ICT Immersion in Different Domains of Teaching Profession
- A Literature Review
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ABSTRACT

Information and communication technology (ICT) plays a vital role in various domains of teaching profession. It is directly concerned with different perspectives of teaching and incorporated the teachers to cope with the forthcoming challenges of educational society viz a viz quality and efficiency of education, access to knowledge, flexibility, lack of qualified and skilled teachers, teaching learning activities, high dropout rates and so on. In the present paper researcher explored some of the important domains about the teaching profession with special reference to ICT effective usage and integration as: i) Competency, ii) Motivation, iii) Work Stress, and iv) Accessibility. Comprehensive details of this paper revealed that ICT immersion in different domains of teaching profession strengthen the overall educational system throughout the globe.

Keywords: ICT Immersion; Domains; Teaching Profession.

Teaching is a social phenomenon, involving a series of actions (Dahiya, 2004 p.209). It is a cluster of actions incorporated to uplift an individual by enabling him/her to acquire knowledge, skills, attitudes etc. It is a profession or service of a community or group of individuals know as teachers’. Researchers emphasized various professional elements like competence, professional motivation, work stress, accessibility, dedication, enthusiasm, professional conduct, and so on, greatly influences the teaching profession (OS, 2013; Maphalala, 2014,& Nzulwa, 2014). Undoubtedly enhancing these professional elements, professionalism of teachers ‘get enhanced which in turn will boost present knowledge society. In this era of knowledge society, where ICT is considered as a tool to enhance both tacit as well as explicit knowledge. ICT is one of the basic tenant in teaching profession as it enhances competency, professional motivation, accessibility, enthusiasm, professional conduct, and relieves work stress by integrating all these elements in order to develop a robust educational system.

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DEMAND FOR TECHNOLOGY COMPETENT TEACHING
The development and implementation of ICT expels present educational system to respond towards advanced trends of the modern society which helps in the transformation of society into knowledge economy. ICT placed creative and innovative demands over establishments of education and significantly hold implications for research and teaching of these establishments, particularly on flexible forms and life-long learning of education (Siddiqui, 2004). ICT is referred to as the varied collection of technological gears and resources which are made use of to communicate, generate, disseminate, collect and administer information (Sarkar, 2012, p.31). The significant potential of ICT have enhanced knowledge avenues across diverse populations of modern society. ICT empowers not only educators and policymakers to enhance quality of educational process, but also the learning achievements with the help of innovative technology usage (UNESCO, 2009). ICT improves routine management and functional elements of educational institutions like Timetabling, Student admission, financial management, medical services, procurement management, data distribution and management (Krishnaveni, & Meenakumari, 2010, p.282). In the present era where educational world is rapidly changing and bringing innovative challenges and realities to Teacher Educational, with the new inventions in the ICTs possesses important implications, therefore present Teacher Educational system is being renovated and redesigned in order to adopt the changes taking place worldwide (Kanshal, 2012). The act of ICT in teaching learning offers more student-centered learning settings. Be that as it may, with the world moving quickly into digital media and information, the part of ICT in education is turning out to be more imperative and this significance will keep on developing (Noor Ul Amin, 2013).

RATIONALE OF THE STUDY
In spite of the enormously increasing applications for ICT in contemporary society, several studies indicate that people varies greatly with regard to their level and use of ICT. Various reasons have been proposed to explain such differences, like gender, age, education, access, family culture, computer anxiety, computer usefulness, locale difference, etc. (Lee, 2008, 2010; Wang et al., 2009; Hargittai, 2010). According to Khan (2015) ICT enhanced teaching is based on different conceptions including gaining access to information and resources, as a delivery tool, to prepare students for their future profession, a media for active learning and to meet external expectations. However, ICT is not limited to only web 2.0, automation and knowledge based systems but ICT is the best way to gain sustainable competitive advantage so far as the education is concerned. However, researchers and academicians are skeptical about the fact that ICT has enormously enhanced the profession of a teacher by enhancing positive elements and reducing negative ones like; Competency, Motivation, Accessibility to knowledge & Work Stress.
ENHANCING COMPETENCY WITH ICT

