Exploration of Teaching Staff and Students' Preferences of Information and Communication Technologies in Private and Academic Lives

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Abstract

This research aims at investigating the preferences of teaching staff and students about the use of ICT in private and academic lives, and weather this distinction is made according to their exposure to various ICT during their life stages or not. This qualitative investigation used semi-structured interviews with sixty first-year students and thirty teaching staff participants from blindly selected three universities and six disciplines in order to provide a diverse range of perspectives, and also to reflect the diversity of the Egyptian higher education system. The findings of this study do not support the argument that there is a digital divide between generations, and thus adding value to our understanding regarding the preferences, uses, benefits, and barriers to using ICT, which will enhance the use of ICT socially and academically.

Keywords: *Information and Communications Technologies (ICT); Preferences; Teaching Staff; Students; ICT Uses, Benefits, and Barriers.*

1. Introduction

With reference to the Educational Testing Service [1] Information and communication technology (ICT) literacy and skills are important factors in the current information era. A great attention has been given to education in response to the growing shift towards knowledge based communities, which require a supply of skilled graduates, who are well-prepared to be knowledgeable users of ICT tools. They define ICT literacy as the use of digital technology and communications and networks tools in order to be a knowledge worker in the knowledge society.

An increase shift has taken place with regards to the use of ICT in education. Higher Educational Institutes (HEI) has included the use of ICT in their educational programs in order to help students to learn more effectively (Surry et al. [2]; Hardin & Ellington [3]; Matheos [4]).

Brooks and Brooks [5] suggested that the teaching staff role will be also changing as ICT tools are changing the process of teaching and learning. Also, Moore and Kearsley [6] declared that as a result of the increasing use of ICT in the educational process, students are now taking a new role in their learning in order to meet and be more compatible with their new lifestyle and career needs. This is why HEI are now enhancing learning with the incentives to use ICT in order to be transferred from the traditional learning medium (Simpson [7]). Classes are changing from just places to receive instructions to working on group research projects. Students now are expected to locate, evaluate, and employ online information they may found.

2. Increasing ICT Awareness

Longanecker [8] stressed that ICT is going to change and transform the way students can learn and communicate in their educational and private lives. This same view is shared with both Sapp [9] and Lorenzetti [10], as they believed that ICT are significantly changing lives of teaching staff and students. This is increasingly happening as educational institutions are examining methods for restructuring their offerings and the overall methods for achieving their primary goals and objectives. These institutions and their teaching staff feel that ICT will enable them to work more quickly; thus increasing their productivity, and to address innovative teaching and research ideas. As a result, teaching staff will have more time for students contact; thus playing a more supportive role with their students.

This view is highly supported by Duhaney [11], who believed that ICT has enormous power to change HEI, as using ICT to generate innovative ideas provides HEI with the required mechanism to change the way of educating and connecting with teaching staff and students. In the same context, Keane [12] has concluded that a wealth of different educational resources would be provided to teaching staff as a result of using different educational technologies in their daily routine working lives, and these resources would benefit them in a dramatic way in their teaching tasks.

Prensky [13] believes that there is a visible difference between both teaching staff and students with regard to the use of ICT in both their private and academic lives. Teaching staff, who have struggled to use ICT later in their life, are thought to be more challenged by ICT and to be more resistant, showing less technological likeness and knowledge than other younger people who have grown up with ICT, who are said to be familiar and aware with these ICT, thus being able to adapt to changes caused by ICT in their private and academic lives. This is what Prensky explained as the digital divide between generations, Underwood [14] and Warschauer [15] used Prensky argument in order to

explain the gap and differences in technology use and skills between teaching staff and students' generations.

In the same context, some researchers (Toledo [16]; Head [17]; Leech [18]; Philip [19]) has suggested that students' awareness with ICT affected their choices and abilities with regard to their learning, and their preference to the technological means of education; thus requiring the integration of ICT in their education activities.

