



ISSN:1306-3111

e-Journal of New World Sciences Academy  
2012, Volume: 7, Number: 2, Article Number: 1C0518

**NWSA-EDUCATION SCIENCES**

Received: January 2012

Accepted: April 2012

Series : 1C

ISSN : 1308-7274

© 2010 www.newwsa.com

**Erhan Şengel**

**Semiral Öncü**

**Şehnaz Baltacı Göktalay**

Uludag University

erhansengel@uludag.edu.tr

Bursa-Turkey

**ATTITUDES AND MOTIVATION OF ENGLISH LANGUAGE TEACHERS CONCERNING THE  
DYNED SYSTEM IN SECONDARY SCHOOLS**

**ABSTRACT**

The purpose of the study was to find out the level of the attitude and motivation of English teachers in the usage of DynEd for the delivery of the English course. This study probed how teachers reacted to the system. The school context was investigated through a qualitative case study design. English teachers' attitudes were scrutinized with the help of various data sources. Two different data collection methods were utilized to collect data from the participants. These were semi-structured interviews and correspondences or reports about the use of DynEd system, which the participants shared with us. Majority of the teachers we interviewed and collected correspondence from have expressed positive feelings about the use of DynEd software as a part of their classrooms but this was true only if the issues encountered on the system were resolved. All of the participants reported problems with the DynEd system and they indicate that these problems diminish their desire to use DynEd.

**Keywords:** CALL, DynEd, Motivation, Attitude

**İLKÖĞRETİM İNGİLİZCE ÖĞRETMENLERİNİN DynEd SİSTEMİ İLE İLGİLİ  
TUTUMLARI VE MOTİVASYONLARI**

**ÖZET**

Bu çalışmanın amacı İngilizce uzaktan destek amacıyla kullanılan DynEd sistemine karşı İngilizce öğretmenlerinin tutum ve motivasyon düzeyinin öğrenilmesidir. Bu çalışma öğretmenlerin sisteme nasıl tepki verdiğini araştırdı. Okul bağlamında niteliksel bir durum çalışması tasarımı ile araştırıldı. İngilizce öğretmenlerinin tutumları, çeşitli veri kaynakları yardımı ile incelenmiştir. Katılımcılardan veri toplamak için iki farklı veri toplama metodu kullanıldı. Bunlar yarı-yapılandırılmış görüşmeler ve katılımcıların bizlerle paylaştığı DynEd sisteminin kullanımı hakkındaki yazışmalar veya raporlarıdır. Görüştüğümüz ve bilgi aldığımız öğretmenlerin çoğunluğu, sistemde karşılaşılan problemlerin çoğunun çözülmesi durumunda derslerinin bir parçası olarak DynEd yazılımının kullanımı hakkında olumlu duygular ifade ettiler. Tüm katılımcılar DynEd sistemi ile ilgili sorunlar yaşadığını ve bu sorunların DynEd'i kullanma arzularının azalmasına neden olduğunu vurgulamışlardır.

**Anahtar Kelimeler:** Bilgisayar Destekli Dil Öğrenimi, DynEd, Motivasyon, Tutum

## 1. INTRODUCTION (GİRİŞ)

The recent innovation of Turkish Ministry of National Education (MONE) in Turkey was to increase the availability of computers and Internet access in elementary and secondary schools throughout Turkey. The MONE also required all secondary schools to practice DynEd (CALL software) in their schools. Although this development has made the computers a fixture in the classrooms, research suggests that CALL are under-used in many schools in terms of quantity and quality of use (Ates, Altunay, Altun, 2006; Kirkgoz, 2008). Given the prevalence of computers in education today, it is critical to understand teachers' attitudes and motivations regarding CALL integration in their classrooms.

Previous researchers have identified both environmental variables and individual characteristics of teachers as potential barriers to the successful integration of computers in schools (e.g., Becker & Ravitz, 2001; Cuban, Kirkpatrick, & Peck, 2001; Foon Hew & Brush, 2007; Hayes, 2007; Mueller et al, 2008; Mueller, Wood, & Willoughby, 2007; Vodanovich & Piotrowski, 2004). The majority of existing research, however, has focused on environmental barriers, such as limited access, technical problems and institutional problems; most likely because these issues were immediate concerns facing teachers and administrators when computers were first being introduced in schools. Ongoing advances with computer technology eliminated most of the environmental barriers. The key area of interest for researchers today is the individual differences in beliefs, attitudes, and skills among teachers (Chen, Looi, Chen, 2009; Kessler, 2007; Mishra & Koehler, 2006; Schofield, 1995; Zhao, Pugh, Sheldon, & Byers, 2002). Educators are the focus of interest because it is educators that have the primary contact with students and it is educators that experience the barriers and supports to integration of technology at first-hand.