In the modern era ICT is becoming part and parcel of the educational system, ICT has not only became a medium of teaching and learning, but also a supplementary instrument for preparing documentation, assignments, collecting data, communicating and conducting research (Khan 2012). Restructuring of education system is highlighted by the technology integration in each and every aspect of education. Knowledge regarding ICT motivated teachers’ to improve their knowledge and skills. ICT integration into educational practices is familiarized due to reasons as it provides avenues of skill development, plays a significant role in constructive transformation of curriculum & pedagogical practices (Fitzallen, 2005). ICT plays a role of vital instrument used for understanding the concepts of various subjects, like science, mathematics, and so on. Rodrigues et al., (2003). Angeli, & Valanides, (2009), revealed that introduction of ICT as an important element of technological pedagogical content knowledge (TPCK) helps in understanding the knowledge regarding teaching content, pedagogy and synthesizing context how various topics which are challenging to be presented for teachers and difficult to be understood by learners can be renovated and imparted more efficiently with the help of technology, similarly ICT integration shows a positive effect on teachers’ Professionalism (Oner, & Nilay, 2012). Potential of web pages enhance educational requirements like exploring constructive knowledge and information, sustenance and nurture of active learning, improving interconnectivity among various information resources (databases) and enhancing learning in innovative atmosphere (Kubricky & Castkova, 2015).

ICT integration in teacher education improves and transforms the quality of present teacher education system (Khan 2012). Systematic usage of internet resources as teaching learning material boosted competency among teachers (Ameyaw, & Sarpong, 2011), likewise teachers having exposure of technology (like data projectors) rated higher scores on perceived teaching assistance and perceived competence of technology integration than those having less or no technology exposure (Yuan, & Lee. 2012). ICT provides an enjoyable environment for both the teacher as well as learner. This shift develops a creative and interactive environment for both (Khan 2012). ICT policy and integration could greatly improve the status of knowledge based economy, and can develop an effective and robust Education System (Shaikh & Khoja, 2011). However, teacher and students consider the Internet as a potential educational resource and not
only as a support or reinforcement tool that complements the textbook, they also like to use ICT and consider it as useful tools in the process teaching/learning (Rodriguez, 2012).

Following paragraph highlights some studies about how teachers learn to transform by developing various projects and educational programs to increase their competency like: technological pedagogical content knowledge (TPCK), partnership in primary science (PIPS), Galileo Network's program (GNP), Improvement quality education for all (IQEA) collaborated with applications of the ICT (Angeli, & Valanides, 2009; Rodrigues et al., 2003; Jacobsen, 2001; Ming, et al., 2010). They examined the various applications of ICT which plays a vital role and factors influencing the professionalism of teachers belonging to different subject areas (Avalos, 2011; Oner, & Nilay, 2012). Fundamental purpose of these studies is to explore the process of renaissance among teachers, some are based on approaches, and some are conceptual while some are Meta-analytic. Last but not the least effective integration of ICT skills into teaching learning practices is necessary for the enhancing opportunities of professionalism (Fitzallen, 2005). Unquestionably ICT improved the competency among the teachers of knowledge society. It acts as a helping hand to enhance professionalism by increasing global & social connectivity due to virtual interaction. It also resulted in the establishment of academic communities, digital relationships, and global methods of teaching approach. Due ICT integration, inventions & innovation all over the globe became accessible for the Upliftment and enhancement of teacher competency.

**MOTIVATION ACCUMULATION WITH ICT**

Continuous development in the fundamental elements of educational system impacted the present world persistently. Existing information gets rapidly outdated and procurement of innovative knowledge and its applications results in constant transformation of political, cultural and social environments. Due to this, citizens of present technological society are required to have capacity to think fundamentally, collaborate and communicate with others, use various perspectives of technology by taking initiative and integrate diverse viewpoints with new learning situation (Angeli, & Valanides, 2009). ICT enhanced the opportunities to boost the knowledge and skills of the teachers by establishing online communities where teachers and their colleagues are able to work online as a team (Leask & Pachler 2014), likewise a significant positive difference has been reported by Rodrigues et al., (2010) between the students whose teachers possesses higher adoption with the ICT than those of lower ones. Teacher’s lays emphasis that incorporation of ICT in core subjects (Science, Mathematics and English) and fundamental classroom practices have enhanced and extended existing classroom practice, and revolutionized emerging activities which improved the teaching practices. Teachers were practicing and testing new strategies for mediating ICT-based learning, which in-turn revolutionized the pedagogical development (Hennessy et al., 2007). Leask & Pachler (2014) it is evident when ICT is integrated appropriately into curriculum it not only enhances learning of pupil but also improves the existing teaching practices, they further emphasized that teachers should work in collaboration, so that they can establish up to date and superior professional
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practices like; teaching methodologies, assessment techniques, learning enhancement and so on. Numerous assumptions have been made about the impact of ICT on work life, research on human concerns and human resource issues in a variety of settings, sectors, and occupational groups (Dorothy, 2004), and it is notable that Integration of ICT plays a vital role in generating employment opportunities, (UNCTD, 2011).

