi) performs the same tasks as those of a DBMS: consistency and data integrity, provide mechanisms and tools update, ensure the availability information, define integrity constraints between database objects (in our case the relations between the components Mi), make transactions from the repository to update another application (in our context, update to the ILE from components Mi updated), and so on.

3) Simplified Algorithm:

- The user accesses to an environment to perform an activity (Ei).

- A user model will be generated Tmi (Tmi means that an activity trace is generated by the supported environmental Ei model (Tmi).

- Smi services will then be triggered: we start by injecting the Tmi in component (Comp. Mi), then each Smi will updates the component Mi from a model Mj generated by the user. In that case, we will have all components Mi updated.

- The services Smi must subsequently complete the feed-back, each service (Smi) must update the corresponding ILE$_i$. We will have at the end and, as expected, the different ILE$_i$ updated.

4) The Conceptual Schema Repository:

Based on the work of Broisin and Vidal (SIERA-IRIT Toulouse) [9] and the standards imposed by the DMTF including concept mapping CIM (Common Information Language), a generic model is developed (Figure 3) capable of representing heterogeneous trace user activities within the repository [10].
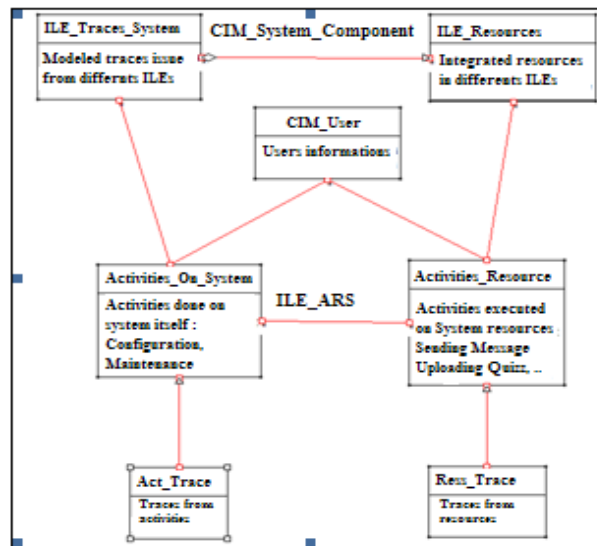

Figure 3. Generic Model of the SBHT

Conclusion

In this article, we address the question: How to update systematically different models of different environments after the activities performed by a user in a given environment? First; we give an overview on the Interactive Learning Environments (ILE) based generally on traces and especially on heterogeneous traces. To answer our initial question, we present two solutions. Then, we detailed the retained solution after explaining the problems of the first solution especially when we want to update the ILE Level after updating their models in repository. For the retained solution, we explain each component of the architecture, specifying the algorithm of our system and presenting the conceptual model of the data repository according to the CIM approach considered one of the standards DMTF. The prototype is under development: we chose the J2EE platform for developing: it's an architecture based on distributed multi-component and its tools are open source.

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Editor's Note: The history of the human race has been preserved in written language for thousands of years. In many ways it is become the most accessible yet the most challenging of all communication media. In a world of instant multimedia communications it continues to be the basis of planning and research and the basis of business, entertainment and personal communications. Writing is more than language and culture. It is the essence of art – as in poetry and drama; science and engineering – for research and reporting; and social sciences for documenting the human condition and exploring worlds of the imagination past and future. It can use primitive and accessible technologies such as clay tablets, cave paintings, papyrus and paper. It is challenging because complexities of language and meaning must transcend educational, cultural, and chronological differences and engage the reader in the thought patterns and experiences of the author. There is always more to learn about the art and science of writing. Thank you Brent for sharing your experiences in Journal Publishing with our readers.

Journal Publishing Advice
Brent Muirhead

Introduction

People who would like to publish journal articles may wonder how to create quality material. The absence of knowledge about academic publishing can often be traced to education experiences. The author recalls that none of his professors offered publishing advice during his eight degree programs. Yet he is grateful to have over 170 publications including journal articles, books and letters to the editor. This discussion contains insights and suggestions designed to help individuals to have a better understanding of academic publishing and how to become a confident and productive writer.

Getting Started

> **"To turn toward greatness, you must turn and face your fears."**
> Noah Benshea

The first step involves developing a writing plan based on the individual's personal and professional goals. Writing requires developing short and long term goals that align with personal interests and career plans. Publishing can be an excellent way to develop a set of articles for sharing expertise in workshops, seminars, conferences and books. Online journal articles have a worldwide audience. There is great potential to develop new professional relationships and make a positive difference in the lives of others.

