The Use of Computer Skills in Teaching and Administration Support

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Abstract

This study aims at investigating teachers' perceptions toward the barriers that face teachers during the process of using computer applications in teaching. More specifically, this tries to answer the following main questions: (1) Are there any differences in the degree of challenges facing teachers during the process of using their ICDL skills in their teaching that are related to the level of administration support? and (2) Are there statistically significant differences in the degree of challenges facing teachers during the study process of using their ICDL skills in teaching that are related to the degree of support administration with respect to the level of education, gender, work experience, subject, the date the ICDL certificate gained, and the level of students? Participants of this study were 203 teachers with different areas of specializations who have an ICDL license and who teach different levels (elementary and secondary levels) at Irbid school districts. Results indicated that teachers training programs need to concentrate more on

helping teachers apply new computer skills in their teaching. They need more time and support from their school administration, which will give them a chance to practice what they learn. Also, teachers need administration follow up and encouragement to use new skills in teaching.

(ICDL, computer skills, teacher training, administration support, and technology change).

INTRODUCTION

Coming together is beginning Keeping together is progress Working together is success [Henry-Ford (1863-1947) (Conserva-pedia, 2008)]. For the purposes of this study we will look to Fiedler and Garcia (1987, 75) who refers to leadership as a part of an organization's or agency's management that deals with the supervision and direction of that organization. We will also refer to Hersey and Blanchard (1969, 26) who define leadership as: "occurring any time one attempts to influence the behavior of an individual or group." According to Seagren et al (1993, 5), the power of making decisions lies at the bottom of the university structure rather than the top.

All school efforts tend to improve students' learning. For that, school administrations have to focus on improving teacher teaching skills by developing a strategic plan that supports students' and teachers' needs, and provides the necessary tools to support the implementation of the plan. Lick (2001, 22) explains that the key for leadership in technological change in higher education is to balance between effective leadership and effective management. In higher education leaders always Focus more on management. For leaders to implement technological change in an institution they need to take responsibility for making changes, define their plan for the change effectively, prepare the organization for the change comprehensively, and develop and implement an approach to change that transforms people, processes, and circumstances.

Edelson (1992, 23) stated that any changes administrations agree with it is purposes and it is effectiveness in improving students learning skills should have a leadership plan to help students and teachers during the changing process. School administration should have an effective leadership characteristic to make a difference in students computer skills because they need to make teachers improve their computer skills, understand that computer skills will improve students' learning, and convince their students of the importance of using computer to assess their learning.

LITERATURE REVIEW

Leadership and Change Strategies:

Change strategies fall into six categories: (a) change the environment; (b) change the type of person in the organization; (c) address values; (d) change the way the department is structured in terms of organization, leadership positions, reward system, or form of decision making; (e) affect the decision-making process in which the department is engaged; and (f) create alternative structures (Walvoord et al, 2000, 20).

According to Robbins and Coulter (1996, 35), organization leaders need to employ a few techniques to reduce the resistance for change in their organizations. These techniques are: (a) discuss the need for and the reason behind the change with the members of the organization; (b) involve members in decisions regarding planning the process to implement the new change; (c) train and support the members to master the required skills and learn how to adjust to the new work situation; and (d) negotiate with people who oppose the change.

An experienced leader in Scotland stated that in order to work properly in a department or in an organization as a chair one needs more time to develop his/her leadership skills, better support facilities within the university, an understanding of the academic process, and sufficient support (Knight, 2001, 121) .

Leaders today need to view their organizations from multiple perspectives. Organizations can be complex, surprising, deceptive, ambiguous, and changing. For leaders to be successful, they have to be flexible, accessible, aware, and skilled to foresee the unexpected and plan for the unknown. Knight (2001) stated that the leader as a department representative should be seen as one who can follow up ideas within the proposal, contribution, and on time. A leader who is having good ideas about improving the department's working environment should have a plan to implement his ideas to improve learning. According to Lucas (1994, 60) the department chair is faced with the following responsibilities: Articulate a shared vision; empower staff in the

department by encouraging positive communication; motivate staff to be more productive; motivate staff to improve their teaching; motivate staff to develop their scholarship; promote a plan for feedback to energize staff learning; encourage staff to make more commitments to serve others; have a conflict resolution plan; and improve management skills as a leader. Leaders fail when they take too narrow view of the context in which they are working. Unless they can think flexibly about organizations and see them from multiple angles, they will be unable to deal with the full range of issues that they will inevitably encounter.