Technology in general and ICT in particular possesses potential and liberates its users from routine boredom and encourage them to focus on coherent and innovative, rather than routine professional tasks, hence providing motivation. ICT provides a huge amount of valuable intel in any subject and also provides ability to reproduce and disseminate this information, by enabling networking and immersion in virtual worlds (Leask & Pachler, 2014). So, ICT integration and potentialities replaced the theoretical concepts with practical and visual demonstration making routine tasks of teaching and learning more and more interesting, thereby motivating teachers to integrate more and more technological approaches in each and every aspect of profession.

RESPIRING WORK STRESS WITH ICT

Educational society of present world is trying to keep the pace with the increasing demands of global society which otherwise influenced the professionals mostly in educational society. Therefore, the enhancement of stress and anxiety among the stake holders in general and teachers in particular is obvious. Some people would be surprised to know how intensely stressed teachers of present society have become due to various reasons like increased workload, administrative role, digital needs of the students and performance pressure from the organization and so on.

In order to address this serious issues ICT enhanced learning acts as a great resource to reduce the various causes of stress among teachers by enhancing various elements of teaching process. ICT appeals to all the senses of its users facilitate the use of various modern sources of interaction, which in-turn provides resources to adapt and edit teaching learning material quickly and easily thereby enabling teachers to reach more students effectively. In contemporary world ICT delivers opportunities for rapid and effective communication among users and provides access to tremendous amount of valuable information. With the help of ICT individuals of the modern world are able to reach to any corner of the world at any time, which helps to integrate the private and professional spheres (Thomee et al, 2007). Use of virtual reality classrooms changes the traditional characteristics of education, it provides opportunity to teachers to organize the teaching activities and helps students to become persons who discover the knowledge rather being remaining a passive receiver there by developing Modern model of teaching. Further Fan & Wang, (2012) expressed their view as it helps to resolve various problems like time limit, understanding and grasping level by providing tangible and applied acts. Application of ICT and Metal Age method enhances capital development by increasing work ability, decreasing stress by positive stress management, leadership enhancement by improving cooperation, interpersonal communication (Maciocha, et al., 2012). Likewise Morgan
& Cotton, (2003) revealed that adequate time spent with e-mail and instant messaging reduces depressive symptoms.

In accordance with extraordinary influence of ICT in teaching, various elements like approach towards ICT, use of ICT in teaching learning, skills and knowledge regarding ICT, were utmost factors for creating self-confidence among teachers thereby helping in reducing their stress (Ahmadi & Keshavarzi, 2013). Integration of whiteboard technology in teaching process helped teachers to reduce major causes of occupational stress like extra workload and inability to meet the student needs (White paper, 2009), it enables teachers to plan and prepare efficiently and encourages sharing of resources among peers, thereby reducing demand on the time of the teachers. In the comprehensive concern ICT has greatly enhanced the various elements of teaching like; time management, reducing paperwork and data entry, access to sophisticated information, administration and management aspects, data collection requirements and techniques, computerized analyses of written grammar and continuous assessment of students, re-allocation of tasks among teachers, boosting morale, enhancement in teaching, confidence and communication, better access to school networks and web-based teaching resources etc. facilitating the each and every corner of the professional society. (ACS & HMIS, 1999; Bushweller, 2000; DfES, 2001; Greene et al., 2002; & PricewaterhouseCoopers, 2002).

