UNIVERSITY TEACHERS' ATTITUDE TOWARDS INFORMATION AND COMMUNICATION TECHNOLOGY (ICT)

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Abstract:

Information and Communication Technology (ICT) is about new ways in which people can communicate, inquire, make decisions and solve problems (Sarkar, 2012). Integration of ICTs would not only help in promoting personal growth but also in developing "knowledge societies." The present study was conducted on 200 university teachers of different faculties to compare their attitude towards ICT use. No difference was found with regard to attitude towards ICT use of university teachers of different faculties, viz. Arts/Education and Science/Engineering and Technology. Majority of university (around 98%) agreed about the importance and use of ICT in teaching & Instruction, whereas more than half of the sample of teachers were found agreeing about the use of ICT in Social & Health sector.

Technology is a part of everyday life in the 21st century. Information and Communication Technology (ICT) is a force that has changed many aspects of the way we live. If one has to compare such fields as medicine, tourism, travel business, law, banking, engineering and architecture, the impact of ICT across the past two or three decades has been enormous. The way these fields operate today is vastly different from the ways they operated in the past. But, in the field of education, there seems to have been lesser change as compared to other fields.

There have been a number of factors impeding the implementation of ICT in education across all sectors. These have included factors such as, a lack of funding to support the purchase of the technology, a lack of training among established teaching practitioners, a lack of motivation and need among teachers to use ICT as teaching and learning tools (Starr, 2001). But, in recent time, certain factors have strengthened and encouraged moves to use ICTs into classrooms and learning settings. These have included a growing need to explore efficiencies in terms of program delivery, the opportunities for flexible delivery provided by ICTs, the capacity of technology to provide support for customized educational programs to meet the needs of individual learners and the growing use of the Internet and www as tools for information access and communication (Kennedy and Mc Naught, 1997).

Integrating ICT in teaching and learning is higher on the educational reform agenda. ICT is about the new ways in which people can communicate, inquire, make decisions and solve problems (Sarkar, 2012). Therefore, the integration of ICTs would not only help in promoting personal growth but also in developing "knowledge societies."

Attitude towards ICT

It is the predisposition of a person to respond positively or negatively towards computers and related technologies. It affects everything the person does with the computer and in fact reflects

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what experience the user has and is hence a determining factor of the user's behaviour towards them (Ololube, 2009).

Some Related Research Studies

Al Zaidiyeen, Mei and Fook (2008) investigated the level of Information and communication technology (ICT) use for educational purposes by teachers in Jordanian rural secondary schools. Questionnaires were distributed among 650 randomly selected teachers in Jordan. The findings suggested that ICTs use for educational purposes should be given greater consideration than it currently receives. In general, the results were consistent with those previously reported in studies related to the use of ICT in the educational settings.

Edmunds, Thorps and Conole (2010) explored United Kingdom students' attitudes towards and use of Information and communication technology (ICT) in all Open University courses. Students' lives and experience beyond the university have been largely unexplored. Research into student experience of ICT used a validated model—the technology acceptance model—to explore the influence of work and social/leisure contexts as well as course study, on attitudes towards and take up of technology. The results suggest that usefulness and ease of use are key dimensions of students' attitudes towards technology in all three contexts and also that ICT is perceived most positively in the context of work and technology use at work is an important driver for technology use in other areas.

Kubiatko, Usak, Yilmaz and Tasar (2010) focused on differences related to information and communication technologies (ICT) among Czech and Turkish university students. Student attitudes were evaluated summatively and with respect to gender, year, country, and type of residential area. The sample consisted of a total of 770 university students (316 Czech and 454 Turkish). The data analysis included factor analysis, MANCOVA, ANOVA, and t-test. The factor analysis yielded five dimensions: 1) Influence of ICT on teaching process, 2) Influence of ICT on human body and environment, 3) Use of ICT in teaching, 4) School and ICT, 5) ICT as didactic equipment. As a result, students from the Czech Republic, male students, sophomores, and students living in town showed more positive attitudes in comparison to other respective groups.

Sipila (2010) investigated if there is a difference in attitudes towards Information and communication technology (ICT) among teachers of Lieto in Finland who have a personal laptop computer (provided by the employer) compared to teachers who have not. The data were collected by an online questionnaire, to which 69 teachers out of 196 (31%) from four schools replied. Analysis of the data reveals that teachers who used personal laptops in their work regarded the use of ICT, both in teaching and in general, more positively than teachers who did not.

Awan (2011) investigated how the 'level' of Information and communication technology (ICT) uptake amongst teachers of United Arab Emirates and the 'quality' of ICT use in classrooms can be promoted by changing public school teachers' attitude towards technology adoption. The issue of teachers' technology, confidence, and ICT lesson planning skills were tackled by providing training sessions that focused on encouraging them to use educational multimedia game resources for teaching and learning purposes. The results of this study revealed a positive shift in the responses which indicated that insufficient class time and inadequate training opportunities were the major obstacles in the process of ICT integration.