Writing is an art and science and each person must identify his or her motivation. Perhaps, individuals have received encouragement to write from college professors, friends and colleagues. Yet, there could be some hesitation because of concerns about time constraints in creating an article or fears about editors rejecting the work. It is important to face these concerns and realize that developing confidence will require taking some risks and developing realistic writing plans (Henson, 1999).

People can have an assortment of writing fears: not finishing the article, editor rejects the work and concerns about the quality of their work. These are fears represent threats to creativity and writing productivity. Successful writers have learned to manage their fears and have cultivated the resilience and discipline to complete projects. An excessive focus on work being rejected will create emotional barriers and generate constant excuses not to write. Ballon (2007) advocates identifying self-defeating attitudes or thoughts that create writing problems such as trying to write perfectly or becoming depressed after making numerous revisions without finishing the article.

Those who procrastinate in writing have developed the habit of delaying work and this could be due to a variety of reasons: low self- confidence, I'm too busy, stubbornness, manipulation, coping with pressures and a frustrated victim (NA, Procrastination, para#5). People can become discouraged when their article is rejected and lose perspective on the publishing process by failing to take personal responsibility. Hallinan (2009, p. 5) observes that, "we learn so little from experience because we often blame the wrong cause." Individuals who take personal ownership of their writing have cultivated a teachable attitude and strive to improve their skills. Editors will share reasons for an article being rejected and it is important to learn from these experiences. Being teachable, persistent and having a passion for a subject are three traits of successful writers.

> *"He who is not everyday conquering some fear has not learned the secret of life*."
> Ralph Waldo Emerson

During my academic journey, a variety of people have encouraged me to publish. Yet, it was not until after completing my second doctoral degree that writing for publication became a major goal. My first attempt at publishing was not successful but was a valuable experience. The topic did not fit the journal's focus. This event prompted me to devote more time to exploring journals to identify subject trends and editor's expectations. It is important to invest time into studying various publications before making a final decision on a topic and place of submission. Ray (2010, para#4) recommends asking the following questions about journals:

1. What is its purpose?
2. What regular departments or features does it include?
3. What seasonal material does it include?
4. What range of freelance-written topics does it cover?
5. What topics and articles have been recently published?
6. What elements and features do the articles include?
7. What writing techniques, structure, and organization do authors employ?
8. How long are the articles?
9. How deep is the information?
10. How do articles and accompanying graphics appear?
11. How formal or informal are the design, writing, and graphics?

This list of questions will help individuals to identify the top three or four potential journals or magazines that offer the best publication opportunities. The next step is to establish a series of short and long-term writing goals. It is essential that individuals create goals that help them continually write and practice their skills. Learning to write on a regular basis requires being creative, disciplined and having a strong interest or passion for the subject. Journal writing is an excellent way to establish a daily writing routine that creates a reservoir of ideas for future projects (White, 2008). Making reflective observations and recording the thoughts will generate new ideas, create diverse perspectives, enhance critical thinking skills and offer opportunities to increase empathy for others. Being constantly engaged in writing activities will improve the ability to understand and communicate knowledge.

> *In life you are the painter, the paint, and the painting. On the journey to greatness, you are the archer, the arrow, and the target. Draw your bow and take aim on what you want."*
> Noah Benshea

Writing Skills and Research

Success is built through some experimentation to discover the best strategies to effectively produce quality work. Writing skills are improved through self evaluation, practice and feedback. Individuals can share their papers with others and relate their need to have specific guidance (e.g. passive sentences) which encourages more relevant advice. Writing insights on grammar and style issues are available through books (e.g. Royal's (2004) *The Little Red Writing Book*) software programs such as StyleWriter (2010). Also, learning to use *Roget's International Thesaurus* will bring new life to narratives. Plotnik (2007, p. 77) shares six advantages to using the thesaurus:

1. Discover more fitting or more forceful words;
2. Find those good words you can't quite recall;
3. Avoid repetition of words;
4. Escape clichés and worn modifiers;
5. Help describe the so-called indescribable;
6. Refine your intended meanings (via related concepts).