Edelson (1992, 23) indicated that there are specific characteristics of leaders in adult education. A leader is one who shapes the organization's goals, provides guidance and motivation for others, functions in complex situations, and constructs well-defined roles. Leadership responsibilities are to prepare colleagues to accept greater responsibility for directing their own works, developing their own approaches, and providing feedback that can be in the form of meetings, reports, and conversations. Parks and Edelson (1992, 65) concluded that leadership in adult education focuses on providing supports, challenge, and vision to their organizations. The leaders in adult education are skilled in working with others, caring about the welfare of their colleagues and staff. They grow and apply their skills and create a climate of trust in their organization, and understanding that their success is dependent on the success of the people who are working with them. They also serve as a mentor to the people in the organization and foster the growth and development of the people around them in the organization. Most of the time leaders are held accountable for the output of their organization.

McGaughey (1992, 6) said, "An increasingly pluralistic higher education environment demands that its leadership acknowledge, understand, and guide the new and emerging values and beliefs that are reshaping institutional culture: " He stated that the leader is the one who maintains balance in setting the priorities to organize his responsibilities and get things done, manages limited resources of the department or organization, and creates a future vision for the department. McGaughey stated that the effective leader should be a good communicator, a problem

solver, and a decision maker. He also should shape and support the culture of his unit, department, or organization.

Galanes and Brilhart (1994, 30) concluded that each group has a leader. Most groups expect their leaders to provide services to their group. These services include: administrative duties, leading group discussions, developing the group, and managing the group's written communications. The group leader's focus in administrative duties includes planning for the group meetings by making all the arrangements for the group to meet and following up on members' assignments by keeping in touch with the group members. One of the most important duties for the group leader is to coordinate group discussion. Group leaders accomplish this by organizing the discussion, encouraging all of the group members to participate as creative and critical thinkers, and by observing the group's accomplishments.

Gokce (2009, 198) conducted a study to determine the behavior of principles in Turkish elementary schools toward change. using the interview instrument to gather information for this study, eighty elementary schools principles and two hundreds eighty elementary schools teachers were interviewed. The study found that most teachers agree that principals need to spend more effort for the process of change. The study concluded that designing training programs that focus on the improvement process and the best practice to make school changes.

Panuel et al (2007, 921) examine the characteristics of the effective professional development programs. The sample of the study consists of 454 teachers. The researchers used a survey instrument that was analyzed by 28 professional development providers. The study concluded that teachers' perceptions should be considered during the planning for the development of any training program. They found that to make a successful change process administrators need to support teachers during the process of making changes in schools by having a time for plan for implementation and having a technical support.

Technology and barriers

Communication technologies became part of k-12 and higher education in the 1960's, 70's, and 80's. Educators during this time used televised courses, mainframe computers, programming languages, computerized statistical analyses, and other technologies. In the 1990s, educators continued to increase the use of technology in their teaching. There are many reasons behind this increase. First, computers can be found on most employee desks, in student homes, and in faculty offices and homes. Second, distance learning became part of most institutions courses delivery systems. Third, educators use computers for administrative roles, for example, via email, Internet resources, voice mail, designing students' records, and television conferences. The last reason behind the increased use of computers in higher education is that some institutions applied computer applications (such as distance learning) as a method for making money (Enghagen, 1997, 98).