Even though there is a great interest with the idea of Prensky's argument [13], that there is a digital divide between generations, there have been limited empirical comparisons of students' and teachers' preferences and uses of ICT. One of the very limited investigations in this regard, Kennedy et al. [20], who investigated both students and teaching staff on 41 ICT-based activities in 8 types. They found a limited evidence of relatively small differences between students and teaching staff. They found that 4 types of ICT usage are age dependent and related to students and teaching staff differences; these are cellular phone use, advanced cellular phone use, standard web and music, and computer games.

These findings are considered challenges to the assumptions about digital divide between generations, which causes differences in the skills and experiences of both students and their teaching staff. Given the widespread acceptance of Prensky's argument [13], further research is needed to add to the very limited empirical evidence available about the digital divide between generations in new contexts.

3. ICT Usage Preferences

With regard to Prensky argument [13] about the digital divide between generations, it is clear to understand that teaching staff are supposed to adopt different learning technologies in their teaching and learning activities in order to meet the new students' generations' needs for the use of ICT. Thus, teaching staff has to adapt the ICT that students are aware of and familiar with in their social life.

It is time to ask an important question regarding weather it is appropriate for the teaching staff to adapt any ICT students are familiar with, or it is better for them to be selective in their choices about the appropriate ICT for their teaching and learning activities even though students may not aware of them. This question will be based upon a clear distinction made by teaching staff and students themselves about their preferences of ICT in their private and academic lives. Moreover, teaching staff has to be aware regarding this clear distinction. This question required a closer investigation in order to be able to answer it.

The recent studies in this regard are limited and do not have a clear and distinct answer for such a question. Salaway et al. [21] declared that there is an existed evidence that there is a clear distinction from students side regarding the preferred ICT they do not want to use in their academic activities in their HEI, students reported that social networking technologies as well as instant messaging are proffered to be used in their social life away from the academic settings. In the same context, Lohnes and Kinzer [22] and Weaver et al. [23] concluded that students resist to some extent the use of some ICT in their academic life, although they prefer to use them in their social life outside the academic settings. These results contradict with Prensky argument [13] about the digital divide between generations, as students do not accept all the ICT they are familiar with in their social and private life in their academic settings and they have special preferences in this regard.

On the other hand, some researches (Newton [24]; Panda & Mishra [25]) suggested that the use of the teaching staff for the ICT in their teaching and learning activities and their preference for these ICT is not based upon weather they are recent users for ICT or not as teaching staff are preferred to use ICT in general. Other researchers (Schoonenboom et al. [26]; Selwyn [27]) found limited integration of ICT in teaching activities in general. Further investigation in this regard done by a group of researchers (Selwyn [27]; Foley & Ojeda [28]; Steel [29]) who explained this result as due to some HEI' policies and management practices, and also due to an important factor regarding the teaching staff beliefs about the benefits of using ICT and integrate them into their teaching and learning activities only if they see some values for this adoption.

4. Research Objective

This qualitative research aims at investigating and to gain a clear understanding regarding the issue of both teaching staff and students preferences about the use of ICT in private and academic lives. This investigation will add to the argument of the digital divide between generations weather it is true or not.

Moreover, the investigation will provide a good understanding about teaching staff and students' preferences for the used ICT in private and academic lives, and weather this distinction is made according to the familiarity with the ICT of due to the perceived benefits for using them.

5. Research Methodology

The research used a qualitative investigation using interviews for both teaching staff and undergraduate students regarding how and why they use various ICT in their private and academic lives, and their opinions about these ICT. The research followed semi-structured interviews in order to compare and contrast interviewees' responses and to be able to add value to the collected data. Thus, interviewees were able to answer interview questions and also were able to add their opinions regarding each one of these questions.

The research investigated teaching staff and students' preferences regarding the traditional ICT, such as computers, email, mobile phones, as well as regarding the new and emerging ICT, such as blogs, Wikis, podcasts, course management systems and other social software.