It may be necessary, therefore, to explicitly address the impact of technology on beliefs, attitudes, and motivation. For example, in a study of middle and high school English teachers' attitudes toward technology, McGrail (2005) describes the teachers' perceptions of technological change in their instructional practice. Teachers pointed out disadvantages of computer use; pedagogical concerns about students; concerns about instruction and language; administrative challenges; and ethical concerns. It was not obvious to these teachers how computer technology fit into their instructional style or how it could be integrated into current curriculum. A teacher's pedagogical beliefs about how technology fits, or does not fit with those beliefs, may be a determining factor in computer integration.

## 2. RESEARCH SIGNIFICANCE (ÇALIŞMANIN ÖNEMİ)

Even if a teacher's pedagogical beliefs and attitudes toward technology suggest that computer integration would be a meaningful teaching approach, the teacher must believe that he or she is capable of implementing technology successfully in order to act on those beliefs (Mueller et al., 2008). Wozney et al. (2006) used cost-expectancy theory to explain how individual teacher characteristics and environmental variables influence computer integration. This theory proposes that teachers consider value (beliefs about the good technology does) and expectancy (efficacy beliefs, access, and support available), and then weigh that against cost (including time, energy, anxiety, teacher numbers) in their decision to implement computer technology in their classrooms.

Although recent research reveals that a successful integration of computers in language learning are based on three main factors:

students, teachers, and infrastructure (Jamieson, Chapelle & Preiss, 2005), very little work has been done to investigate these three elements in the computer assisted language learning (CALL) field (Ayres, 2002; Heller, 2005). The impetus for researchers then is to understand why computers are not being used to their full potential in the language classroom.

### **3. METHOD (YÖNTEM)**

#### **3.1. Context and Research Design (Bağlam ve Araştırma Tasarımı)**

The Turkish Ministry of National Education required all secondary schools to practice the DynEd system in their facilities. This necessitated the system to be installed on the school computers and students' home computers. The requirement brought forward several challenges. This study probed how teachers reacted to the system. The school context was investigated through a qualitative case study design. English teachers' attitudes were scrutinized with the help of various data sources.

#### **3.2. Participants and Data Collection (Katılımcılar ve Veri Toplama)**

The participants of the study were formed by 16 teachers teaching English in various schools of Bursa. They voluntarily agreed to either to be interviewed or share their thoughts in this research study funded by the Scientific Research Projects division at Uludag University.

Two different data collection methods were utilized to collect data from the participants. These were semi-structured interviews and correspondences or reports about the use of DynEd system, which the participants shared with us. Data were collected during the 2008-2009 academic year. Seven teachers teaching English were selected as interviewees through convenience sampling. Teachers with whom the researchers were acquainted with were inquired. This helped researchers to get as much information as possible about the system. Nine teachers teaching English shared with us their correspondences with their superintendents about the efficiency of the DynEd system. All correspondences were short, one to two page documents that were electronically delivered to the researchers. This eased the way to search and find relevant information in the documents during the analyses.

#### **3.3. Data Analysis (Veri Analizi)**

Grounded Theory (Ryan & Bernard, 2000) approach was the method for data analysis. An outline of data was produced by going through the phases of data reduction, data display and conclusion drawing (Miles & Huberman, 1994). In the data reduction phase, the interview transcripts were divided into categories and simplified for meaning. Excel sheets were used to organize the data during the data display phase. Then the conclusions were made by going through the categorized and organized data several times.

#### **3.4. Triangulation (Çeşitleme)**

As mentioned previously, two different data collection techniques, interviews and correspondences, were utilized to triangulate the findings (Stake, 1995). There were little conflicting findings. When such cases occurred, the researchers tried to bring them forth to give a rationalized view of the case. There were help from several data sources, which the researchers counted on as insiders. One of the interviewees was the wife of one of the researchers. She was also a teacher teaching English in a secondary

school. The information gathered from the interviews was also discussed with her in a broader time frame, which would not be possible for the other participants. Additionally, one of the teachers we interviewed was also the DynEd coordinator of the town he lived in. He provided an overarching interpretation of the results. These really helped to see the big picture, gave a broader perspective, and warranted the consistency (Trochim, 2006).