**ENHANCING ACCESSIBILITY WITH ICT**

Globalization and developments in the technology is pressurizing modern educational society to incorporate the ICT to enhance its various elements, because the stakeholder of present education system requires up to date information for proper development. Use of ICT in the education is acting as a dominant and dynamic delivery system possessing improved potentialities inorder enhance the teaching learning system of contemporary world. According to Forcier (1999) onset of technology integration worked as a tool for the Upliftment of educational process, as students and teachers are able to obtain teaching learning material with less efforts and without purchasing it from the market.

Successful integration of the ICT boosted the present educational system. Use of online lectures, virtual libraries, classrooms and laboratories enhanced accessibility of teachers and students, thereby reducing the geographical barriers (Bhattacharya, 2008). Similarly Ismai’ila, & Hammad (2013), expressed how potentialities of ICT usage in teaching learning process improved the accessibility via video libraries, animation use, videodisks, electronic encyclopedias, web-based learning and so on. Ahmed, Banday & Jan (2014) stated that ICT has tremendously improved the communication structure of the educational system through some special communication applications like web 2.0 technology and Computer Assisted Language Learning for understanding the fundamental aspects of pronunciation, vocabulary and grammar thereby helping in bridging the gap among the stakeholders of the ICT.
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ICT based teaching enabled the teachers to become technically sound for their teaching and on the other hand helped them to attain the accessibility of professional information for easy delivery and for active learning etc. thereby improving teacher centered framework (Khan, 2015). Current educational society is in a rapid development due to onset of ICT in education, various elements of ICT like e-mails, social networking websites, search engines, video conferences and lectures, blogs and web pages has upgraded the teaching learning process by transforming the present society into gigantic knowledge planet. Tirziu, & Vrabie, (2015) revealed that information access and online communications inflate the range of courses by enabling anytime, anywhere access to teachers and students, techniques like e-learning, web 2.0, helps in demonstrating face-to-face material effectively in online environment, allowing academic community to attain sophisticated level of satisfaction for learning and cognitive understanding of course material.

Proliferation of use of ICT in teaching learning process enhanced the exploration and delivery of knowledge, in order to make education accessible to all. It not only improves the teaching methodology but almost every aspect of teaching enormously. It increased the accessibility of the teachers to vast domain of knowledge which in-turn would prepare learners for lifelong learning and increased the geographical flexibility of teachers’ thereby reducing barriers and enhancing professional environment and occupational health. De Pablos-Pons et al., (2013) exposed ICT innovation and practices improves elements of teacher’s well-being like Motivation, Values, Capabilities, Emotions and Satisfaction. Likewise Uzunboylu, & Tuncay, (2009) publicized that web-based, technology and e-learning enhances the experience and accessibility of the vocational education teachers to various job related activities, last but not least Various components of ICT like blogs, podcasts, e-learning and wikis are acting as essential gear’s for enhancing digital literacy of an individual, that enhances his/her effort expectancy and work performance (Mohammadyari, & Singh, 2015).

DISCUSSION AND CONCLUSION

Globalization and developments in the technology is pressurizing modern educational society to incorporate ICT in educational process and latest trends in teaching profession reflects the changes in the planning and delivering of education. It is believed that ICT in present era encompasses in every aspect of life mostly influences on educational environment. Effective use of ICT in teaching profession increases the accessibility of teaching learning opportunities and these results are in line with Uzunboylu, & Tuncay, (2009), it helps to enhance the quality of teaching with the help of advanced methods of teaching, reforming management in education system, reduces the workload, increases engagement and so on. ICT proved as one of the affective and impressionable agent for professional Upliftment in challenging educational society. On the other hand ICT shake its hands with teachers to reduce their anxiety, work stress and provide easy and comfortable routine professional life similar results has been reported by (DfES, 2001; Greene et al., 2002; & PricewaterhouseCoopers, 2002). Constant development of ICT in education will have a strong influence on basic units of teaching profession like, material
to be learnt, how it is learnt, when and where it is learnt and taught. Integration of ICT promotes open educational environment for both teacher and students enabling and strengthening interface among stakeholders. The present paper makes contribution to the literature on ICT and teaching profession by investigating how various domains (Competency, Motivation, Work Stress, and Accessibility) of teaching profession are positively influenced by the effective use of ICT. Present paper reveals that overall teaching profession is enriched by the enhancement of ICT usage in aforementioned functional areas of teaching profession in realm of universal competitive global academic community. Present paper can possibly serve as an elementary guide for educational planners to deploy technology based teaching profession successfully.

