Lecturers and Educational Technology: Factors affecting educational technology adoption in teaching

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Abstract: The purpose of the study is to explore the main factors affecting educational technology adoption in lecturers' teaching duty in one Iran University, Shahid Beheshti. Respondents include Assistant, Associate and Professors. The lecturers clarified two main factors affecting their adoption of educational technology-based tools for teaching in their class; institutional support, and training and mentoring. Eventually, in line with the findings, lecturers' development in the area of teaching as their main duty could be improved by considering the factors in utilizing new educational technology. Likewise, evidence from the study could be essential for policy makers, technology designers and administrators in higher education.

Keywords: Lecturer, Educational Technology, Professional Development, Teaching

1. Introduction

Frequently, the impact of technology in learning has been recommended for decades [1]. Universities as a learning organization have had remarkable attention to utilizing state-of-art technologies to facilitate their own progress, particularly in the teaching – learning domain [2]. Virtually, lecturers are reluctant to implement educational technology for teaching process because it is stressful and challengeable [3]. Although lecturers have been using different educational technologies, the applications of technical tools are not efficient and effective enough in higher education institutions. In addition, educational apparatuses are used less for instructional purposes while, used more often for research and administrative affairs by lectures [4]

Some salient and meaningful researches show that purchasing updated and complex educational technologies such as softwares and hardwares without commensurate support for lecturers to let them know how to apply in their real situation of teaching aspect cannot be instrumental, unless these apparatuses are injected into their errand and routine activities of teaching in a simple and acceptable ways [5] [6] [7]. On balance, the need to find efficient and effective approaches to motivate, support, and equip lecturers with the proper competencies and skills to integrate technological tools into teaching process is critical and fundamental.

Some studies alluded to various identified factors, the factors include institution support, leadership and effective training and development programs and resources which are all generic items for lecturers to adopt their teaching with technological tools [8] [9] [10] [11].

Moreover, lecturers' beliefs and skills are crucial for utilizing educational technologies in their teaching activity [8] [9] [10] [12]. Likewise, other personal factors such as attitude, propensity, commitment and some external factors like training directions, investing, resources, and institutional support in seamless manner affect the lectures potentiality to integrating educational technologies in their teaching context [5] [12]. Beside this, other notions come into discussion that lecturers accept special technological tools because of other perceptions not in accordance with their actual needs [13] [14].

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Sustainably, integrating technological tools into teaching activity requires constructive professional development strategies such as effective mentoring and in-service training [3] [5]. This integration is like a connector bridge, whereby a trite and less effective approach of teaching transfer to more effective one. Therefore, it is the way of change along with many constraints, which some basic principles should be taken into account for fulfillment.

2. Purpose of Study and Questions

New revolution in Iran's higher education to adapt educational system with ever-changing world of technology is controversial. For achieving Iran's Vision 2025 in the area of higher education changes especially in confrontation with technology all the aspects of higher education system need to adopt properly [15]. In particular, lecturers as the key element for bringing the plans into life are the strategic component to develop higher education system. Hence, without their effective participation for upgrading, imparting, and developing higher education system, especially in teaching-learning sphere, seems meager to accomplish the objectives of Iran's Vision 2025 for higher education reforms.

In order to optimize lecturers for adoption for new educational technologies, the first step should be heeded on identifying factors affecting lecturers' adoption of educational technology-based tools for teaching, which is the utmost objective of the investigation. Two questions were designed to explore from lecturers; (a) How would you describe your background in the line with integrating technological tools in teaching activity? (b) What are the main factors in utilizing new technological tools in teaching?

3. Methodology and Data Analysis

To answer research questions data from 29 lecturers were collected. Lecturers were faculty members of Shahid Beheshti University in Iran. A snowball sampling technique was conducted to collect narrative data and data were analyzed through qualitative approach of content & narrative analysis. Researchers read through 29 narratives and examined the qualitative data for themes. These 29 respondents were from various disciplines including academic and technology leadership. 8 Professors, 13 Associate Professors, and the rest Assistant Professors, among the Assistant Professors nine were engaging in ICT affairs at university. According to literatures, two main themes were considered for analyzing all narratives; institutional support, training and mentoring.