#### **4. FINDINGS (BULGULAR)**

In order to respond to the research questions, the results were grouped into several categories or themes in qualitative study terms. The following headings describe the meanings of the themes.

##### **4.1. Attitudes in General - Teacher Use - Attitudes Regarding the Teacher Use of the Program (Genel Tutum - Öğretmen Kullanımı - Öğretmenlerin Programı Kullanımına İlişkin Tutumları)**

Majority of the teachers we interviewed and collected correspondence from have expressed positive feelings about the use of DynEd software as a part of their classrooms but this was true only if the issues encountered on the system were resolved. All of the participants reported problems with the DynEd system and they indicated that these problems diminished their desire to use DynEd, but even then DynEd is a different system the students have not experienced such widely before.

The correspondences were especially useful to identify the kinds of problems that were encountered during the installation and the use of the DynEd software in secondary schools. The teachers indicate that they employ DynEd both in school and at home. Students who do not have computers and Internet connection at home are encouraged to use it at school. As mentioned above, because of the limitations, the program is not as utilized as it could be, but because the Ministry of Education requires the schools, all of the teachers have tried the program in whatever capacity they were able to start up. Most participants indicate that if the infrastructure were robust, then they would use more. Eda, one of the interviewed teachers says,

*I want to use DynEd if it works fine. Most of the time, we encounter problems while entering the system; this is beside the impossibilities we already have in the school. This really annoys me. One really does not want to look at it (DynEd) again, once he/she is never able to get through.*

A few teachers expressed their positive attitudes about DynEd with no specific reason. To them, DynEd is a tool, just like any other tools. Teacher is the actual entity that makes things work. If something is successful, the teacher shall be accounted for the success. If something did not work, then again the teacher is responsible for it. It is not DynEd that has the success or the failure.

All teachers talked about similar problems they encounter. Therefore we can say that the problems are not context-specific, changing from one school/teacher to another. They are common problems. And it would not be wrong to say that the problems are not because the teachers are not knowledgeable about technology. Many teachers indicate that they installed the system on the computers under the supervision of the teachers who teach computer classes.

Two of the teachers did not find DynEd useful. Mustafa indicates, "DynEd program's benefits cannot really be seen because of

the problems." Ertan adds to this by saying that "many problems prevent us from system's effective use." These negative attitudes appear to originate from the system related or operational problems; not from the pedagogical uses of the software.

#### **4.2. Benefits for Students - Student Use - Attitudes Regarding the Student Use of the Program (Öğrenciler İçin Faydaları - Öğrenci Kullanımı - Programı Öğrencilerin Kullanımına İlişkin Tutumları)**

Many teachers see DynEd as an opportunity for the students. They indicate that students are better able to explore technology in comparison to adults. If they are given with a technology-based tool, they will make benefit of it. "DynEd is going to be useful if they navigate through on their own and familiarize with at least a word from it," says Seda from one of the elementary schools in central Bursa. DynEd enables students to individually study the materials.

Most teachers expressed their thoughts concerning their students' use of the DynEd system. These thoughts, differently from their general attitudes, were mostly about pedagogical issues rather than the operational issues. In other words, teachers brought up the pedagogical issues when talking about their attitudes in terms of benefit to the students.

One such pedagogical issue that is mentioned often is the idea that students pay more attention to in-school lessons. Audio-visual materials fascinate them, according to the teachers who speak in favor of DynEd. Ahmet, one of the English teachers that we interviewed, says that

*Before DynEd, we would want students to pay more attention and put more things on the notebook. Now we do not need these anymore. Even if they do not pay attention, they continue on that path, whether they want it or not, once they get in front of the computer. They are unable to get out of that path. The external factors also get lessened.*

A few teachers indicate that the system enhances students' English speaking abilities. Another less frequently mentioned pedagogical issue was that students retain content more efficiently with the help of DynEd. But many more teachers relied on DynEd's help with teaching the words. They state that DynEd helps to practice on their own, which is not much effective when the students study on their own without the help of any pedagogical intervention. This way the program delivers content that is especially useful for students to practice the words and phrases. Tanyer asserts that "students started to use the sentences they hear often." These are positive things, but the problems that have been mentioned continuously also interfere with students' effective use of the system. Especially the multimedia availability of the computers strictly interferes with how the program is utilized. If the students do not have speakers and microphones, they are just able to repeat and practice the grammar and question-solving parts of the system, and unable to use the listening and speaking sections; thus, not benefiting from the audio-visual power of the program.