Take the time to investigate words, use dictionaries to look up meanings and reflect on why authors select certain terms. The goal is never to impress the reader with large or exotic words. Rather, language should be clear, interesting and informative. Writers must evaluate their use of language by asking questions such as, *do the words engage readers or do the terms create confusion for potential readers?* Brohaugh (2002) encourages writers to establish a style that enables readers to quickly understand the meaning of the text. Becoming skilled at crafting sentences and paragraphs will help capture the reader's imagination and sustain interest to read the entire article (White, 2008).

> *"Colors fade, temples crumble, empires fall, but wise words endure."*
> Edward Thorndike

Journal articles should not be wooden and void of emotion. Sadly, some writers can become consumed with being objective and lose connection with their readers. Confident writers will be open and genuine and avoid hiding behind their words. Wilbers (2000, 124) relates that "at its best, your writing should convey a sense of your individuality, your humanity, your warmth." Being yourself will foster genuine communication of thoughts. People long for personal and honest conversations. Using artificial language creates credibility issues because it might not be clear what the author truly believes. Those who struggle with grammar issues can become absorbed with avoiding mistakes which can diminish their message. This can cause the message to become distorted, creates distance from the reader and undermines the writer's credibility. How can writing become more dynamic and personal? The key is to integrate personality traits into writing by being genuine, lively, somewhat playful at times and even unpredictable. People long to encounter personal narratives where the writer shares the challenges in understanding complex ideas and problems. Readers are able to connect with those who have similar struggles. Writers can infuse personality into the text by using action verbs and visual terms that generate colorful images. For instance, when discussing a major concept, instead of implementing the traditional rational approach, share a metaphor and appeal to the reader's imagination. Developing journal articles is an adventure in creativity as writers seek to engage their readers in original thinking (Wilbers, 2000).

Sharing stories can be a powerful way to relate principles and sustain reader interest. Stories play an essential role in developing contextual information, enlarging personal frames of reference, offering more accurate information and helping readers identify with the subject (Piper, 2006). A story affirms the human perspective and encourages awareness about social issues and the

potential for growth. One way to start a story is to share a quote such as "The real test of character for a leader is to nurture those people whose stars may shine as brightly as – or even brighter than – the leader's own" (Bennis, 2004 p. 52). The quote could lead to a diversity of leadership discussions. For instance, a writer could reflect on a professional experience involving myths about creativity and how management driven time pressures often fail and demoralize employees (Amabile, Hadley & Kramer, 2002).

> *"But as you get older, more experienced, and more confident, you realize that your failures aren't fatal, and your successes don't completely define you."*
> John Maxwell

Reading is one of the best ways to increase vocabulary and generate ideas for articles. Ralph Waldo Emerson would often read five hours a day and the habit helped him produce thought provoking literature (Richardson, 2009). Reading a diversity of materials stimulates thinking about creative ways to organize and discuss subjects. People will use various excuses as towhy they spend little time reading. Yet, reading must be a priority for those who are serious about publishing. Electronic reading books (e.g. Kindle) are growing more popular because books can be downloaded and stored in a small portable device. Consistently reading with a specific purpose reflects having the discipline to learn and being dedicated to larger goals. Fostering intellectual habits of the mind will promote critical thinking skills and establish the following five life-long learning traits and skills:

1. quest for knowledge – comfortable with ambiguity, intellectual curiosity
2. independence – autonomy, self-directed, take initiative, create original research
3. humility – openness to feedback, receptive to new ideas
4. research skills – learn to analyze, synthesize, conduct research projects
5. communication skills – share research with diverse groups, becoming a public intellectual

Life-long learners are focused on daily growing and enjoy the pursuit of knowledge. Successful writers have a superb work ethic that enables them to translate their ideas into journal articles.

> *"Some people drink from the fountain of knowledge, others just gargle."*
> Robert Newton Anthony

Technological Resources

Mindtools can provide writers with useful technological resources. Jonassen (1997, para#1) defines Mindtools as "a way of using a computer application program to engage learners in constructive, higher-order, critical thinking about the subjects they are studying." Mindtools have a diversity of benefits such as fostering knowledge construction, using computers to design products and become acquainted with new technologies that can increase their productivity (Culley, 2007). A mind map is a learning tool that can help individuals create new perspectives, foster an understanding of complex ideas and develop visual ways to describe past and present knowledge. Inspiration and MindManager are two of the popular mind map software programs. The maps promote the exploration of new ideas, foster creative problem solving skills, and make knowledge relationships into new paradigms (Jonassen, Carr & Yeuh, 1998). Mindtools foster autonomy and confidence which are essential skills in research and writing. Editors encourage writers to use graphs, charts and mind maps to provide visual images of knowledge. The visual approach broadens the opportunity to relate ideas to a larger audience.