The popularity of using computers in education can easily appear as a threat to teachers. Implementing computers in the curriculum will increase the teachers workload, as they need to be available and reach more students through more communication modes. Some teachers see the use of technology as a threat to their freedom because the administration can monitor their emails and internet access. Other problems facing the use of technology in education include the shortage of funding that affects the availability of teachers training programs (Enghagen, 1997, 120). Due to the variety of barriers teachers often fail to import technology in their teaching in a professional way. Barriers are defined as any factor preventing or restricting teacher's use of technology in the classroom (Becta, 2003, 1). Obstacles facing the technology implementation process may be related to many issues such as limited internet access and insufficient software licenses (Shamburg, 2004, 227). The development of teachers' computers skills requires having a free time for teachers to focus on implementing the new skills in their teaching (Smith, 2001, 37).

According to a variety of researchers, transitioning teachers from novice technology users to effective technology integrators who

support students learning process takes three to five years (Mckenzie, 2001, 2). For teachers to immediate us of their new computer skills in their classes, professional development planners need to consider that there is a need for more sufficient time for instruction and practice of technology skills, to provide necessary materials, and to have an evaluation plan of the teachers professional development efforts (Brinkerhoff, 2006, 22).

Purpose of the Study and Research Questions:

The purpose of this study is to investigate the challenges facing teachers working with computer applications to instruct students. It focused on the support that teachers have from their schools administration to make the required change. It is very important to train teachers to use technology and computer applications in their schools, but this required a fully administration support during the process of change.

The following research questions guide the study:

1. Are there any differences in the challenges that facing teachers ICDL skills related to the degree of administration support?

2. Are there statistically significant differences in the degree of challenges facing teachers' ICDL skills with respect to: level of education, gender, work experience, subject, date the ICDL certificate was gained and the level of the students?

METHOD

Participants:

Participants of this study were 203 teachers who were chosen randomly with different areas of specializations who have an ICDL license and who teach different levels (elementary and secondary levels) at Irbid school districts. Sample Frequencies and percentages according to independent variables are shown in Table (1).

Table1: Sample Frequencies and percentages according to independent variables

Variable	Groups	Frequency	Percent
Highest degree	2yr college	21	10.3
	4 yr college	124	61.1
	high Diploma	22	10.8
	MA	36	17.7
Gender	Male	83	40.9
	Female	120	59.1
Work Experience	less than 5 yrs	34	16.7
	between 5-10 yrs	49	24.1
	more than 10 years	120	59.1
Subject	Math	22	10.8
	Computer	16	7.9
	Languages	57	28.1
	Islamic Study	26	12.8
	Social Studies	11	5.4
	Science	42	20.7
	Others	29	14.3
Date Received the ICDL Certificate	less than 1 yr	36	17.7
	between 1-less than 3 yrs	83	40.9
	between 3-5 yrs	67	33.0
	more than 5 yrs	17	8.4
The level I teach	elementary level	64	31.5
	secondary level	63	31.0
	high school level	76	37.4
	Total	203	100.0

INSTRUMENTS

Questionnaire:

By reviewing the research that focused on administration support during the process of change, a 10 items questionnaire instrument was developed by the researcher. The questions were focused on difficulties facing teachers in relation to administration roles regarding the process of

adapting the technology change. The instrument also included questions about major, experience, teaching level. The participants' responses were marked directly on the survey. The questionnaire instrument was designed to gather information about challenges that face teachers during technology implementations and the level of administration support during the implementation process.

To ensure the validity of the research instrument, it was sent to five faculty members. The faculty members were asked to evaluate the instrument and make any recommendations that could help improve the instrument of the study. Comments were sent back and some recommendations were taken into consideration.

Reliability indicates the accuracy or precision of the measuring instrument (Norland, 1990, 23). To ensure the reliability of the research instrument, it was applied to (30) teachers who were chosen randomly with different areas of specializations from the population of the study who were excluded from the sample. The results were correlated using Cronbach Alpha formula and the score was 0.85 which indicates a good reliability**.**

Procedure:

The researcher took permission from the Ministry of Education to conduct this research and ensure help from Irbid Schools District. The study was conducted during the 2006-2007 academic year. Participants were chosen randomly from the three school districts (First, Second, Third Irbid school district). The questionnaire instrument was sent to each selected school. Teachers who had the ICDL license were asked to fill out the questionnaire. Then, the researcher started the process of analyzing the data.

