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ICT Skills and Attitude as Determinants of ICT Pedagogy Integration

ANITA RASTOGI
SMRITI MALHOTRA
Department of Educational Studies
Faculty of Education
Jamia Millia Islamia
New Delhi, India

Abstract:

In a developing country like India, the mismatch between the techno-centric culture mindedness and the teachers' pedagogic culture results in the alienation of the teacher from the use of technology. The present paper focuses on examining teachers' attitude towards ICT; level of their competence in ICT skills; their experiences with ICT; and how best they use ICT in their current educational practice. Maybe due to the overwhelming strength of different types and levels of ICT skills and attitudes possessed by teachers or due to their staunch commitment to various pedagogical inputs in the teaching-learning process, it is likely that the actual integration of ICT in pedagogy might not take place, both strengths-hanging loose by themselves. This study tries to explore how the proficiency in ICT skills and attitude towards technology can help in ICT-pedagogy integration. It reveals a strong positive relationship between the possession of ICT skills by teachers, their attitude towards ICT and actual implementation of ICT in their classroom teaching.

Key words: ICT, ICT-Pedagogy Integration, ICT skills, attitude towards ICT

Introduction

With the advent of various formats of Information and Communication technology (ICT), the world is shrinking at a rapid pace. Today, ICT serves as a major factor in shaping the

new global economy and producing fast changes in the society. There is a widespread acknowledgement that ICT can be used to enhance both learning and teaching in one go. It has great potential, to transform the ways in which the teachers teach and the students learn. ICT provides an array of powerful tools that can help in transforming the present isolated, teacher-centred and text-bound classrooms into technology enriched, student-focused and interactive knowledge environments. As a learning tool, ICT gives some good opportunities in terms of the learning efficiency and quality. It provides opportunities for greater flexibility, interactivity and accessibility for engaging teaching and learning at the individual, group, and societal levels. No doubt, ICT has a unique and unusual place in the classroom as an educational innovation.

In order to gain positive outcomes of ICT, there are some inevitable problems that need to be overcome by educational institutions and people responsible for the implementation of this innovation. Today, there is a growing awareness among policy makers and educators that the educational system needs to be reformed if it is to effectively equip students with the knowledge, attitudes and skills that they will need to succeed and thrive in the knowledge economy. The teacher education system of the country in particular needs to take full cognizance of the ICT input in making this innovative process successful. The need of the hour is to develop technology savvy teachers who are able to prepare students for the 21st century digital age, providing them meaningful education through the integration of technology in the process of education through healthy blending of the cult of traditional pedagogy with the impress of the cult of ultra-modern ICT inputs - electronic as well as others. What is important is to consider how ICT can be integrated into education, or should be, in order to take due advantage of its potentials for educational purposes. Thus the process of schooling must be envisaged not simply smart or extra-smart but also targeted at delivering what it ought to in order to make room for building a true learning society, a truly smart knowledgeable era.

India recognized the importance of Information & Communication Technology (ICT) in education ever since the dawn of its independence. Different policies have been

formulated w.r.t. ICT and its integration in education. Some of these are: Computer Literacy and Studies in Schools (CLASS); Information and Communication Technology in Schools (2004); The Information Technology Act (2000); The Science and Technology Policy (2001); National Task Force on Information Technology and Software Development (1998); ICT Policy in School Education (2009). Taking into account the efforts being made by the government for successful ICT-pedagogy integration, it can be said that India is heading towards the second stage, i.e. the foundation stage of ICT-pedagogy integration. Technology by itself might not lead to change; rather it is the way in which teachers integrate technology that has the potential to bring change in the education process. Having ICT in the education environment does not automatically ensure that high quality, effective teaching-learning would take place; it may change a teacher's role but perhaps not alter pedagogy. To achieve this, teachers must believe or be made to feel that ICT is a valuable educational tool to boost the teaching-learning process. Thus it becomes incumbent upon them to make a commitment to improving their ICT skills, and in turn, integrate the ICT into their regular classroom teaching practices. In order to integrate ICT more effectively in the educational as well as development environment, it may be worth understanding the teachers' present level of ICT skills and also their attitudes related to the ICT–pedagogy integration syndrome to improve their ICT skills and thereby, making the teaching-learning and development process more effective.

