Pakistan Social Sciences Review
www.pssr.org.pk

RESEARCH PAPER

An Analysis of Teachers' Competencies using Digital Media in Universities of Pakistan

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PAPER INFO	ABSTRACT
	Teachers' competencies to use digital media in classrooms are concerning variable of interest. Major thirst of the study was to access teachers' skills and abilities that are directly linked to range of digital media and its practical application during their instruction. In addition the study was aimed to check the effective transformation of instruction and satisfaction level of the students with their teacher's functional skills regarding the use of digital media. The students and teachers of Govt. College University Faisalabad were the population of the study. The sample was comprised of five Chairpersons for interviews, two teachers from each faculty for observations while hundred M. Phil scholars were selected randomly for survey. The results support the teacher's skills using digital media during class room instruction. However the teachers of Arabic and Islamic departments were not found a set of conscious abilities for using digital media their instruction at Govt. College University Faisalabad. It is suggested that training program should be conducted by the university to enhance the capacity of teachers.
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Introduction

Teachers professional development is a change in the concept of teacher education; the concerning point is how an effective teacher can be prepared; what does he/ she look like in his or her profession; how his/her role can be significant in educational process which may be directly associated to whole rang of all other aspects of educational cycle. However this entirely requires other numerous changes from Marco to Micro levels. Fundamental education throughout the world has fast coverage of electronic communication contained effective quality in very short period of time with full action having some strengthen and weakness. Teachers who can collect information over the internet related to topic have full capacity to deliver content

matter in more advance methods of instruction. Besides this, more satisfactory techniques of instruction developed by competent teachers in one place can be useful and effective all over the world and access of this work can be made insure to learner throughout the world. The use of digital media during class room instruction has started from two decades ago and now it is very clear that teachers should make sure to adopt emerging technology which is the need of hour to improve their competences. The access to developed methods and materials by competent teacher can be utilized in remote location all over the world. More advance technologies based on teaching technique including internet is tool for boarder information and its access to richer learning material not only limited on direct instruction but online access for whole world. At the starting period of using information technology for educational purposes, the main concern was delivering content of direct instruction in under developing countries due to lack of resources.

Mostly teachers in under developing countries even having the access to the internet fail to develop technical skills for the effective use of World Wide Web during classroom instruction. Retraining of teachers to develop skills regarding the use of digital media is costly and challenging but most significant and necessary because developing these competencies will dominant trend over next few years. This trend can create some noticeable problems regarding the use of digital media in classroom during instruction. This can make teacher nervous unintentionally, especially when students have more skills to operate computers than teachers. When online lesson plan will fail to access students satisfaction level and teachers will unable to answer the raised questions so it will be necessary for teachers to develop skills and improve their competencies regarding the use of digital media because researches provide evidences that the use of digital media during classroom instruction can be more effective in developing concept clarity among university students. The growth and authentication of information and communication technology and their connection in all aspect of peoples life and make provision of unlimited access to public should be facilitated with vast access of knowledge and must be keep in process of continuous improvement in context of authenticity, transparency and validation. Present model of society required skilled manpower to utilize technologies for betterment of economic, social and cultural life. The presentations of web 2.0 enhance the scale and forces that produces movement of data collection and organization which communicate the ideas the use of shared memory of participants. The provision of chances is ensured by participating, developing, discovering and integration of large variety of knowledge in shape of text, videos and photos. Free and quick access to all type of services and sites formulated new methods of searching, saving and managing large amount of content matter knowledge and information.

Literature Review

Marinković (2010) describes teachers' competencies, there are two different approaches, and one way is to represent conscious efforts to develop skills and abilities which enhance teaching effectiveness and other in a unique educational setting developing the methods to present knowledge for enhancement teachers'

competencies. An overview regarding different concepts about teacher education, it is being viewed that the most powerful relevant and productive concept is teachers' professional development (Bjekić, 2000, Ivić et al. 2001, Pešikan 2002).

Hernes (2002) viewed that if we set the parameter based on results of the teachers to measure teachers' competencies, we should inquire that what sort of results we do actually mean.