IMPLICATIONS

1. Present study will contribute to the literature on ICT and teaching profession.
2. It will act as a guide for education planners to enhance the use of ICT in teaching profession.
3. There is need to provide appropriate guidance regarding the ICT usage to enhance the teaching profession.
4. In order to have balanced and effective teachers the educational administrators should conduct seminars, workshops highlighting the effective use and integration of ICT in teaching profession.

LIMITATIONS OF RESEARCH

1. First and foremost limitation of present study is lack of empirical data.
2. Present study only focuses on the positive aspects of ICT in teaching profession neglecting the negative ones.
3. Present study explores only four dimensions of teaching profession.

REFERENCES

Accounts Commission for Scotland and HM Inspectors of Schools (ACS & HMIS). 1999, *Time for Teaching*. Edinburgh: The Scottish Office. Retrieved 16 January 2016 from http://www.accounts-commission.gov.uk

Ahmadi, S. & Keshavarzi, A, 2013, “Studying the Effects of Faculty Members’ knowledge, Skill and Approach to Software on their Self-confidence in Employing Information and Communication Technology in their Teaching”. *Procedia-Social and Behavioral Sciences*, vol. 83, pp.942-946.

Ahmed, M. Banday, M. T. & Jan, T. R, 2014, “ICT4ELT: A Study with Reference to Kashmir”. *Procedia-Social and Behavioral Sciences*, vol. 123, pp.414-421. doi: 10.1016/j.sbspro.2014.01.1440

Ameyaw, Y. & Sarpong, L, 2011,“Integrating ICT in the Pedagogical Skills of Teachers in Some Basic Schools in the Ga South District in the Greater-Accra Region of Ghana”. *Journal of Education*, Vol.1, no. 1, pp.01-09
Angeli, C. & Valanides, N. 2009,“Epistemological and methodological issues for the conceptualization, development, and assessment of ICT–TPCK: Advances in technological pedagogical content knowledge (TPCK)”. Computers & Education, vol. 52, no.1, pp.154-168.

Avalos, B, 2011,“Teacher professional development in Teaching and Teacher Education over ten years”. Teaching and teacher education, vol. 27, no. 1, pp.10-20. doi:10.1016/j.tate.2010.08.007

Bhattacharya, B. 2008,“Engineering education in India - the role of ICT”. Innovations in Education and Teaching International, vol. 45, no. 2, pp.93.

Bushweller, K. 2000,“The Smarter Office: How School Districts Are Automating Administrative Tasks”. American School Board Journal, vol. 187, no. 3,pp.26-28.

Dahiya, S. S. 2004,“Educational Technology: Towards Better Teacher Performance”. Shipra Publications. Delhi.

De Pablos-Pons, J., Colas-Bravo, P., Gonzalez-Ramirez, T.& del Rey, C. C. M. V. 2013,“Teacher well-being and innovation with information and communication technologies; proposal for a structural model”. Quality & Quantity, vol. 47, no. 5, pp.2755-2767. DOI 10.1007/s11135-012-9686-3

Department for Education and Skills (DfES) 2001,“Information management supporting success: making it a reality”. London: DfES.

Dorothy, Z. H. 2004,“Stress work: An Exploration of the Impact of Information and Communication Technology on Canadian workers”. Concordia University (Canada), ProQuest, UMI Dissertations Publishing, MQ91151.

Fan, S. C.& Wang, F. X. 2012,“Application of Virtual Reality in Tourism Management Professional Teaching”. InSoft Computing in Information Communication Technology (pp. 385-389). Springer Berlin Heidelberg.

Fitzallen, N. 2005,“Integrating ICT into professional practice: A case study of four mathematics teachers”. Proceedings of the 28th Mathematics Education Research Group of Australasia, pp.353-360.

Forcier C. R. 1999,“The Computer as an educational tool - problem solving”. Pretence Hall Inc. New Jersey

Greene, K. Lee, B. Springall, E. & Bemrose, R. 2002,“Administrative support staff in schools: ways forward”.Slough:” National Foundation for Educational Research.