The qualitative investigation was conducted in late 2011 during the fall semester. The research is aware of the dangers of selection bias of the study participants, thus, a draw was made as a type of blind selection in order to ensure fairness in the selection among the full list of universities and disciplines. The researcher create a full list of all universities located in Alexandria, Egypt and made a draw from them in order to select three representing universities, then another list to select among each university disciplines. The selected disciplines and participants were from different blindly selected universities and disciplines in order to provide a diverse range of perspectives, and also to reflect the diversity of the Egyptian higher education system

the draw resulted in the selection of the following participants: Tourism and Hotel Management, Arts and Design (International Hotel Management, Department of Hotel Management, College of Tourism and Hotel Management, Fashion Design, Faculty of Arts And Design, two disciplines selected from Pharos University); Mathematics and Environmental Sciences (two disciplines selected from Faculty of Science, Alexandria University); Computer Engineering and Mechanical Engineering (two disciplines selected from Faculty of Engineering, the Arab Academy for Science & Technology).

The research interviewed ten first-year students and five of their teaching staff from each discipline, constituting sixty students and thirty teaching staff members totaling ninety participants. Permission was granted from each department head in order to start scheduling the interviews with the participating teaching staff and their students through each department secretary. Participants were interviewed on an individual basis in order to gain a clear understanding and discover areas of similarities and differences.

Interviews were recorded using audio recording machine and directly transcribed and placed into text files. The research used NVivo 9.0 as the qualitative data analysis software tool that aid with classifying, sorting, and arranging information as well as examining relationships in the data. Moreover, it helps with the coding of the data into themes and subcategories iteratively and collaboratively as suggested by Miles & Huberman [30].

Coding of data resulted in a large number of categories. In order to achieve concordance, coding of the data was reviewed by other researchers and recoded iteratively. Teaching staff and students' data were analyzed independently in order to be able to compare them in order to discover areas of similarities and differences.

With reference to Lincoln and Guba [31], whenever researchers addressed the concepts of reliability and validity in qualitative research they referred credibility, which depends on the ability and effort of the researcher. They determined that "inquiry audit" is one measure which might enhance the credibility of qualitative research. Patton [32] puts three questions for the credibility of the qualitative research: What techniques and methods were used to ensure the integrity, validity and accuracy of the findings? What does the researcher brings to the study in terms of experience and qualification? What assumptions undergrid the study?

Golafashani [33] determined that if the trustworthiness can be maximized, then more credible and defensible result may lead to generalizability. To improve the analysis and understanding, triangulation is a step taken by researchers.

The consistency of data will be achieved when the steps of the research are verified through examination of such items as raw data, data reduction products, and process notes. In qualitative research validity has to do with description and explanation, and weather or not the given explanation fits a given description (Campbell [34]).

From the previous illustration, the research was keen to follow the next strategies in order to increase its credibility:

- Multi-method: allows triangulation in data collection and data analysis.
- Low-inference descriptors: record precise, almost literal, and detailed descriptions.
- Multiple researchers: agreement on the descriptive data collected by more than one researcher.
- Mechanically recoded data: use of audio tape recorder.
- Participant review: ask participating teaching staff to review researcher’s synthesis of interviews for accuracy of representation.

6. Analysis & Discussion

The collected qualitative data were analyzed following the three linked sub-processes of qualitative analysis framework: data reduction, data display and conclusion drawing as suggested by Miles & Huberman [30].

As each participant is asked the same set of questions, first step of the analysis is to group all responses to the same question together. These responses are then categorized and compared. The intention is not to quantify responses, rather to examine the similarities and differences. Thus, the frequency distribution of the responses is insignificant. However, interviews data were of a qualitative nature and they are expected to

provide rich and detailed insights to the required investigation.

The digital divide between generations among students and teaching staff was investigated by examining the following issues: ICT used in private and academic lives, how ICT used in private and academic lives, benefits of, and, barriers to using ICT.

6.1 ICT Used in Private Lives

Students reported the following list of ICT they use extensively in their private lives: mobile phones, Internet, social software, email, instant messaging, blogs, and the MP3 players and, to a lesser extent podcasts. While on the other hand, teaching staff reported the following list of ICT they use extensively in their private lives: computers, mobile phones, Internet, and to a lesser extent, social software.