There were a few teachers who were against the utilization of the system. The problems they encounter during the installation and operation may have altered their attitudes. But one such teacher, Ahmet indicates that

*Besides the problems we encountered during the installation, students do not show much interest*

*in the DynEd program. It does not attract the students. We think the reason behind this is the sections of units that are always in the same format. It should be a program with more colorful, various sections and it should cover the curriculum.*

#### **4.3. Motivation in means of Workload Issues (İş Yüküne Yönelik Motivasyon)**

Many teachers talked about workload issues when expressing their attitudes about the DynEd system. All of the workload issues were complaints. The major complaint was about the time it requires to really operationalize the system.

Almost all of the teachers we interviewed and used correspondences of indicated that it takes a lot of time to install and administer the program and this really reduces the teachers' motivation. Installation takes a lot of time. Time appears to be the biggest challenge facing the teachers when confronted with the task of using DynEd. Many literally complain about that. The part that annoys the teachers is the fact that the system requires the students to have accounts with usernames and passwords. The usernames have to be e-mail addresses. Many students do not have e-mail addresses. So anyone who tries to enter a student into the system, first have to create an e-mail address for him/her. Then, you have to introduce those e-mail addresses to the system one by one. This obviously takes a lot of time. Seda says:

*That is, I, for instance, entered the students into the system one by one at least for a week or two, spending extra time at school and without taking any breaks. If, you know, someone else prepared this, and then our job would be much easier.*

As mentioned earlier, problems also annoy the teachers and causes added losses in time and effort. Mustafa agreeably expresses this in a direct way:

*DynEd contributes to students' listening and speaking skills. However, DynEd program's installation, first of all, made us - the teachers - struggle. There is no return even from the tiniest mistake that is made, and you get to erase all the work you have done. As a teacher, I remember that I had to erase five classes and reenter all of their information.*

The other complaint comes from the fact that dealing with the usernames and passwords (basically the computer matters) is not officially and technically the responsibility of the teachers. Teachers do not accept this kind of work as their field of study. And sometimes they feel really not knowledgeable about these information or computer technology subjects. In about half of the cases, the teachers teaching computer technology in respective schools helped English teachers to establish the system. In some others the computers teachers were present at the initial stages (installation of the program) and they withdrew from the process gradually, leaving the workload (creation of the usernames) on the English teachers.

One other complaint is about learning how to use the system. Obviously, it also takes time to get used to the system. Facing many other responsibilities, teachers do not have extra time to spare learning new things. Without learning the system, it is not possible to use it effectively in the classroom, not to mention the need to explain it to the students.

One final complaint is about the support the teachers need when dealing with the system. Students at home encounter problems. Solving those problems also fall on the shoulders of the teachers teaching English.

The last three issues are brought up by one or two teachers during our interviews but they are relevant ones. A little investigation to the ministry of education system reveals no actual support for teachers dealing with the technology matters.

#### **4.4. Motivation in means of Job Satisfaction Issues (İş Memnuniyetine Yönelik Motivasyon)**

Many teachers see being an English teacher as an opportunity. English is accepted as a global language in the world in interaction between countries in terms of either commercial or communication. English course is appealing and popular. It draws attention to meet this important need. As well as students, families also pay attention to learning English as a second language. Some of the interviewees indicated that after the students had used DynEd program, their interest certainly increased in the positive sense. This gives rise to increase in the teacher's interest to teach. For example, Seda mentioned,

*"you know, Seeing other people around willing to learn, teacher is more willing to teach. "*

Using different types of teaching methods like playing games, singing and using different types of is a good way to communicate with students.

#### **4.5. Motivation in means of Incentives - Positive Approach Issues (Teşvikler Sayesinde Motivasyon - Pozitif Yaklaşım İlgili Konular)**

After the Ministry of Education decided to use DynEd, in-service trainings were organized to introduce the system to English teachers who were selected from different secondary schools. From each school, only one teacher was selected as a school coordinator to introduce the system and organizes the administration activities for his/her school. Some of the teachers were not happy to have the full responsibility of DynEd, but, the rest were happy to use it and to spread out its usage. For example, Seda mentioned that:

*"I had to deal with DynEd. I was on my own. But I engaged in dealing with DynEd. Now, I can say that it was good to deal with. I can say that I started to like using technology. Technology is a beautiful thing to use."*

Almost the entire teacher sample we interviewed agreed that students show positive attitude towards the course and learn more when audio and visual materials are present. When the students used DynEd, they showed the same reaction. Ahmet, one of the interviewed teachers indicates that "we should take advantage of technologies like DynEd that provides permanent learning with an easy way. . Students like using such learning materials. They remember more, I think..."