Hargittai, E. 2010,“Digital natives. Variation in Internet skills and Uses among Members of the “Next Generation””. Sociological Inquiry. doi:10.1111/j.1475-682X.2009.00317.x.

Hennessy, S., Ruthven, K. & Brindley, S. 2007,“Teachers Perspective on Integrating ICT into Subject teaching: Commitment, Constraints, Caution and Change”. Journal of Computer Assisted Learning, vol. 26, no. 6, pp.155-192.

Ismai’ila, Y., & Hammad, D. B. 2013,“Integration of information and communication technology (ict) into technical and engineering education in Nigeria: potentialities, problems and strategies”. Integration,vol.4, no. 3, pp.590-96.
Jacobsen, D. M. 2001, “Building Different Bridges: Technology Integration, Engaged Student Learning, and New Approaches to Professional Development”. Paper presented at AERA 2001: What We Know and How We Know It, the 82nd Annual Meeting of the American Educational Research Association, Seattle, WA: April 10 - 14, 2001.

Khan, S. H. 2012, “Integration of ICT Component in Teacher Educational Institutions: An Unavoidable Step towards Transforming the Quality of Present Teacher Education System”. Indian Streams Research Journal, vol. 2, no. 5.

Khan, S. H. 2015, “Emerging conceptions of ICT-enhanced teaching: Australian TAFE context”. Instructional Science, vol. 43, no. 6, pp.683-708. DOI 10.1007/s11251-015-9356-7

Krishnaveni, R. & Meenakumari, J. 2010, “Usage of ICT for Information Administration in Higher education Institutions-A study”. International Journal of Environmental Science and Development, vol. 1, no. 3, pp.282-286.

Kubricky, J., & Castkova, P. 2015, “Teacher's Competences for the Use of Web Pages in Teaching as a Part of Technical Education Teacher's ICT Competences”. Procedia-Social and Behavioral Sciences, vol. 174, pp.3236-3242.

Leask, M., & Pachler, N. 2014, “Learning to teach using ICT in the secondary school: A companion to school experience”. Routledge. New York

Lee, M. C. 2010, “Explaining and Predicting Users’ Continuance Intention toward E-Learning: An Extension of the Expectation–Confirmation Model”. Computers & Education. doi:10.1016/j.compedu.2009.09.002.

Lee, Y. C. 2008, “The Role of Perceived Resources in Online Learning Adoption”. Computers & Education. doi: 10.1016/j.compedu.2007.01.001.

Maciocha, A. Surakka, J. & Nasman, O. 2012, “Work Ability and Social Inclusion Project-Enhancing Collective Knowledge through Leadership and Stress Management”. In European Conference on Intellectual Capital (p. 535). Academic Conferences International Limited.

Maphalala, M. C. 2014, “The Manifestation of Occupational Stress in the Teaching Profession: The Unheeded Voices of Teachers”. Mediterranean Journal of Social Sciences, vol. 5, no. 1, pp.77.

McFarlane, A. 2001, Cited in Leask, M., & Pachler, N. 2014, “Learning to teach using ICT in the secondary school: A companion to school experience”. Routledge. New York.

Ming, T. Hall, C. Azman, H. & Joyes, G. 2010, “Supporting smart school teachers’ continuing professional development in and through ICT: A model for change”. International Journal of Education and Development using ICT, vol. 6, no. 2, pp.5-20.

Mohammadyari, S., & Singh, H. 2015, “Understanding the effect of e-learning on individual performance: The role of digital literacy”. Computers & Education, vol. 82, pp.11-25. dx.doi.org/10.1016/j.compedu.2014.10.025

Morgan, C.& Cotten, S. R. 2003, “The relationship between Internet activities and depressive symptomsin a sample of college freshmen”. Cyber psychology and Behavior, vol. 6, no. 2, pp.133-142.
Noor-Ul-Amin, S. 2013, “An effective use of ICT for education and learning by drawing on worldwide knowledge, research, and experience: ICT as a change agent for education”. *Scholarly Journal of Education*, vol. 2, no. 4, pp.38-45.