RESULTS AND DISCUSSION

Results related to the first question:

To answer the first question of the study, "Are there any differences in the degree of challenges that facing teacher's ICDL skills during the process of using their ICDL skills in their teaching that are related to the degree of administration support,?", Means, Standard Deviations according to Independent Variables were computed as

presented in table 2.

Table 2: Means and standard deviations for items concerning challenges facing the use of computer applications, ranked in descending order

Rank	N	Item	Mean	Std. Deviation
1	8	Not rewarding the teachers who use computer applications that discourage me to use it	3.40	1.38
2	5	There are no Internet connection on my school or technical support	3.34	1.52
3	4	I have no time to use the computer applications we learned from the ICDL training	3.23	1.27
4	3	There are no encouragement from the school administration to use computer applications	3.07	1.42
5	7	The ICDL training does not teach us how to connect the computer skills in our teaching	3.06	1.34
6	10	One of the challenges we have that, not having a specialist in computer education on our school	2.84	1.38
7	9	We do not have follow up or evaluation process from the school district that does not encourage me to use computer applications on my teaching	2.71	1.21
8	2	We do not have computer labs for teachers to help us use the computer applications we learned from the ICDL training	2.61	1.22
9	6	Not having personal computer at home, does not encourage me to use computer applications on my teaching	2.54	1.48
10	1	I don't want to use the computer applications in my teaching	2.32	1.11
Total		Challenges Facing the Use of Computer Applications	2.91	0.81

Table (2) shows that Item 8 " Not rewarding the teachers who use computer applications that discourage me to use it " received the highest mean (3.40) regarding the degree of challenges facing the use of computer applications followed by item 5 " There are no Internet connection on my school " with mean (3.34) while item 4 " I have no time to use the computer applications we learned from the ICDL training " was ranked third with mean (3.23). This table also shows that item 1" I don't want to use the computer applications in my teaching " occupies the last rank (mean = 2.32). Total mean for all items was (2.91).

Results related to the second question:

To answer the second question of the study, "Are there statistically significant differences in the degree of challenges that teachers face during the process of using their ICDL skills in teaching that are related to the degree of administration support with respect to: level of education, gender, work experience, subject, date the ICDL certificate received, and the level of the students?", Means, Standard Deviations according to Independent Variables were computed as presented in table 3.

Table3: Means, Standard Deviations according to Independent Variables.

Variable	Groups	Mean	Std. Deviation
Highest degree	2yr college	3.04	0.77
	4 yr college	2.96	0.78
	high Diploma	2.78	0.96
	MA	2.76	0.83
Gender	Male	3.05	0.80
	Female	2.82	0.80
Work Experience	less than 5 yrs	2.75	0.77
	between 5-10 yrs	2.92	0.81
	more than 10 years	2.95	0.82
Subject	Math	3.03	0.94
	Computer	2.71	0.77
	Languages	2.84	0.78
	Islamic Study	2.76	0.78
	Social Studies	2.51	0.78
	Science	2.94	0.79
	Others	3.32	0.74
Date Received the ICDL Certificate	less than 1 yr	3.07	0.64
	between 1-less than 3 yrs	2.96	0.85
	between 3-5 yrs	2.88	0.79
	more than 5 yrs	2.45	0.90
The level I teach	elementary level	2.80	0.86
	secondary level	2.90	0.80
	high school level	3.02	0.77

Table 3 shows a slight variance in the means of the challenges facing the use of computer applications according to independent variables, to find out whether there are statistically significant differences in these means, six way ANOVA was conducted and the results are shown in table 4.

Table 4: Six way ANOVA results of challenges facing the use of computer applications related to Highest Degree, Gender, Work Experience, Subject, Date Received the ICDL Certificate and The Level I Teach variables.