Elsaadarii (2012) in his research investigated whether gender is a factor that should be considered when considering teaching staff attitude towards Information and Communication

Technology (ICT). Survey methodology was facilitated through the use of the questionnaires. The survey domain was a random sampling of teaching staff in Egyptian higher education institutions (HEI). The population for this study was 500 full-time Faculty staff, only 412 returned and complete questionnaires were considered as the study sample. The results showed that no difference between being a male or a female as regard to the attitude toward ICT among teaching staff in Egyptians HEI, therefore, gender was not a significant factor when considering attitude toward ICT by teaching staff members in Egyptians HEI.

Sanchez, Marcos, Gonzalez and Lin (2012) investigated in – service teachers' attitude towards the use of ICT in the classroom. 170 in – service teachers from kindergarten to high school participated in the study. Teachers' attitudes towards ICT are highly positive but the use of them in class is scarce and it is subjected to innovative processes.

The above studies reveal that attitude towards ICT is very important for integrating technology in teaching and learning settings. So, the present study was conducted to study attitude towards ICT of teachers at the university level.

Objective

To compare the attitude towards ICT of Social Science and Science university teachers with respect to various dimensions, viz.

- ICT use in instructional settings
- Confidence in ICT use
- Encouragement from colleagues
- ICT and health problems
- ICT and socialization
- ICT relative advantage
- ICT complexity
- Barriers to ICT use.

Method

Descriptive of method research survey was employed in the present study to investigate university teachers' attitude towards ICT.

Sample

For the present study, stratified random sampling technique was employed. The sample comprised of 200 Panjab University teachers of different faculties. 100 teachers belonged to the Arts/ Education department and 100 teachers belonged to Science/Engineering and Technology department.

Tool used

Scale of Attitude towards ICT use (developed by the authors) was used. The scale comprised of 74 items in eight domains viz., ICT use in instructional setting, confidence in ICT use, encouragement from colleagues, ICT and health problems. ICT and socialization, ICT relative advantage, ICT complexity and barriers to ICT use. Reliability of the scale was 0.85.

Data Collection

University teachers were asked to respond to 74 Likert-type statements dealing with their attitude towards ICT use. The attitude scale consisted of 8 dimensions which were analyzed in details. Table 1 illustrates the frequency of participants' responses to the 74-item Attitude towards ICT Use Scale.

Data Analysis

For data analysis, dimension analysis of university teachers' attitude towards ICT use in different faculties was done. Results have been presented in the table below :

Table 1

Dimension Analysis

Faculty	Dimension	SD	%	D	%	N	%	A	%	SA	%
Arts/Education Faculty	ICT Use in Instructional Settings	-	-	-	-	2	2.0	88	88.0	10	10.0
	Confidence in ICT use	-	-	-	-	19	19.0	75	75.0	6	6.0
	Encouragement from Colleague	-	-	6	6.0	19	19.0	65	65.0	10	10.0
	ICT and Health problem	6	6.0	43	43.0	33	33.0	16.0	16.0	2	2.0
	ICT and Socialization	-	-	4	4.0	40	40.0	56	56.0	-	-
	ICT Relative Advantage	-	-	-	-	8	8.0	61	61.0	31	31.0
	ICT Complexity	-	-	-	-	6	6.0	70	70.0	24	24.0
	Barriers to ICT Use	-	-	2	2.0	63	63.0	32	32.0	3	3.0
Science/Engr. & Technology Faculty	ICT Use in Instructional Settings	-	-	-	-	4	4.0	86	86.0	10	10.0
	Confidence in ICT use	-	-	-	-	12	12.0	79	79.0	9	9.0
	Encouragement from Colleague	1	1.0	3	3.0	23	23.0	58	58.0	15	15.0
	ICT and Health problem	4	4.0	29	29.0	45	45.0	18	18.0	4	4.0
	ICT and Socialization	-	-	2	2.0	45	45.0	51	51.0	2	2.0

	ICT Relative Advantage	-	-	1	1.0	7	7.0	49	49.0	43	43.0
	ICT Complexity	-	-	-	-	5	5.0	71	71.0	24	24.0
	Barriers to ICT Use	-	-	5	5.0	39	39.0	52	52.0	4	4.0

(* SD=Strongly Disagree, D=Disagree, N=Neutral, A=Agree, SA=Strongly Agree)

Table 1 reveals that the majority of the respondents (98%) of Arts/Education faculty agreed or strongly agreed with ICT use in instructional settings, and only 2% of teachers had neutral position. On the other hand, almost all of the respondents (96%) at Science/Engineering & Technology faculty either strongly agreed or agreed to these dimension. A minority of the respondents (4%) indicated they had neutral position.

Also, the table shows that 81% of subjects at Arts/Education faculty and 88% of respondents at Science/Engineering & Technology faculty agreed or strongly agreed with "confidence in ICT use" subscale. On the other hand, there were 19% and 12% of respondents respectively at Arts/Education and Science/Engineering & Technology faculties that had a neutral position.