3.1 Institutional Support

Information from respondents based on their experiences demonstrated some challenges which were identified as the noticeable constraints to integrating technological tools in teaching process. They indicated certain points such as unclear policy and planning of using these tools by departments and policy makers, lack of determined time to learning and applying new technology-based tools, no attention from the heads toward allocating and designing remuneration system for using the tools, and conducting explicit evaluation method for monitoring and rectifying methods of teaching, based on new educational technologies. Also many of the respondents complained recent progress system of faculty members which mostly focuses on research and there is no quality-oriented measurement for teaching in higher education system. Moreover lecturers emphasized on the quality of resources such as upgraded hardwares and state-of –art softwares and tools availability.

3.2 Training and mentoring

Many respondents emphasized on planning for continuous training regarding to acquiring and reviewing new technological tools. They believed training could not be narrowed in faculty or their own university. They appealed for dynamic opportunities, for instance in the place of producer companies, other educational institutions, and observing peers. In addition, lecturers indicated that training should be arbitrary and developers should consider an efficient and effective mentoring program in this context. Lecturers also mentioned the mentoring programs for mentoring teaching, based on new technological tools should be very meticulous and soft in designing and conducting, because utilizing these tools brings some sorts of stresses and tensions, let alone being under the monitoring of others. Therefore, the betterment of the procedure needs to provide safe and sound circumstances.

4. Recommendation

Implementing a program in higher education institutions demands strategic and comprehensive planning which should be coincided with current state and ideal state of the institutions based on actual and real needs. So comprehensive needs assessment and unbiased feasibility assessment is necessary for implementing and integrating educational technology tools for teaching. Therefore, not only lecturers as the main users, also other beneficiaries have to engage for identifying actual needs and shortcomings. According to findings from analyzing narratives, integrating technological tools to teaching by lecturers, needs strategic planning and flexibility in three dimensions; policy makers and heads, lecturers' personal attitudes and skills, and students' acceptance. In Addition, establishing the education technology office to lead lecturers for updating and supporting is critical and significant. The following figure1 briefly depicts the study recommendation according to analyzing respondents'' notions.
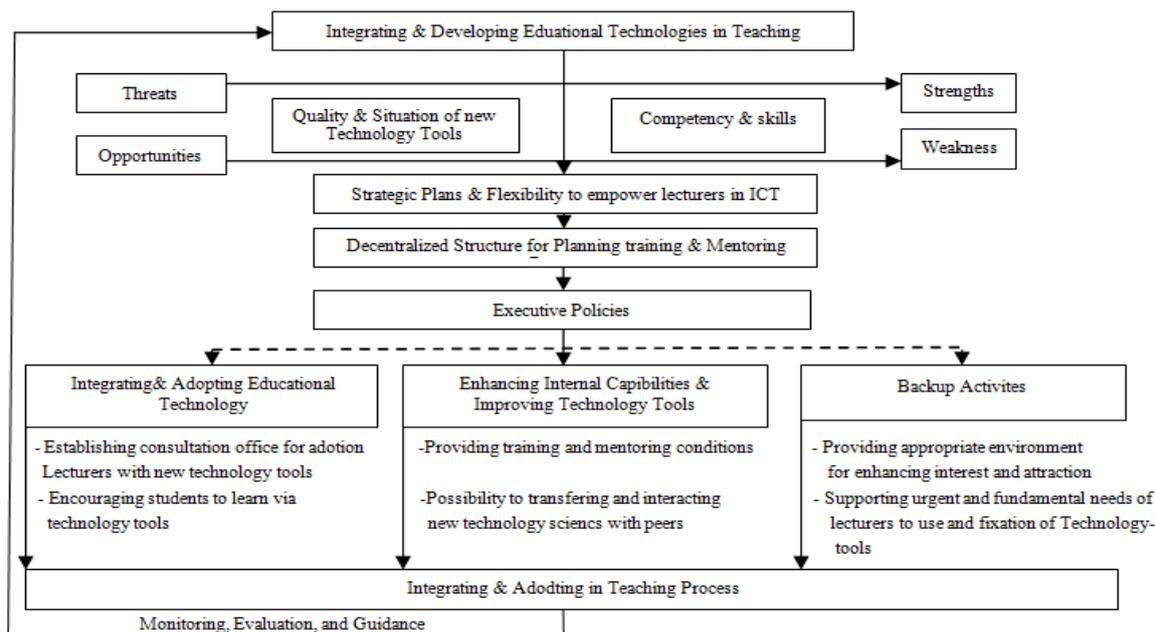