These advance technologies converted a visible change in the teacher's role and competencies during teaching process in classroom (UNESCO 2002). Earlier technologies like interactive radio, radio, instructional television failed to bring major change in already existing teaching methods but the technologies like e-mail and internet converted teaching methodology towards variety of new innovations and this trend tend to push teachers more responsible to search out information and communication with learner during instruction inside as well outside the classroom. This trend has built pressure on teachers to improve their skills and abilities regarding the use of digital media and this trend also shifted students learning styles competitive to collaborative learning (Fullan, 2001; Chapman & Austin, 2002).

Marinković (2010) explains that the achievements of the students like knowledge intellectual skills, social adoptability and practical experiences, values, attitudes and behaviors depends upon teachers competencies in their area of specialization. As viewed implications of contemporary theories of teaching and its certain requirements placed before a teacher on the other it directs to observe and concentrate to see link between teachers competencies and how teachers enable themselves for such competencies which can yield better outcome in students learning (Dreyfus, 2010). There are basic and special competencies of teachers exercising to improve educational efficiency and quality in learning process. They are such as institutional capabilities and didactic competencies, pedagogical thinking and psychological capabilities, competencies related to evaluation, skills related to guidance, abilities regarding lifelong learning and professional capabilities, in addition to basic and special competencies there are also general competencies of teachers such information and communication skills regarding working in cultural context and abilities to use language. However cultural competencies in teachers are much important for their teaching profession (Marinković, 2010).

There are certain contributions of educationists in defining the term digital literacy globally in last few years whereas digital competencies are generally considered a state of ability of students, teachers and citizen (Lankshear and Knobel, 2006). Today we are the inhabitants of information and knowledge based society therefore access to information and way of communication has affected our social, economic and cultural abilities (Buckingham, 2006). In Scandinavian countries the word digital competency is communally used in educational contexts. The reason behind this may be that word competency has broader concept and more holistic meanings in Scandinavian English than traditional English. Moreover the policy documents for education elaborate the concept of competences higher as compared to

other countries. According to this point of view digital competency of teachers is viewed to incorporate complex and holistic proficiency level in using ICT with pedagogical practices in term of educational contexts. This indicates that main focus is converted and directed towards pedagogy and subject matter. However technical skills are the basic part of this digital competence (OECS, 2001). The concept of digital competencies started from a short time ago while in present decades different terms have been introduced to define the abilities of handling digital technological such as ICT skills, informational technological skills and its synonyms also taken as digital literacy and competencies (Krumsvik, 2008;Adeyemon, 2009).

Ilomaki et al., (2016) observed that typically several terms were used, firstly it was digital literacy, secondly latest literacy, thirdly media literacy, fourthly multi literacy and fifthly and lastly digital literacy. He further stated that in this era, digital competence was comparatively a new term in research studies. Gentikow (2015) explained that digital ability is to retrieving, accessing, storing, producing, presenting and exchanging knowledge with the help of technologies while digital competence indicates the use of such information in a critical and confident manner towards digital society. Moreover basic skills are required to use of digital devices in retrieving, accessing, storing, producing, presenting and exchanging knowledge to the world through internet in a meaningful and collaborative way (European Parliament and the Council, 2006).

Ala-Mutka, (2011) has developed a supporting structure for basic skills and everlasting learning in which eight competencies are identified; there were

- Capability to communicate in the mother language;

- Skill to communicate in foreign languages;

- Basic concepts and competences in Science, Technology and Mathematics;

- Competency regarding use of digital skills;

- Knowledge to acquire;

- Competences regarding Civic and Social responsibilities;

- Intellect of initiative and enterprise;