The reported used ICT in private lives showed that students made more preferences to the new emerging ICT, this result is inline with other research studies that showed that young people are extensive users for these types of new emerging ICT (Cairncross [35]; Lorenzo et al. [36]).

The analysis revealed that there were some differences between teaching staff and students regarding the likeness of various ICT. Almost all students showed positive attitude towards ICT, as they like to use it very much, while very few of the teaching staff showed negative attitude toward the use of ICT in general (only two participants).

In the same context, both groups of teaching staff and students reported that their use of ICT is dramatically influenced by their family members and friends as they encourages them to use some of the new emerging ICT.

The analysis showed some similarities and differences between and within the two groups with regard to how ICT is used in private lives.

6.2 How ICT Used in Private Lives

The analysis showed that students were more likely to use ICT in their private lives within the following four categories: communication, entertainment, general routine use, and to a lesser extent, professional activities.

Students use different ICT for communication purposes such as e-mail, mobile phones (voice and texting), and social software. These ICT are used mainly in order to keep students in touch with friends and family members nationally and internationally. ICT used for entertainment purposes including the use of individual offline and online games, downloading and playing audio and video clips, as well as accessing web information with special interest (such as websites for cars forums, sports forums, computer programming forums …). General routine use includes general Internet search for information, and general computer use for creating, saving, and retrieving information. Professional activities include doing some work tasks as some of the students working for professional companies.

On the other hand, teaching staff were less likely to report using ICT in their private lives as compared to students. They reported their use of ICT within the following three categories: communication, general routine use, and entertainment.

Teaching staff use different ICT for communication purposes such as e-mail, mobile phones, and social software. These ICT are used mainly in order to keep teaching staff in touch with friends and family members nationally and internationally. General routine use includes general Internet search for information, and general computer use for creating, saving, and retrieving information. Entertainment use includes downloading and playing audio and video clips, as well as accessing web information with special interest (such as websites for news, education community forums, sports forums, engineering design forums …).

Some teaching staff reported that the use of various ICT in their private lives make them flexible and connected all the time with their colleagues and students, thus being more productive and responsive (such as Internet, laptop, e-mail, and IM). While other teaching staff do not like to extent their professional lives to their social lives (four participants).

This result is in line with the reported feedback from the majority of the students, as they believe that the use of some ICT in their private lives benefit them as well in their professional and academic lives (such as texting, podcasts, and e-mail), as they can still do some academic work activities while enjoying their social life. But opposite to teaching staff, none of the students reported that they do not like to integrate their social lives with some academic work activities using the available ICT.

The analysis showed some similarities and differences between and within the two groups with regard to how ICT is used in private lives.

6.3 How ICT Used in Academic Lives

Students reported the following ICT they used in their academic lives: e-mail, Internet, PowerPoint, and to a lesser extent, course management systems and podcasts. They uses these ICT in order to exchange information with their colleagues and teaching staff, to access courses materials and classes handouts uploaded by their teaching staff, to do their research activities and assignments, to deliver class work, and to listen to lectures.

On the other hand, teaching staff reported the following ICT they used in their academic lives: PowerPoint, course management systems, Internet, e-mail, and to a lesser extent, podcasts. Teaching staff uses these ICT in order to create and disseminate class work, enhance lecturers' presentation, assignments, and explanations, facilitate class work submission, and do their administrative duties.

Although teaching staff and students used some of the same ICT in their private and academic lives, there were also a significant difference in the objective and the context of use due to the changing nature of the tasks required to be accomplished using these ICT, and also due to the changing roles performed and point of views gained in each group life stages, rather than due to the exposure to various ICT in their various life stages. Both groups take the advantages of various ICT, but for their own personal and professional interest in each party life stage.

6.4 Benefits of using ICT

Analysis revealed that students reported the following as the most important benefits of using various ICT: enhancing communication, suitability and convenience (anytime-anywhere), enhancing access to information, and facilitating learning and studying through distance.