The eyePlorer is a unique Mindtool. The Web based tool provides a visual picture of search terms. The tool enables the user to select a term or terms and Web sites are generated with basic facts about each site. The notepad feature serves as a place to record basic site data within the same Web page. The tool is designed to help people experiment with various terms to provide new insights into how to investigate their topic. Individuals can use the tool as a visual picture

that acts as an information filter and creativity resource for developing journal articles. Figure 1 highlights how the term leadership can produce a visual image of related Internet based sites.
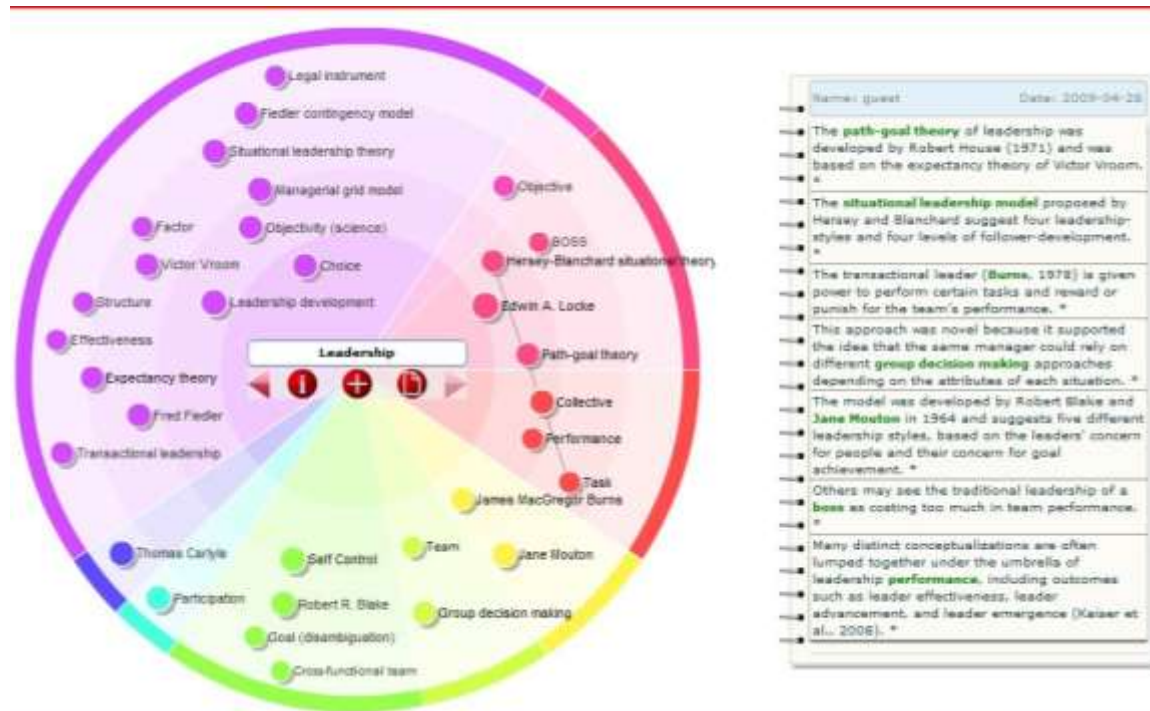

Figure 1 Leadership (eyePlorer.com, 2009)

"A wise man will make more opportunities than he finds."   Francis Bacon

Developing Good Writing Practices

A valuable way to increase publication opportunities is by continually writing and networking with other writers and editors through email communication and attending conferences. There are professional organizations that offer formal and informal formats to meet others who are also involved in research projects and publication related activities. For instance, The International Forum of Educational Technology Society (IFETS) has provided online discussions where individuals can share their papers on educational issues with an international community.

Writers should cultivate good working relationship with their editors. Editors appreciate those who have carefully followed journal guidelines for submitting articles which helps them focus their attention on reviewing the work. It is surprising how people will neglect to provide updates on article revisions. Individuals who miss promised deadlines create issues for editors who have specific procedures to edit and review material. Writers can operate in a manner that can diminish the possibility of having future writing opportunities because editors can lose trust in their ability to meet deadlines. Editors want quality articles in a timely manner (Ray, 2010).