The technology initiatives taken to be adopted by educational policy-makers worldwide seem to be focused on the tangible potentials of technology per se to manipulate classroom interaction in a more constructive and meaningful way to cause inclusive development, much though in a hurry. In developing countries, in particular, the policy-makers appear to have adopted ICT in education to accelerate the nation's development efforts too in the process. In such hasty adoption, however, building teachers' skills and attitudes toward ICT would have often been ignored. The literature hints at the need for studies not only on the teachers' level of ICT skills and their attitudes toward ICT but also on the factors responsible to have

produced or hindered them. Research done in the foreign countries on working with ICT, well-nigh remain only context-specific- due to population, sampling, and/or design limitations- may not necessarily be transferable to the Indian context. Hence, the need and urgency for an indigenous probe into the impact of smart technology on our system of schooling as a whole, and particularly, how best our teachers, pedagogy, ICT beneficiaries and propagators as well as other stakeholders in the educational enterprise perceive their role to be in the proactive integration of ICT and pedagogy in a healthy way. It is equally important to understand, in the process, the determinants that go a long way in building a positive attitude among teachers about the ICT input in education and the ICT skills needed for this purpose. Doing such a study would indeed be not simply interesting but also a challenging task.

Studying teachers' attitudes is particularly important in developing countries like India, where ICT is usually not a part of the school culture. Due to its novel presence in society at large and its intervention in schools in particular, technology may not be well received by the teachers lest it should prove to be an extra burden on them. The mismatch between the teachers' culture of techno-centric mindedness and their pedagogic culture would often result in their alienation from the use of technology. The delicacy of this situation calls for an investigation of teachers' attitude. The present study focused on examining teachers' attitude towards ICT, their level of technical ICT skills as well as their experiences with ICT and how they used ICT in their current day to day educational practices. It is likely that due to the presence of different types and levels of ICT skills and attitudes possessed by teachers or due to their various pedagogical practices, the actual integration of ICT in pedagogy may get hindered. This study attempted to identify the relationship between the possession of ICT skills by teachers, their attitude towards ICT and the actual implementation of ICT in the classroom, all this besides identifying the factors that determined the success of ICT-pedagogy integration to its facilitation stage.

The review of related literature revealed a number of factors that influenced teachers' decisions to use ICT in the classroom such as: access to resources (Gulbahar 2005); quality

of software and hardware (Mumtaz 2000); attitude towards technology (Albirini 2006), competence (Knezek and Christensen 2002); ease of use (Deaney et al. 2006); educational beliefs (Komis 2006; Ertmer 2005); self-efficacy beliefs (Gobbo 2001); incentives to change (Granger 2002); support and collegiality in their school (Hennessy 2010); school and national policies (Lawson 2000); commitment to professional learning (Jung 2005); and background in formal training (Afshari 2009). Among these factors, the strength of teachers' ICT skills and the attitude towards ICT as such seem to play a pivotal role in helping them make use of ICT in their teaching-learning process and in turn in proving themselves to be successful teachers and facilitators of ICT intervention and integration both of pedagogy and technology as their principal forte.

The Study Profile

The present study addressed the following research questions: 1) What are the levels of ICT skills and attitudes of teachers towards the use of technology in the teaching-learning process and to what extent do they affect the ICT-Pedagogy integration in real situations? and 2) In what ways do the teachers integrate ICT into their pedagogical practices?

❖ In the first phase a pilot survey was conducted to identify the schools having availability of ICT facilities (computers, projectors and internet facilities) and a total of 20 schools were selected from South Delhi, India, using the Purposive Sampling technique. From each of the selected schools, 5 teachers teaching class IX (one teacher from each scholastic area) were selected and administered the following three questionnaires:

• Questionnaire (1) "Faculty Attitudes toward Information Technology (FAIT 1.0)", consisting of a total of 68 items on a five point Likert type scale, was administered on teachers to gather data on five separate factors namely: Enthusiasm/Enjoyment (F1); Anxiety (F2); Avoidance (F3); E-mail Use for Classroom Learning (F4) and Productivity Improvement (F5).

• Questionnaire (2) "Technology Competencies for All Educators", consisting of 73 items on a four point Likert

type scale, was administered on teachers to gather data on their proficiency in ten ICT skill categories.

• Questionnaire (3) "Technology Use Questionnaire", consisting of 36 items on a five point Likert scale, was used as an instrument to elicit information from the teachers on how they use applications of ICT in planning their teaching and in their actual instructional practice.

❖ In the second phase of the study, based on the responses of the teachers regarding their attitude towards technology, proficiency in ICT skills and technology use, the responses of the teachers from the questionnaires were examined and classified into different dimensions based on their ways of integrating ICT in the pedagogical practices.

Then twenty teachers were selected for interview to observe the ways of ICT integration adopted by them in the teaching-learning process. A semi-structured interview schedule based on the responses given by the teachers was used to re-affirm and authenticate data collected through "TECHNOLOGY USE QUESTIONNAIRE".