Communication enhancement achieved through the use of various ICT, especially e-mail and Internet, which facilitates the interaction between students themselves and with their teaching staff without the need for waiting to face-to-face interaction. Suitability and convenience achieved as students are able to have immediate access to various resources from distance at any time. Enhancing access to information achieved as students have access to wealth of resources that provides great assistance in doing various class assignments. Facilitating learning and studying through distance achieved through the use of course management systems, Internet, e-mails. These great benefits allow students to continue learn and study even outside class boundaries.

On the other hand, Analysis revealed that teaching staff reported the following as the most important benefits of using various ICT in their academic lives: enhancing communication, enhancing design of lectures, enhancing access to information, suitability and convenience (anytime-anywhere), enhancing students' collaborative work, and enhancing exchange of class materials with students.

Most of the reported benefits by teaching staff focus on enhancing teaching and learning activities in order to enhance students' learning, this is achieved through the use of various ICT to enhance lectures design, and to publish and disseminate lectures materials.

The analysis showed that there were different perspectives regarding why both teaching staff and students uses various ICT, this is due to the nature of the required tasks needed to be done by each group.

Moreover, the analysis revealed that both teaching staff and students believes that the use of ICT enhance communication, access to information, convenience and suitability, access to various information resources. While teaching staff have more benefits regarding enhancing students' learning, which is inline with previous research of Foley and Ojeda [28] as the use of various ICT in the academic live of teaching staff is substantially influenced by their teaching and learning design. While on the other hand, students have other benefits regarding studying their subjects.

6.5 Barriers to Using ICT

Analysis revealed that students reported the following key barriers to using ICT: accessibility to ICT, learning to use ICT, improper ICT replacement for traditional learning, communications size problems, and dislike of some teaching staff to use ICT.

Access to technology reported as a main barrier to use ICT especially in one of the studied universities (Alexandria University). Some students reported that some of the new emerging ICT require some learning and training, which they feel will be a burden to use these ICT (especially course management systems). Improper ICT replacement for traditional learning was felt as a barrier by some of the students, such as the use of MP3 players to listen to recorded lectures is considered poor replacement to face-to-face interaction as it may encourage some students to miss classes. Communications size problems may be due to missing some communications due to the massive amount of the received messages. Few students reported that they fear from posting any question or feedback online because they fear from others' opinion about their addition. Also, few students reported that their teaching staff dislikes using ICT in their teaching activities and they do not encourage them to use ICT as well.

On the other hand, teaching staff reported the following main barriers to using ICT: big workload, infrastructure issues, inexperienced and untrained students to use ICT, HEI administrative problems, and students' extensive use of ICT on the expense of the traditional practices.

The reported increased teaching staff workload explained by them as they are responsible for the traditional and electronic class activities. Also, the technological infrastructure issue arises due to the poor technical establishments and maintenance in some places, which causes technical breakdowns, as well as the compatibility issue among computer programs and computer systems for some of them.

Inexperienced and untrained students to use ICT is another barrier, as students may be not aware of the appropriate communication protocol, such as inappropriate expressions used, which causes

misunderstanding and miss communications with their teaching staff and colleagues. Also, they reported that some students were not aware of the differences between online and offline communication technologies appropriate protocols.

Teaching staff also raised the issue of administrative problems as some of the decisions taken by HEI administration regarding the use of ICT may be driven by the technology itself rather than teaching and learning objectives. They believes that administration should consider any piece of technology as no more than a tool, as the technology is not an end in itself.

A few number of the teaching staff reported that students' extensive use of ICT on the expense of the traditional classroom practices resulted in the feeling among students that face-to-face direct interaction and contact in the traditional class settings is not important and would be compensated with ICT, thus loosing the social values of being a member in a group.

Both groups of students and teaching staff shared some concerns about the barriers that limit the use of ICT. There were differences in each group perspective in this regard as each group had different concerns and interest. This result suggests that teaching staff and students are likely to face the same ICT but with different perspectives as due to each group role played in different contexts.

The determined barriers by students were a reflection for the continually connectedness as ICT is integrated deeply into their private and academic lives. This result is inline with previous research of Barnes and Tynan [37], which they named them as "digital native students".

On the other hand, the barriers determined by teaching staff were related mainly to their work practices. Their most concerning issue of the increased workload was also explained as main barrier by previous research of Bennett and Lockyer [38].