- Ability of expression and social awareness

The European Commission (2010) has made significant efforts in expansion of more advance digital media covering quality criteria to meet global challenges. The educational system has lack of necessary skills to meet new challenges for effective practice and understanding regarding the use of digital technology as a foundation for practical learning during classroom instruction. Draxler (2002) mentioned that It started the beginning of connecting cultural having too much of the stating quality

enriched with vast amount of knowledge and easy access in different shapes with lot of enthusiasm, energetic and forceful collection where knowledge and information is continuously updated and improved. Digital media and communication technology has adding with exchange facility of information, securing privacy, innovate people's life style and behavior (Coiro et al., 2008). They are converting unusual and special source of education, self-regulated and collaborative learning. Moreover it also converted as a significant instrument for the development of modern literacy, digital technology has rapidly adopted for literacy with such fruitful results in very short period of time. No other technology for the educational purposes allows the sudden spread of information even more advance technologies made so easy access of information just connected it to single link (Coiro et al., 2008). Basic change is not formulation of technologies as artifice but in their adoptability and suitability as an instrument to agent of change in our thinking style (Huvila, 2012). In setting the idea of digital literacy some educationist try to link it as association with the motor skills and abilities required for more efficient use of internet and digital technologies (Martin, 2005; Cartelli, 2010; Ala-Mutka, 2011). Martin (2005) describes that digital literacy deals with the ideas as various type of literacy expert who adopt same perception has gone from limiting on definite competency to admitting that the literacy is more connecting quality linked with the creation of competencies in the context of real life problem. Learners are facilitated with broad range of required skills due to availability of accurate and reliable information to have more command on self-regulating learning. The main objectives of the current study were to identify the teachers' skills about the utilization of Digital media in instruction, to know the effective transformation of instruction through digital media in classroom and to investigate the satisfaction of students with their teachers' competencies regarding use of Digital media.

Material and Methods

The study was descriptive in nature while mixed design was adopted to conclude the results. The population of the study involved Government College University Faisalabad referred as GCUF. Survey model was considered appropriate to collect data from the respondents. Sample of the study consisted of five Head of Departments for semi structured interviews, ten teachers, two from each faculty for classroom observation and 100 M. Phil research scholars for quantitative data, 20 from each faculty.

Development of Research Instruments

The researcher used three self-developed instruments for data collection for with respect to explore the above mentioned research questions. The first instrument was adopted for the sample of the students regarding survey. Secondly to collect the views of the chair persons, a semi structured interview protocol was administrated while third and final instrument was an observation schedule in classroom setting to record practices of teachers regarding use of digital media at Government College University Faisalabad.

Validity of Research Instruments

Validation is one of most important and concerning aspect of research tool. The panel of experts in the field of education was requested to refine the items for the intention of its validation. Three point rating scale, most relevant, relevant and less relevant was administrated to validate the questionnaire. There were 35 items in the questionnaire, mean value was calculated of each item however mean values of 15 items were less three so those items were excluded from the final instrument.

Reliability of Instrument

The Cronbach,s Coefficient Alpha was applied to check the reliability of the data in the study. Pilot testing was conducted on 20 respondents from GCUF who were excluded in final sample. The reliability coefficient was found 0.91

Results and Discussion

Descriptive and inferential statistics were applied to describe, summarize and explore the results of data. Analyses of variance (ANOVA) were used to investigate the difference within variables of interest in the study.

Table 1
Comparison among Departments

Departments		Mean	Std. Deviation	Std. Error	F-value	P-value
Software Application	Education	3.15	1.17	0.26	3.431	0.012
	Computer Science	3.32	0.97	0.19		
	Physics	3.61	1.54	0.41		
	Arabic	2.26	1.42	0.32		
	Islamic Studies	2.78	1.03	0.23		
	Mean	3.02	1.26	0.13		
Informational Access	Education	3.48	1.25	0.28	3.446	0.011
	Computer Science	3.71	0.87	0.17		
	Physics	3.83	1.59	0.42		
	Arabic	2.50	1.52	0.35		
	Islamic Studies	3.23	1.07	0.24		
	Mean	3.35	1.30	0.13		
Instructional Digital devices	Education	4.50	1.51	0.34	3.723	0.007
	Computer Science	4.74	1.17	0.23		
	Physics	4.88	1.95	0.52		
	Arabic	3.16	1.94	0.45		
	Islamic Studies	4.09	1.37	0.31		
	Mean	4.28	1.65	0.16		

The above table indicates comparison of data among five Departments of Government College University Faisalabad. The Overall means of Software

application are stated as, Department of Physics (3.61), Department of computer sciences (3.32) Department of Education (3.15) respectively, which shows satisfaction regarding Software application. Mean scores of Department of Islamic Studies (2.78) and Department of Arabic (2.26) show that students are dissatisfied with the Software application while overall mean of all Departments show the trend of responses towards satisfaction. P value of this component is 0.012 which is highly significant.