Analysis and Interpretation of Data

Subjecting the data to statistical interpretation revealed quite a host of interesting findings along the identified six-fold areas of concern for teachers, as follows:

1. Teachers' Proficiency in ICT Skills

Teachers' ICT skills included their ability to use the wide variety of technology-related tools and their application to classroom teaching, in particular, and to the totality of teaching-learning process in general. In the present study, "Technology Competencies for All Educators" rating scale was used to gather data on proficiency of teachers in ICT skills on 10 skill categories. It consisted of 73 items, on a four point Likert instrument, entailing: Essential skills for computer operation, setup maintenance and troubleshooting (21 items); Word Processing Skills (11 items); Spreadsheet and Graphing Skills (5 items); Presentation Skills (5 items);

Telecommunication Skills (8 items); Web Design Skills (4 items); Grade Book Skills (7 items); Networking Skills (3 items); Teaching and Learning Environment Skills (5 items); Social and Ethical Skills (4 items). For analyzing the rating scale, the teachers were categorized as Proficient, Moderately Proficient and Not Proficient in terms of proficiency in ICT skills. As there were different numbers of statements for each of the skill category, so the ranges for each skill were calculated individually. Table 1 given below illustrates the outcome.

Table 1: Level of Teachers' Proficiency in ICT Skills

Skills	Not Proficient (%)	Moderately Proficient (%)	Proficient (%)	Mean	S.D.	χ^2
Word Processing Skills	6	10	84	38.99	8.18	115.77*
Telecommunication Skills	8	10	82	27.2	6.40	106.65*
Essential skills for computer operation, setup, maintenance & troubleshooting	5	18	77	70.1	13.39	88.34*
Presentation Skills	12	16	72	16.29	4.39	67.52*
Networking Skills	11	18	71	8.67	2.37	64.58*
Social and Ethical Skills	12	21	67	12.06	3.88	52.22*
Spreadsheet & Graphing Skills	7	29	64	15.45	4.40	49.58*
Teaching & Learning Environment Skills	13	32	55	31.8	8.81	26.5*
Grade Book Skills	28	28	44	17.28	7.66	5.11*
Web Design Skills	32	36	32	8.85	3.89	0.313**
TOTAL	7	29	64	246.86	54.34	49.58*

*** χ^2 value is significant at 0.01 level of significance, **χ^2 value is significant at 0.05 level of significance**

Teachers' Proficiency in ICT Skills as Determinant of ICT-Pedagogy Linkage: A quick glance at table 1 prima-facie shows that an absolute majority of the sample teachers, on an average 64%, were found to be proficient along different skill categories with their proficiency level as high as 84% in Word Processing, 82% in Telecommunication Skills followed by 77%, 72% and 71% proficiency level respectively in Essential Computer Skills, Presentation Skills and Networking Skills.

They were also found to be strong enough in their proficiency levels at 67% in Social and Ethical Skills, an average 64% in Graphing Skills but poorly so in their Teaching-Learning Environment Skills at just 55% level of proficiency, in Grade Book Skills and Web Design Skills far too poorly at 44% and 32% level of proficiency respectively. What is, however, found to be the most disturbing proficiency praxis was their below average proficiency in teaching-learning environment, which falls down to the eighth position in the order of priority among ten proficiency gradations that ought, indeed, to be their most important strength as school teachers since their principal responsibility and role is to spontaneously create an ample wholesome learning-teaching environment. Such an environment is needed not only for effective schooling but also for building a positively congenial and constructive attitude for making the interaction between pedagogy, on the one hand, and technology, on the other, pro-active and tangible.

The purpose is to cause systematic cohesion and integration between them, in an era of total quality management in education. It seems that the core element of building the required teaching-learning environment in a way perhaps got camouflaged as though in the tug of war between the cult of pedagogy and the intervention of ICT in the process of education in so far as this example of teachers is concerned. The scenario thus indicated the need to establish a balance of sorts between the proficiency parameters such that the focus remains intact on building a smooth climate to wholesomely integrate the virtual with the actual in the renewal process of schooling in this digital age. This, by the way, seems to be the weakest link that needs to be urgently addressed so as to make the teaching-learning environment central to the integration of pedagogy with ICT to make room for quality schooling.

Viewed from another angle, that is, in terms of interpretation of analysis along statistical significance of various proficiency premises, it is inevitable from Table 1 that the proficiency level of the sample teachers was found likewise to be heavily loaded in favour of Word Processing Skills, Telecommunication Skills and Essential Computer Skills with χ^2 values of 115.77, 106.65 and 88.34 respectively, all significant at 0.01 level of confidence followed successively likewise by

proficiency in Presentation Skills, Networking Skills, Social and Ethical Skills, and Graphical Skills, all again significant at 0.01 level of confidence. Here, too, the level of proficiency in Teaching and Learning Environment Skills fell far too below average, though statistically significant at 0.01 level of confidence, followed further dismally on Grade Book Skills and Web Design Skills. This analysis further confirmed lack of balance between the pedagogical skills and the ICT skills, skewed overwhelmingly in favour of the ICT skills than the pedagogical skills. It indicated an obvious hiatus between the intervention of ICT skills in teaching, causing little integration between technological inputs and pedagogical practices. The challenge of integration between pedagogy and ICT remained still gaping and gazing in the face, despite all claims to the contrary made here and there.