Analysis revealed that students and teaching staff shared some concerns about the barriers that limit the use of ICT. There were differences in each group perspective in this regard as each group had different concerns and interest.

7. Conclusion

The findings of this study do not support Prensky's argument [13] that there is a digital divide between generations, as there is no significant gap between the two generations of students and their teaching staff caused by differences in adopting ICT during their live stages. The differences in the role ICT plays in their private and academic lives were not as severe as such the argument predicts.

The findings highlighted some important findings regarding the perceived benefits, uses, and barriers each group reported from their own point of view. These findings are of value to HEI administration as they add value to how to develop the use of various ICT to enhance teaching and learning.

The revealed differences in the way teaching staff and students perceive and use ICT in their private and academic lives would be better attributed and explained by the different roles played by each party in the different contexts of their lives and the required tasks they need to accomplish, as various types of ICT would be more suitable for each context and situation, rather than age-related differences.

References

[1] Educational Testing Service. Digital Transformation: A Framework For ICT Literacy, Princeton, NJ: Author. 2002. Available from: http://www.ets.org/research/ictliteracy.
[2] D. Surry, et al., "A Model For Integrating Instructional Technology Into Higher Education", British Journal of Educational Technology, 36(2), 2005, pp. 327-9.
[3] J. Hardin, and A. Ellington, "Using Multimedia to Facilitate Software Instruction in an Introductory Modeling Course", Informs: Transaction on Education, 5(2), 2005, pp. 25-32.
[4] K. Matheos, "Effective Teaching With Technology in Higher Education", Teachers College Record, 106(5), 2004, pp. 938-940.
[5] G. Brooks, and M. Brooks, In Search Of Understanding: The Case For Constructivist Classrooms. Upper Saddle River, NJ: Merrill Prentice Hall, 2001.
[6] M. Moore, and G. Kearsley, Distance Education: a Systems View. 2nd Ed. Belmont, CA Wadsworth, 2005.
[7] C. Simpson, "Information Technology Planning: Computers in the School Library - How Many Are Enough?", Knowledge Quest, 31(1), 2002, pp. 23-6.
[8] D. Longanecker, "The Perfect Storm in Higher Education", Spectrum, 77(4), 2004, pp. 22-25.
[9] D. Sapp, "Too Much Technology", MEA Voice, 74(2), 1996, p. 5.
[10] J. Lorenzetti, "Transformative Assessment in Higher Education", Academic Leader, 20(4), 2004, pp. 4, 8.
[11] D. Duhaney, "Technology and Higher Education: Challenges in the Halls of Academe", International Journal of Instructional Media, 32(1), 2005, pp. 7-15.
[12] J. Keane, "Teacher Vs. Computer: Where Educators Stand in the Technology Revolution", T.H.E. Journal, 30(1), 2002, pp. 38-40.
[13] M. Prensky, "Digital Natives, Digital Immigrants", On The Horizon, 9(5), 2001.
[14] J. Underwood, "Rethinking the Digital Divide: Impacts on Student–Tutor Relationships", European Journal of Education, 42(2), 2007, pp 213–222.
[15] M. Warschauer, Technology and Social Inclusion: Rethinking the Digital Divide, Cambridge, MA: MIT Press, 2004.
[16] C. Toledo, "Digital Culture: Immigrants and Tourists Responding to the Natives' Drumbeat", International Journal of Teaching and Learning in Higher Education, 19(1), 2007, pp. 84–92..
[17] B. Head, "The D Generation: Leading The Emerging Generation of Digital Natives Calls for a Light Touch", AFR Boss, 2007.
[18] R. Leech, "Teaching the Digital Natives", Teacher: The National Education Magazine, 2006, pp. 6–9.
[19] D. Philip, "The Knowledge Building Paradigm: a Model of Learning for Net Generation Students", Innovate, 3(5),