Source	Sum of Squares	Df	Mean Square	F	Sig.
Highest degree	3.446	3	1.149	1.962	0.121
Gender	6.068	1	6.068	10.365	0.002*
Work Experience	0.845	2	0.422	0.722	0.487
Subject	9.230	6	1.538	2.628	0.018*
Date Received the ICDL Certificate	4.724	3	1.575	2.689	0.048*
The level I teach	1.772	2	0.886	1.514	0.223
Error	108.307	185	0.585		
Corrected Total	131.912	202			

* significant differences at (α= 0.05).

Table 4 shows:

- There are no statistically significant differences at (α = 0.05) in the challenges facing the use of computer applications due to the highest degree variable.

- There are statistically significant differences at (α = 0.05) in the challenges facing the use of computer applications due to the gender variable in favor of males.

- There are no statistically significant differences at (α = 0.05) in the challenges facing the use of computer applications due to the work experience variable.

- There are statistically significant differences at (α = 0.05) in the challenges facing the use of computer applications due to the subject variable, Post-hoc pair wise comparisons are shown in Table 5

- There are statistically significant differences at (α = 0.05) in the challenges facing the use of computer applications due to the Date the ICDL Certificate Received variable, Post-hoc pair wise comparisons are shown in Table 6.

- There are no statistically significant differences at (α = 0.05) in the challenges facing the use of computer applications due to The level I teach variable.

Table 5: Post-hoc pair wise comparisons using Tukey method for The level I teach effect.

	Mean	Math	Computer	Languages	Islamic Study	Social Studies	Science
Math	3.03						
Computer	2.71	0.31					
Languages	2.84	0.19	0.13				
Islamic Study	2.76	0.27	0.05	0.08			
Social Studies	2.51	0.52	0.20	0.33	0.25		
Science	2.94	0.08	0.23	0.10	0.18	0.43	
Others	3.32	0.29	0.61	0.48	0.56	0.81*	0.38

* Significant differences at (α = 0.05).

Table 5 shows:

- There are statistically significant differences at (α = 0.05) between ' Social Studies' group and 'Others' group in favor of 'Others' group.

Table 6: Post-hoc pair wise comparisons using Tukey method for experience effect.

	Means	less than 1 yr	1-less than 3 yrs	3-5 yrs	more than 5 yrs
less than 1 yrs	3.07				
1-less than 3 yrs	2.96	0.11			
3-5 yrs	2.88	0.19	0.09		
more than 5 yrs	2.45	0.62*	0.51	0.42	

* Significant differences at (α = 0.05).

Table 6 shows:

-There are statistically significant differences at ($\alpha = 0.05$) between 'less than 1 year' group and ‘more than 5 yrs' group in favor of 'less than 1 year' group.

The main aim of this study is to investigate teachers’ perceptions towards the barriers they face during the process of using computer applications in teaching. Overall, the results of the study revealed the following:

1. The most challenges facing the use of computer applications in teaching are:

a) Not rewarding the teachers who use computer applications (item 8), this barrier discourages teachers from making any good step toward changing their teaching by implementing their new computer skills in their teaching. Teachers need to have an administration appreciation and reward for their effort to make a change toward the use of technology in their teaching.

b) There is no Internet connection in my school or technical support (item 5). The use of the internet to support technology implementation process is very important. It should make communication with other educators in the same fields easier. It should also improve communication with the administration. This problem should be solved by the effort of the school administration and the school district. Teachers who also use technology for the first time in their teaching need to have a technical support that solves teachers’ technical problems in the time they need it. The researcher agrees that the lack of access to information and communication technology equipment due to not having an internet connection and lack of technical support are considered as a school-level barrier, matters that are related to the institution administrations (Cuban et al, 2001, 813; & Preston et al, 2000)

C) No time to use the computer applications (item 4). Teachers have many responsibilities and a full teaching load. After they get their