Nzulwa, J. 2014, “Motivational Factors Affecting High School Teachers’ Professional Conduct and Work Performance: A Case of Public High Schools in Nairobi City”. *International Journal of Humanities and Social Science*, vol. 4, no. 3, pp.60-66.

Oner, U. & Nilay, T. B. 2012, “Effects of the Professional Development Program on Turkish Teachers: Technology Integration along with Attitude towards ICT in Education”. *The Turkish Online Journal of Educational Technology*, vol. 11, no. 3, pp.115-127.

OS, S. K. 2013, “A Fuzzy Based Comprehensive Study of Factors Affecting Teacher's Performance in Higher Technical Education”. *International Journal of Modern Education and Computer Science*, vol. 5, no. 3, pp.26.

PricewaterhouseCoopers. 2002, “Good practice in cutting bureaucracy: Reducing bureaucratic burdens Phase 2”. London: Department for Education and Skills. Cited in British Educational Communications and Technology Agency (2004). Millburn Hill Road, Science Park.

Rodrigues, S. Marks, A. & Steel, P. 2003, “Developing science and ICT pedagogical content knowledge: A model of continuing professional development”. *Innovations in Education and Teaching International*, vol. 40, no. 4, pp.386-394.

Rodriguez, F. M. M. 2012, “Evaluation of Attitudes and Interests Towards ICT: Orientation for Problem Experiences”. *Problems of Education in the 21st Century*, vol. 43, pp.44-47.

Rodriguez, P. Nussbaum, M. Lopez, X, & Sepulveda, M. 2010, “A Monitoring and Evaluation Scheme for an ICT-Supported Education Program in Schools”. *Educational Technology & Society*, vol. 13, no. 2, pp.166–179.

Sarkar, S. 2012, “The role of information and communication technology (ICT) in higher education for the 21st century”. *The Science Probe*, vol. 1, no. 1, pp.30-41.

Shaikh, Z. A. & Khoja, S. A. 2011, “Role of ICT in shaping the future of Pakistani Higher Education System”. *The Turkish Online Journal of Educational Technology*, vol. 10, no. 1, pp.149-161.

Siddiqui, M. H. 2004, “Technology in Higher Education, 115”. APH Publishing Corporation, New Delhi.

Thomee, S. Eklof, M. Gustafsson, E. Nilsson, R. & Hagberg, M. 2007, “Prevalence of perceived stress, symptoms of depression and sleep disturbances in relation to information and communication technology (ICT) use among young adults—an explorative prospective study”. *Computers in Human Behavior*, vol. 23, no. 3, pp.1300-1321.

Tirziu, A. M. & Vrabie, C. I. 2015, “Education 2.0: e-learning methods”. *Procedia - Social and Behavioral Sciences*, vol. 186, pp.376 - 380. doi: 10.1016/j.sbspro.2015.04.213

UNCTD. 2011, “Measuring the Impacts of information and Communication Technology for Development”. A report of United Nations Conference on Trade and Development.
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UNESCO. 2009, “Guide to Measuring Information and Communication Technologies (ICT) in Education”. Report of United Nations Educational, Scientific and Cultural Organization (UNESCO).

Uzunboylu, H. & Tuncay, N. 2009, “E-learning divides in North Cyprus”. Asia Pacific Education Review, vol. 10, no. 2, pp.281-290. DOI 10.1007/s12564-009-9019-y

Wang, Y. Wu, M. & Wang, H. 2009, “Investigating the Determinants and Age and Gender Differences in the Acceptance of Mobile Learning”. British Journal of Educational Technology. doi:10.1111/j.1467-8535.2007. 00809.x.

White Paper. 2009, “Reducing stress in the classroom, How interactive whiteboards and solution-based integration improve teacher quality of life. SMART Technologies ULC in the U.S and/or other countries”. Retrieved, January 2016 from https://www.google.co.in/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwjhtJjWkqvKAhWDCo4KHaqZBRkQFggbMAA&url=http%3A%2F%2Fsmarttech.com%2FUVA_brief&usg=AFQjCNFCltnyTN7NMt46xWI8qHvgCQ5iRQ&sig2=A4l6ZhiaMTvOpGAn0AWlhA&bvm=bv.112064104,d.c2E