2007. Available from: http://innovateonline.info/index.php?view=article&id=368.
[20] G. Kennedy, et al., "Immigrants and Natives: Investigating Differences between Staff and Students' Use of Technology", In "Hello! Where are you in the Landscape of Educational Technology?", Proceedings ASCILITE Melbourne, 2008, pp. 484–492, Melbourne: ASCILITE.
[21] G. Salaway, et al., "The ECAR Study of Undergraduate Students and Information Technology", 2007. Boulder, Colorado: EDUCAUSE Center for Applied Research.
[22] S. Lohnes, and C. Kinzer, "Questioning Assumptions about Students' Expectations for Technology in College Classrooms", Innovate, 3(5), 2007, Available from: http://www.innovateonline.info/index.php?view=article&id=431.
[23] D. Weaver, et al., "Academic and Student Use of a Learning Management System: Implications For Quality", Australasian Journal of Educational Technology, 24(1), 2008, pp. 30–41.
[24] R. Newton, "Staff Attitudes to the Development and Delivery of E-Learning", New Library World, 104(10), 2003, pp. 412–425.
[25] S. Panda, and S. Mishra, "E-Learning in a Mega Open University: Faculty Attitude, Barriers and Motivators", Educational Media International, 44(4), 2007, pp. 323–338.
[26] J. Schoonenboom, et al., "The State-Of-The-Art of ICT in Higher Education". In "ICT-Onderwijsmonitor Studiejaar 2002/2003", Amsterdam/Leiden: Universiteit van Amsterdam, SCO-Kohnstamm Instituut/Research vooor Beleid, 2004.
[27] N. Selwyn, "The Use of Computer Technology in University Teaching and Learning: a Critical Perspective", Journal of Computer Assisted Learning, 23(2), 2007, pp. 83–94.
[28] J. Foley, and C. Ojeda, "Teacher Beliefs, Best Practice, Technology Usage in the Classroom: a Problematic Relationship", In K. McFerrin et al. (Eds.), Proceedings of society for information technology and teacher education international conference, 2008, pp. 4110–4117. Chesapeake, Virginia, USA: AACE.
[29] C. Steel, "Influence of Teacher Beliefs on Web-Enhanced Learning Experiences: Learners and Teachers. Who's Learning? Whose Technology?", In L. Markauskaite, P. Goodyear, & P. Reimann (Eds.), Proceedings of the 23rd annual conference of the Australasian society for computers in learning in tertiary education, 2006, pp. 795–805. Sydney: Sydney University Press.
[30] M. Miles, and A. Huberman, Qualitative Data Analysis: an Expanded Sourcebook. 2nd Ed. Thousand Oaks: Sage Publications, 1994.
[31] Y. Lincoln, and E. Guba, Naturalistic Inquiry. Beverly Hills, CA: Sage, 1985.
[32] M. Patton, Qualitative Evaluation and Research Methods, 3rd ed., Thousand Oaks, CA: Sage Publications, Inc, 2001.
[33] N. Golafshani, "Understanding Reliability and Validity in Qualitative Research", The Qualitative Report, 8 (4), 2003, pp. 597-607. Available from: http://www.nova.edu/ssss/ QR/ QR8-4/ golafshani.pdf.
[34] T. Campbell, "Technology, Multimedia, and Qualitative Research in Education", Journal of Research on Computing in Education, 30(9), 1996, pp. 122-133.
[35] F. Cairncross, "Generation Y and New Media: Where Next?", In "The Impact of Digitization–A Generation Apart", London", United Kingdom: KPMG International, 2007, Available from: http://www.kpmg.com/Industries/ICE/Other/ImpactDigit.htm.
[36] G. Lorenzo, et al., "How Choice, Co-Creation, and Culture are Changing what it Means to be Net Savvy", EDUCAUSE Quarterly, 30(1), 2007.
[37] C. Barnes, and B. Tynan, "The Adventures of Miranda in the Brave New World: Learning in a Web 2.0 Millennium", ALT-J, 15(3), 2007, pp. 189–200.
[38] S. Bennett, and L. Lockyer, "Becoming an Online Teacher: Adapting to a Changed Environment for Teaching and Learning in Higher Education", Educational Media International, 41(3), 2004, pp. 231–244.

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