Overall means of Informational access are reported as, Department of Physics (3.83), Department of computer sciences (3.71) Department of Education (3.48), Department of Islamic Studies (2.78) respectively, which shows satisfaction regarding Informational access. Mean scores of   Department of Arabic (2.50) show that students are dissatisfied with the Informational access while overall mean of all departments show the trend of responses towards satisfaction. P value of this component is 0.011 which is highly significant.

Overall means of Instructional digital Devices are calculated , Department of Physics (4.88), Department of computer sciences (4.74) Department of Education (4.50), Department of Islamic Studies (4.09), Department of Arabic (3.16) respectively, which shows satisfaction regarding Instructional digital Devices while overall mean of all Department show the trend of responses towards satisfaction. P value of this component is 0.007 which is highly significant.

Classroom Observation

The researcher took the decision to observe digital literacy learning in real setting of classrooms instruction which simply mean a comprehensive analysis of research questions. By screening how teaching practices were supportive and being adopted to carry digital media. The findings from the third instrument were administrated as a check list of what skills were developed in classroom. It also elaborated student learning abilities and teacher's own capabilities involved in teaching. Classroom observations checklist involved an investigation of the results yield from student's questionnaire instrument. The check list was organized by determining a spread sheets and arranging skill level headings under each specific area of subject. To meet the ethical standers of research, chairpersons of the department were approached for the grant of permission as well as classroom teachers. A form for permission to observe the classroom was signed for each classroom teacher.

The teaching practices which were observed in real classroom setting proved clearly support digital literacy in Department of Physics, Department of computer sciences, Department of Education while Department of Islamic Studies and Department of Arabic were less supportive for the use of digital media.

Interviews of Chairpersons

The interviews were conducted from teachers to over view all three research questions to go beyond with the earlier test instrument. The interview was developed

with nine questions that addressed software applications, informational access and use of instructional digital devices in classrooms. Five Chairpersons of departments were interviewed to know their perception about the use of digital media in classroom instruction. The questionnaire was persistently developed and designed in account not to represent leading questions or criteria that were not particularly narrate to the research questions. The digital literacy that teachers used was a part of the interview. The digital literacy is shown in Table.

Table 2
Digital literacy

Indicators	Competencies
Software Application	Word processor
	Power point
	Spreadsheet
Informational Access	Use of Internet
	Online information
	E-Mail
Instructional Digital devices	Laptop/ Computers
	Multimedia
	Printers

Conclusions

The study was conducted to determine how teachers supported and developed the digital literacy for students. Another objective was to measure students' satisfaction level towards the teacher's competencies in use of software applications, informational access and instructional digital devices. The results were gathered through questionnaire, class observations and interviews.

It was admitted by the majority of respondent that students of Education Department, Computer Science Department and Physics Department were satisfied with the use of software application such as Word Processor, Power Point and Spread Sheet while the students of Islamic Studies and Arabic Departments are dissatisfied with respective software applications.

It was concluded that students from Department of Education, Department of Computer Science, Department of Physics and Department of Islamic Studies were satisfied with the abilities of their teachers with respect to informational access in class room instruction whereas the students from Department of Arabic were dissatisfied with competencies of teachers regarding this. The results revealed that instructional and digital devices were used by the teachers in GCUF efficiently and effectively.

Observations of classroom practices were also part of the study the data collected through observations showed that the teachers on average were supporting their instruction with help of digital media however, the Chairpersons interviews revealed that there were little evidence of using digital media in classrooms instruction

that was due the lack of skill development in informational technology and curriculum structure related problems.

Recommendations

- It is suggested that a training program should be arranged for university teachers to improve their skills regarding the use of digital media in classrooms.

- Financial problems should be encountered by university administration in adoption of digital technology.

- Principles of effective use of digital technology should be practically implemented by university teachers.

- Vast access of digital technology should be provided to create opportunities for sharing teaching materials for students.

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