ICDL training program and receive their ICDL certificate they need to start thinking of applying their new skills in their teaching. This process will take time and effort from teachers, for that reason, administrators have the responsibility to free some time for teachers to support their process of making change in their teaching by using technology tools that support students learning process. As the researchers found, a lack of time for formal training, self-directed exploration, making change on instruction considered as a major challenge for teachers (Fabry & Higgs, 1997, 385),

d) There is no encouragement from the school administration to use computer applications (item 3). It is an important issue to have the administration support and encourage teachers to use technology in many ways such as: communicate with teachers regarding their needs, and have group support that gives teachers a chance to talk about their experiences and problems with other teachers who're working in the same field. The researchers reported that the lack of institutional support through leadership, planning and the involvement of teachers as well as managers in implementing change can be considered as barriers for technology change in public schools .
(Larner & Timberlake, 1995,).

e) The ICDL training does not teach us how to connect the computer skills in our teaching (item 7). Teaching teachers new computer skills is not enough to implement a technology change at schools. Teachers need training programs that teach them new computer skills at the same time teach them how to use these new skills in their teaching. Past research on technology adoption shows that the lack of training focusing on integrating technology in the classroom rather than simply teaching basic skills is one of the challenges that facing the use of the technology on teaching (VanFossen, 1999).

2. There are no statistically significant differences at ($\alpha = 0.05$) in the challenges facing the use of computer applications due to the highest degree variable.
3. There are no statistically significant differences at ($\alpha = 0.05$) in the challenges facing the use of computer applications due to work experience
4. There are no statistically significant differences at ($\alpha = 0.05$) in the challenges facing the use of computer applications due to the level I

teach variable.

5. There are statistically significant differences at ($\alpha = 0.05$) in the challenges facing the use of computer applications due to gender variable, in favor of males.
6. There are statistically significant differences at ($\alpha = 0.05$) in the challenges facing the use of computer applications due to subject variable, Post-hoc pair wise comparisons are shown in Table 5
7. There are statistically significant differences at ($\alpha = 0.05$) in the challenges facing the use of computer applications due to Date Received the ICDL Certificate variable, Post-hoc pair wise comparisons are shown in Table 6.

Conclusion and Recommendations

In conclusion, this research aimed at evaluating the process of implementing the ICDL program. Evaluating the degree of success of the program can be measured by finding that teachers implement computer skills which they learn from the program in classrooms. And also by finding that teachers made a change that helps students use computers applications. It seems that teachers training programs need to concentrate more on helping teachers apply new skills in teaching and have more time and effort to give teachers a chance to practice what they learn. Also, teachers need administration follow up and encouragement to use new skills in teaching.

Further research needs to be conducted to determine the evaluation process that should be conducting to improve teachers' computer skills and encourage administration to design a supportive program to help teachers with the technology change. Conducting a research that focus on designing a training program that help school administration administer the process of change by focusing on teachers needs.

References

a. Becta. (2003). "Key research evidence about barriers to the use of ICT", Retrieved April 2, 2004 from: http://www.becta.org.uk/research/ictrn/. Report Becta ICT Research.

2- Brinkerhoff, J. (2006). "Effects of a Long-Duration, Professional Development Academy on Technology Skills, Computer self-efficacy, and Technology Integration Beliefs and Practices", Journal of Research on Technology in Education, 39 (1), 22-28.

Conserva-pedia (2008). "Henry_Ford", Retrieved October 1, 2007 from: http://www.conservapedia.com/Henry_Ford.

4- Cuban, L., Kirkpatrick, H.; & Peck, C. (2001). "High access and low use of technology in high school classrooms: explaining an apparent paradox", American Educational Research Journal, 38 (4), 813–834.

a. Edelson, P. (1992). "Rethinking leadership in adult and continuing education: New directions for adult and continuing education: rethinking leadership in adult and continuing education", In. Edelson, P. (Eds.), Jossey-bass publisher, U.S.A.

5- Enghagen, L., ed. (1997). "Technology and higher education", National Education Association, (LB2324 .T24), Washington, D.C., U.S.A.