Majority of the subjects (75%) at Arts/Education faculty agreed or strongly agreed with "encouragement from colleagues". However, nearly a fifth (19%) of the respondents had a neutral position in response to this subscale. Also a minority of only 6% disagreed with the dimension. On the other hand, most of the respondents (73%) at Science/Engineering & Technology faculty agreed or strongly agreed with the dimension. The remainder had a neutral position (23%) or disagreed (4%) with "encouragement from colleagues" subscale.

Nearly half (49%) of the subjects at Arts/Education faculty disagreed or strongly disagreed that ICT may cause health problems. Also around a third (33%) of the respondents had a neutral position in response to this subscale and only 18% agreed with the dimension. Furthermore, in response to "ICT health problem" dimension, 33% of the subjects at Science/Engineering & Technology faculty disagreed with it. Also 22% of the respondents agreed and 45% had neutral position towards this subscale.

About "ICT and Socialization" domain analysis, more than half of the participants (56%) in both Arts/Education faculty agreed with ICT and its socialization effects on users. Also a minority of 4% of the subjects disagreed and 40% had neutral position. Similarly, 53% of respondents at Science/Engineering & Technology faculty agreed with the domain, while 45% of the participants had no idea about the subscale and only 2% of teachers sample disagreed to ICT social effects.

Regarding analysis of "ICT relative advantage" domain, the majority of the participants (92%) at Arts/Education faculty agreed or strongly agreed that ICT use has relative advantage in instruction. At the same time, 8% of the respondents indicated their neutral position. Also, in response to the domain, most of the subjects (92%) at Science/Engineering & Technology faculty indicated their agreement. The remainder either had a neutral position (7%) or disagreed (1%) with the subscale.

According to the analysis of "ICT Complexity" domain, the majority (94%) of the university teachers' sample at Arts/Education faculty agreed or strongly agreed that they had no difficulty with applying ICT. Only 6% of participants had neutral position. At-the same time, 95% of respondents at Science/Engineering & Technology faculty agreed with simplicity of ICT. Only a minority of 5% participants had neutral position about this domain.

In terms of the domain "Barriers to ICT Use" analysis, only 35% of university teachers' sample at Arts/Education faculty agreed with existence of barriers to ICT use in the university. Whereas 63% of subjects had neutral position and only 2% of remainder disagreed with existence this domain. On the other hand, 56% of subjects at Science/Engineering & Technology faculty indicated their agreement with existence barriers to ICT use; in addition 39% of participants had neutral position. A minority of only 2% disagreed with the subscale.

Findings related to dimension analysis of attitude towards ICT use

- Majority of the respondents (98%) of Arts/Education and Science/Engineering respondents (96%) faculties agreed or strongly agreed with ICT use in instructional settings.
- Majority of the respondents (81%) of Arts/Education and Science/Engineering respondents (88%) faculties agreed or strongly agreed with "confidence in ICT use" subscale.
- Majority of the respondents (75%) of Arts/Education and Science/Engineering respondents (73%) faculties agreed or strongly agreed with "encouragement from colleagues" subscale.
- Above half of the respondents (49%) of Arts/Education and around one third of Science/Engineering respondents (33%) faculties agreed or strongly agreed with "ICT health problem" subscale.
- More than half of the participants (56%) of Arts/Education and around one third of Science/Engineering respondents (53%) faculties agreed or strongly agreed with "ICT and its socialization effects on user".
- Majority of the respondents (92%) of Arts/Education and Science/Engineering respondents faculties agreed or strongly agreed with "ICT uses have relative advantage in instruction" subscale.
- Majority of the respondents (94%) of Arts/Education and Science/Engineering respondents (95%) -faculties agreed or strongly agreed with "that they had no difficulty with applying ICT" subscale.
- Around one third of the University Teachers respondents (35%) of Arts/Education and more than half (56%) Science/Engineering respondent's faculties agreed or strongly agreed with "existence of barriers to ICT use in the university" subscale.

Educational Implications

The results of this study suggest that classroom technology should become an integral part of the core mission for the institution, with its primary focus rooted in the paradigm shift from teaching to learning. Programs that foster the use of information and communication technology (ICT) in the classroom increase familiarization with technology and lead to empowerment in technology as well as teaching. The university administrators should place emphasis on building teachers' perception of their ability to use ICT with a view to transform classroom practice.

- University authorities should provide financial help to teachers so that teachers adapt ICT in the classroom.
- More ICT equipments and facilities are needed to be provided at the university level for teachers such as laptops for all teachers, interactive whiteboard, data Projector, etc.
- The university administrators should provide advanced practical training for the university teachers on how to integrate ICT tools in instructional settings.
- The university administrators should support their faculty members with up-to-date software programs, hardware equipments and networking facility.

- Tangible incentives and effective reward for using ICT in classrooms (e.g., leave time, contribution towards tenure, financial rewards) should be provided by the university administrators in order to encourage the university teachers to use ICT in instructional settings.
- The administrators should evaluate faculty members on utilization of ICT on an ongoing basis.

Conclusions

Adoption of Information and Communication Technology (ICT) in education requires establishment of infrastructural facilities, acquisition of technologies and their periodic updating, management and professional support services. Attitude backs action.

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