Writers can share their knowledge and insights in a literature review, presenting papers at conferences (e.g. Muirhead, 2007a; Muirhead, 2002b), sharing best teaching practices (e.g. Muirhead, 2002a), book reviews (e.g. Muirhead, 2008) and group projects (e.g. Muirhead & Blum, 2005). Editors are looking for creative narratives that reflect a good working knowledge of the literature. Usually, editors will invite individuals who have specific expertise in an academic area to review a book. Fahey (2001, para#20) states that "a book review should not just

summarize the book, but should incorporate personal judgments. You should be polite even if you disagree with the author (and especially if you are just beginning your writing/teaching career)." Book reviews and conducting peer reviews of articles can be ways to become acquainted with an editor and publication expectations. Editors want to work with people that they can trust and working on editorial projects is an excellent way to foster a positive relationship and generate potential future publication opportunities.

Individuals can experience times when they struggle with their writing. It is wise to realize that others can have this problem and take a healthy perspective on this issue. Skinner & Policoff, 1994 offer five strategies to jump start the writing process:

1. Establish a writing routine that creates a specific time and place to write and encourages daily practice.
2. Change your established writing schedule to a different time of the day.
3. Read books and articles in your research area with renewed sensitivity because it can promote new ideas.
4. Write a letter or poem that expresses your thoughts.
5. Exercise or listen to music to help energize your creativity (Skinner & Policoff, 1994).

Graduate degree programs provide numerous opportunities to learn new ideas, increase knowledge of subject areas and interact with others who have diverse intellectual interests. I recently completed a Master's degree in Computing in Education at The Teachers College, Columbia University and was able to publish 95% of my course papers. The class papers reflected my interests in cognitive psychology (e.g. critical thinking and creativity) and distance education. A key to developing a writing plan is identifying ways that can generate article materials. For instance, establish a daily reading routine and explore academic journals, blogs and popular literature. The intellectual interaction with an assortment of sources will foster creative ideas. It is essential to have a way to record new ideas such as writing a note, sharing a voice message on a cell phone or making a journal comment in a Word document. One of the greatest frustrations is losing insights!

> *"The courage to imagine the otherwise is our greatest resource, adding color and suspense to all our life."*   Daniel Boorstin

Practical Ways to Help Others Publish

University instructors can help their students publish by explaining the process to them and sharing examples of their publications (e.g. Muirhead, 2007b). Students appreciate having relevant feedback on their initial article drafts. Faith (2009) shares valuable advice for sharing writing critiques:

- Carefully read the text several times to be able to summarize the article to identify what ideas were effectively communicated and areas requiring more attention.
- Share comments indicating strengths, offer suggestions for improvement and close with positive remarks.
- Avoid using language reflecting bias or personal judgments that require adding details and weaken the writer's message and voice.
- Relate honestly about the weak areas but avoid excessive criticism.
- Writers are free to accept or reject your suggestions.

Teachers can offer guidance by highlighting potential journals to seek publication (Ritzhaupt, 2009) and co-author articles with their colleagues and students (e.g. Muirhead & Skelton, 2009; Muirhead & Blum, 2006; Muirhead, Yap & Keffer, 2005). Students appreciate the coauthored

projects to share ideas and learn more about the publishing process. Doctoral mentors or chairs can share their writing expertise and help their students to identify potential journal articles from their dissertation research (Heyman & Cronin, 2005). Publications are an excellent way for students to establish a professional identity within the academic community.