When teachers were asked whether they would like to use DynEd or not if they have the choice, many teachers indicated that they would prefer to use it. They think that such programs provide permanent learning. In addition to that, they think that such technologies should be used more often. One of the interviewees indicates that such systems would be more systematic and organized.

#### **4.6. Motivation in means of Incentives - Negative Approach Issues (Teşvikler Sayesinde Motivasyon - Olumsuz Yaklaşımla İlgili Konular)**

When students had started to use the DynEd system, they had great enthusiasm to use it. Unfortunately, because of the fact that the problems that are encountered in the DynEd system are listed in Attitudes in General heading, interest and curiosity of students' has reduced. Although the teachers tried to motivate the students to use the DynEd system, they could not because of the problems with the system. For some of the students, one of the reasons not to use it was that they did not have computer at home because of economic reasons. Seher, one of the interviewed teachers indicates "there is no case for teacher to force students to use. There is no way to grade the students according to their utilization rate or something different. Every student does not have equal chance to use the system." Despite all the efforts, this reluctance of students also caused a decrease in motivation of teachers to use the system. Some of the teachers felt desperate. They did not get support from anywhere to encourage students to use the system.

In addition to having continuous connection problems, having difficulties related to the audio recording, even among who can connect to system and use it, interrupt (disturb) motivation of students. One of the interviewees indicated that in our school we let students that do not have computer at home to study English in their free times. But, not having required audio hardware's decreases the usability of the system.

Almost all of the teachers criticized that DynEd system were not clearly explained, and they did not know how the system grades the students' work. Sevim, one of the interviewed teachers indicates that "I have some preconceptions about the system. One of my colleagues became the coordinator of our school and did not explain everything about it. There should be practical in-service training." Although the students use the system every day for hours, their grades are always negative. Some of the students and even some of the teachers did not know how a grade can be turned into a positive score or even a higher score. To accomplish that one should always record voice, listen to audio and voice and repeat contents consistently. However, the students who know to study in this manner get bored in repeating everlastingly.

When the teacher was asked whether they would like to use DynEd or not, some of them did not want to use it. Erdem, one of the interviewed teachers indicates that content outline of the program did not match with English course curriculum. In addition to that, they even do not have any computer laboratory to use the system in their school. Moreover, he states that their students do not use DynEd.

#### **5. DISCUSSION AND CONCLUSIONS (TARTIŞMA VE SONUÇLAR)**

In order to answer the research questions, the results were grouped into several themes organized under attitudes and motivation: attitudes regarding the teacher use of the program and student use of the program; motivation in means of workload, job satisfaction, constructive incentives, and adverse incentives.

In sum, majority of the teachers have expressed positive feelings about the use of DynEd as a part of their classroom practices but this was true only if the problems of the system were resolved. Previous research also indicates that technical problems are potential barriers in integration of computers into the educational settings (Becker & Ravitz, 2001; Foon Hew & Brush, 2007; Hayes, 2007; Mueller, Wood, & Willoughby, 2007; Mueller et al, 2008). All participants



reported that DynEd had problems and that these problems diminish their desire to use it, but even then DynEd is a distinct system students have not experienced such widely before. Many teachers see DynEd as an opportunity for their students. They indicate that students are better able to explore technology compared to adults. Given the opportunity, they shall make benefit of it.

One of the major drawbacks of the DynEd system is the tremendous time it requires for administrating. Although this reduces the teacher's motivation - as stated previously - most teachers still prefer to use DynEd. Many times teachers brought up the pedagogical issues when talking about their attitudes in terms of the system's benefit to the students. They mentioned that DynEd draws more student attention in lessons. It enhances speaking and practicing words and phrases. As McGrail (2005) mentioned, some teachers' beliefs about technology affects the integration of the system into their classrooms. In addition, some of them think that content offered in the program does not match with the curriculum of the English courses administered by the Ministry of Education.

#### **ACKNOWLEDGMENT (TEŞEKKÜR)**

This Project is supported by Uludağ University Scientific Research Projects Coordination Unit (proje No: 2009/47).