Figure1: Executive policy for implementing technology tools in teaching

5. Conclusion

According to lecturers' narratives integrating educational technological tools in teaching cannot be only confined in lecturers' internal factors such as habits, attitudes, and beliefs. Some factors also are affected the adoption process externally such as departmental policies and programs, updated and upgraded resources, mentoring, training, rewarding, salary increment, and quality evaluation system. These external and internal factors could be instrumental and constructive to pursue lectures for utilizing technologies in their classroom activities. The actual beliefs of lecturers in the effectiveness of educational technology tools can appeal students' attention to a better understanding; hence, students will reaction positively to lecturers and automatically the circle of development is going to be occurred. All in all higher education organizations should strive to conduct dynamic and seamless policy for implementing state-of-art technology tools in teaching process.

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7. References

[1] H.Waxman, Lin. M, Michko GM. A meta-analysis of the effectiveness of recent research on the effects of teaching and learning with technology on student outcomes, 2003. Retrieved July 24, 2007, from http://www.ncrel.org/tech/effects2/

[2] M. Grabe and C. Grabe. Integrating technology for meaningful learning, 5th edn. Houghton Mifflin Company, Boston, 2008.

[3] L. Schrum, R. Skeele, M. Grant. One college of education's effort to infuse technology: a systemic approach to revisioning teaching and learning. J Res Technol Educ.2002, 35(2):256–271

[4] L. Cuban. Oversold and underused: computers in the classroom. Harvard University Press, Cambridge,2001.

[5] L. Hagenson and D. Castle. The integration of technology into teaching by University College of education faculty, 2003. In: Crawford C, Willis DA, Carlsen R, Gibson I, McFerrin K, and Price

[6] F. Balash. The effect of ICT on Ethical Intergeneration Gap. Pub Shahid Beheshti University. Iran, 2008.

[7] J. McKenzie. How teacher learn technology best. From Now On: The Educational Technology Journal, 10(6), 2001. Retrieved January 02, 2008, from http://www.fno.org/mar01/howlearn.html

[8] M. Cushman and E. Klecun. How (Can) non-users engage with technology: bringing in the digitally excluded? In: Trauth E, Howcroft D, Butler T, Fitzgerald B, Gross JD (eds) Social inclusion: societal and organizational implications for information systems. Springer, Boston.2006, pp 347–364

[9] J.Choudrie and YK. Dwivedi. Investigating the research approaches for examining technology adoption issues. J Res Pract.2005, 1(1):1–12

[10] KA. Frank, Y. Zhao, K. Borman Social capital and the diffusion of innovations within organizations: application to the implementation of computer technology in schools. Sociol Educatio. 2004, 77:148–171

[11] L. Sherry, S. Billig, F. Tavalin, D. Gibson. New insights on technology adoption in schools. T.H.E. Journal, 2000, 27(7):43–46

[12] RG. Saade´, F. Nebebe, W. Tan Viability of the ''technology acceptance model'' in multimedia learning environments: a comparative study, 2007. Interdiscip J Knowl Learn Objects 3:175–184

[13] R. Dagada. The impact of the technology acceptance model (TAM) in determining the success or failure of computerintegrated education, 2005. In: Kommers P, Richards G (Eds) Proceedings of world conference on educational multimedia, hypermedia and telecommunications 2005. AACE, Chesapeake, pp 1125–1129

[14] L.Sherry and D. Gibson. The path to teacher leadership. Contemp Issues Technol Teach Educ.2002, 2(2):178–203. Available: http://www.aace.org/dl/index.cfm/fuseaction/View/paperID/10585

[15] A. Heidari. The importance of concidance of higher education development plans with Iran development plans, Iran National 2050 Vision Conference, published by Management & Planning education & Research Assosiation.2006, Vol 3. P 226-235