6- Fabry, D., & Higgs, J. (1997). "Barriers to the effective use of technology in education", Journal of Educational Computing, 17 (4), 385–395.

a. Fiedler, F., & Garica, J. (1987). "New approaches to effective leadership: Cognitive resources and organizational performance", John Wiley & Sons, New York, U.S.A.

7- Hersey, P., & Blanchard, K.H. (1969). "Life cycle theory of leadership", Training and Development Journal, 5, 26-34.

8- Galanes, G. and Brilhart, J. (1994). "Communicating in groups: applications and skills", Brown Communications, Inc., Wisconsin, U.S.A.

9- Gokce, F. (2009). "Behaviour of Turkish Elementary School Principals in the Change : Analysis of the Perceptions of Both Teachers and School Principals", Educational Management Administration & Leadership, 37(2), 198-215.

10- Knight, L. (2000). "Learning to Collaborate: A study of individual and organizational learning, and inter-organizational relationships", Journal of Strategic Marketing, 8, 121-138.
11- Larner, D. and Timberlake L. (1995). "Teachers with limited computer knowledge: variables affecting use and hints to increase use", The Curry School of Education Report, University of Virginia, U.S.A.
a. Lick, D. (2001). "Leading change: creating the future for education technology", Syllabus, 15(5), 22-24.
12- Lucas, A. F. (1994)."Strengthening departmental leadership: A team-building guide for chairs in colleges and universities (1st ed.)", San Francisco: Jossey-Bass, U.S.A.
13- Mckenzie, J. (2001). "Head of the class", "Electronic School", Retrieved September 3, 2005 from: http://www.electronic-school.com/2001/01/0101f2.html.
14- McGaughey, J. (1992). "Symbolic leadership: redefining relations with the host organization", New directions for adult and continuing education: rethinking leadership in adult and continuing education. In. Edelson, P. (Eds.). Jossey-Bass publisher, U.S.A.
15- Norland-Tilburg, E. V. (1990). "Controlling error in evaluation instruments". Journal of Extension, 28(2), 23-41.
16- Parks, L. & Edelson, P. (1992). "Leadership and staff development: a mentorship model", New directions for adult and continuing education: rethinking leadership in adult and continuing education. In. Edelson, P. (Eds.). Jossey-Bass publisher, U.S.A.
17- Penuel, W. R., Fishman. B., J., Yamaguchi, R., and Gallagher, L., P. (2007). "What Makes Professional Development Effective? Strategies That Foster Curriculum Implementation", American Educational Research Journal, 44(4), 921-958.
18- Preston, C., Cox, M. and Cox, K. (2000). " Teachers as innovators: an evaluation of the motivation of teachers to use Information and Communications Technology", MirandaNet, London.
19- Robbins, S. P., & Coulter, M. (1996). "Managing change and innovation", In Management (5th ed), Upper Saddle River, Pretice-Hall, Inc., NJ, U.S.A.
20- Seagren, A. T., Creswell, J. W., and Wheeler, D. W. (1993). "The department chair: New roles responsibilities, and challenge", ASHE-

ERIC Higher Education Report, No. 1., The George Washington University, Washington, D.C., U.S.A. 5-12.

21- Shamburg, C., (2004). "Conditions that inhibit the integration of technology for urban early childhood teachers", Presented at Information Technology in Childhood Education Annual, U.S.A., 227-244.

22- Smith, S. M. (2001). "The four sources of influence on computer self-efficacy", Delta Pi Epsilon Journal, 43(1), 37-49.

23- Vanfossen, P. (1999). "Teachers would have to be crazy not to use the Internet!: secondary social studies teachers in Indiana", Paper presented at the annual meeting of the National Council for the Social Studies, Orlando, FL, U.S.A.

24- Walvoord, B., E.; Carey, A., K.; Smith, H., L.; Soled, S., W.; Way, P., K.; Zorn, D., (2000). "Academic Departments: How They Work, How They Change", ASHE-ERIC Higher Education Report, 27(8). 20-32, ED447746.

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