#### **NOTICE (NOT)**

In this study, 22-24 September 2011 in Elazığ between the "(ICITS-2011) 5 International Computer and Instructional Technologies Symposium" presented as an oral presentation in.

#### **REFERENCES (KAYNAKLAR)**

1. Ates, A., Altunay, U., and Altun, E., (2006). The effects of computer assisted English instruction on high school preparatory students' attitudes towards computers and English. *Journal of Theory and Practice in Education*, 2(2), 97-112.
2. Ayres, R., (2002). Learner attitudes towards the use of CALL. *Computer-Assisted Language Learning Journal*, 15(3), 241-249.
3. Becker, H.J. and Ravitz, J.L., (2001). Computer use by teachers: Are Cuban's predictions correct? Paper presented at the annual meeting of the American educational research association, Seattle, Washington, March, 2001.
4. Chen, F.H., Looi, C.K., and Chen, W., (2009). Integrating technology in the classroom: a visual conceptualization of teachers' knowledge, goals and beliefs. *Journal of Computer Assisted Learning*, 25, 470-488.
5. Cuban, L., Kirkpatrick, H., and Peck, C., (2001). High access and low use of technologies in high school classrooms: Explaining an apparent paradox. *American Educational Research Journal*, 38, 813-834.
6. Foon Hew, K. and Brush, T., (2007). Integrating technology into K-12 teaching and learning: Current knowledge gaps and recommendations for future research. *Educational Technology Research Development*, 55, 223-252.
7. Hayes, D., (2007). ICT and learning: Lessons from Australian classrooms. *Computers and Education*, 49, 385-395.
8. Heller, I., (2005). Learner experiences and CALL-tool usability 7 Evaluating the Chemnitz Internet Grammar. *Computer Assisted Language Learning*, 18(1-2), 119-142.
9. Jamieson, J., Chapelle, C., and Preiss, S., (2005). CALL evaluations by developers, a teacher, and students. *CALICO Journal*, 22(1), 93-138.

10. Kessler, G., (2007). Formal and Informal CALL Preparation and Teacher Attitude Toward Technology. *Computer Assisted Language Learning*, 20(2), 173-188.
11. Kirkgoz, Y., (2008). A case study of teachers' implementation of curriculum innovation in English language teaching in Turkish primary education. *Teaching and Teacher Education*, 24, 1859-1875.
12. McGrail, E., (2005). Teachers, technology, and change: English teachers' perspectives. *Journal of Technology and Teacher Education*, 13, 5-24.
13. Miles, M.B. and Huberman, A.M., (1994). Qualitative data analysis: An expended source book. Thousand Oaks: Sage Publications.
14. Mishra, P. and Koehler, M.J., (2006). Technological pedagogical content knowledge: A framework for teacher knowledge. *Teachers College Record*, 108, 1017-1054.
15. Mueller, J., Wood, E., and Willoughby, T., (2007). The culture of computers among teachers. In E. Wood & T. Willoughy (Eds.), *Children learning in a digital world*. Oxford, UK: Blackwell Publishing
16. Mueller, J., Wood, E., Willoughby, T., Ross, C., and Specht, J., (2008) Identifying discriminating variables between teachers who fully integrate computers and teachers with limited integration. *Computers & Education*, 51, 1523-1537.
17. Ryan, G.W. and Bernard, H.R., (2000). Data management and analysis methods. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (2nd ed., pp. 769-802). Thousand Oaks: Sage Publications, Inc.
18. Schofield, J., (1995). *Computers and classroom culture*. Cambridge: Cambridge University Press.
19. Vodanovich, S.J. and Piotrowski, C., (2004 - 2005). Faculty attitudes toward web-based instruction may not be enough: Limited use and obstacles to implementation. *Journal of Educational Technology Systems*, 33, 309 - 318.
20. Stake, R.E., (1995). *The art of case study research*. Thousand Oaks: Sage Publications.
21. Trochim, W.M.K., (2006, 10/20/2006). Introduction to validity. The Research Methods Knowledge Base, 2nd Edition [On-line]. Retrieved May 15, 2011, from <http://www.socialresearchmethods.net/kb/introval.htm>
22. Wozney, L., Venkatesh, V., and Abrami, P.C., (2006). Implementing computer technologies: Teachers' perceptions and practices. *Journal of Technology and Teacher Education*, 14, 120-173.
23. Zhao, Y., Pugh, K., Sheldon, S., and Byers, J.L., (2002). Conditions for classroom technology innovations. *Teachers College Record*, 104, 482-515.