Doctoral students can use mind maps to organize literature reviews. A map can highlight the information resources used to study the topic such as libraries, Internet databases (e.g. ProQuest Digital Dissertations), types of journals, newspapers and research documents. Mind maps are growing more popular within the academic community because their ability to share complex ideas in journal articles, blogs, newsletters and email notes. McNichol's (2008) map reflects how a student can develop a comprehensive literature review with seven major themes: complexity theory, knowledge management, organizational learning, culture, multigenerational, knowledge barriers and knowledge transfer (see Figure 2).
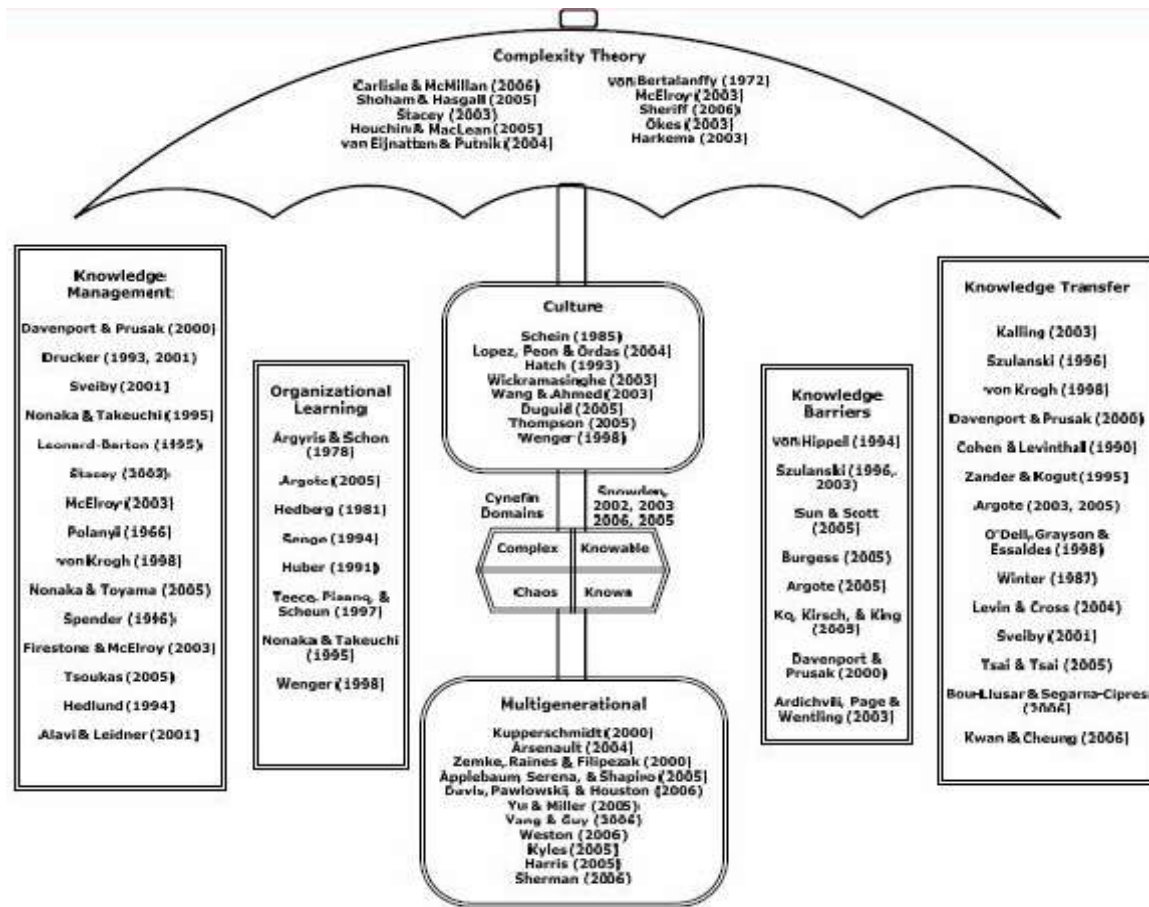

Figure 2 Graphical representation of key themes within the literature review.
McNichols, 2008, p. 27.

Mindmaps are tools that can present information in ways that engage people and prompt reflective thinking and stimulate debate. Piper (2006, p. 23) encourages writers to tackle complex issues in a manner that challenges reader's thinking, "change writers trust that readers can have multiple points of view, contradictions, unresolved questions and nuance."

Striving to read everything remotely related to a topic could result in devoting too much attention to trivial articles and materials. A mind map can help keep the research focused on the most important and relevant documents. Also, individuals can spend so much time reading that they

fail to write about their project. There can be a tendency to choose reading over writing because it is less demanding than writing. The writing process is another way to reflect upon ideas and foster a better understanding of information relationships (Language Center, 2004).

> *"Make the effort to achieve greatness a habit, and doing less will become a discomfort."* Noah Benshea

Conclusion

Editors are always looking for dynamic journal articles that will serve the needs and interests of their readers. Writers should strive to develop positive relationships with editors by submitting quality work, meeting promised deadlines, and responding promptly to their e-mail or telephone messages. Mindtools can enhance research and writing skills and offer unique ways to communicate ideas. Good writers share their personality and connect with readers through stories, metaphors and creative insights. "The secret to connecting with your reader is to be yourself. It may take confidence, even courage, to reveal who you are, but your reader wants to know. Don't hide behind your words" (Wilbers, 2000, p. 124)

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