The analysis of the ICT-Pedagogy integration syndrome, in brief, tended to highlight how teachers can and do help establish a sense of belonging between ICT and pedagogy to promote the quality of schooling, on the one hand, and cause total quality management in the system of education per se, on the other, through blending the merits of both to fulfil their school master functioning collectively and together as an integral pursuit. To do so, the teachers ought to be conversant to the proficiency level primarily with the word processing skills, telecommunication skills, the essential computer skills and networking skills as well as secondarily with skills like spreadsheet and graphing, grade book and web -designing to facilitate their integration with the basic pedagogical skills like building healthy teaching-learning institutional climate for skilful presentation and transaction of the teaching-learning experiences in the classroom for optimum gain from the schooling potentials and practices. However, the analysis also sounds a note of caution in that the teachers ought necessarily to be adept in social and ethical skills to effect smooth and spontaneous ICT-pedagogy blending, a healthy blending of the multimedia technology with the instructional technology, both print as well as digital. The evidence tendered by the sample teachers did prove to show that they can do it, and do it meaningfully.

2. Teachers' Attitude towards Technology

In the present study, for studying the attitude of teachers towards technology, a five point rating scale, "Faculty Attitudes toward Information Technology (FAIT 1.0)" was administered to gather data from teachers on five separate indices. The FAIT (v1.0) consisted of a total of 68 items on a five point Likert instrument to gather data on five factors: Enthusiasm/Enjoyment (F1); Anxiety (F2); Avoidance (F3); E-mail Use for Classroom Learning (F4); and Productivity Improvement (F5). For analyzing the rating scale, the attitude of teachers was categorized as Highly Favourable, Favourable, Undecided, Unfavourable and Highly Unfavourable. For analyzing the avoidance and anxiety level, the rating scale was categorized as Low, Below Average, Average, Above Average and High as shown in Table 2. As there were different numbers of statements for each of the five factors, so the ranges for each factor were calculated individually.

Table 2: Teachers' Attitude towards Technology

Attitude	Teachers' Attitude (%)					Mean	S.D.	χ^2	Category
Enthusiasm (F1)	Low	below average	average	above average	high	60.01	6.68	88.4*	Highly Favorable
		1	2	48	49				
Productivity Improvement (F5)	highly unfavorable	unfavorable	undecided	favorable	highly favorable	58.3	7.14	20.72*	Favorable
			12	46	42				
E-mail Use (F4)	highly unfavorable	unfavorable	undecided	favorable	highly favorable	41.55	6.82	43.28*	Favorable
		4	15	46	35				
Avoidance (F3)	Low	below average	average	above average	high	39.23	4.91	66.32*	Undecided
		3	50	40	7				
Anxiety (F2)	Low	below average	average	above average	high	56.49	7.26	53.04*	Below Average
	37	48	12	3					
TOTAL						255.58	27.63	30.32*	Favorable

χ^2 value is significant at 0.05 and 0.01 levels of significance

Table 2 reveals that the attitude of teachers towards the use of technology in the teaching-learning process was by and large found to be favorable. It transpired that the teachers believed and confirmed that ICT provided new ways of reaching

vast amounts of information along with a variety of information sources and promoted knowledge-construction, searching for information, questioning, analyzing, summarizing and sharing it with others. Also, the use of ICT motivated the learners and helped the students with learning difficulties and slow learners, and promoted individualized learning. They further believed that the use of ICT saved teachers' and students' time, increased their productivity and also provided them with constructivist learning environment, promoting student-directed activities; collaborative and cooperative learning to develop in turn higher order thinking skills. This may be borne out by the teachers' response to individual attitude factors like enthusiasm, anxiety, avoidance, e-mail use and productivity level.

In statistical analysis, the value of chi-square (χ^2) for the five factors namely F1, F2, F3, F4, F5 were found to be 88.4, 53.04, 66.32, 43.28 and 20.72, respectively and the computed values of χ^2 for all the five factors being greater than the critical value of χ^2 were found to be significant both at 0.01 and 0.05 levels of significance. So, the observed results revealed that the difference between the observed and the expected frequencies was significant and cannot be explained away as a matter of chance or as sampling fluctuation, it could be concluded that these teachers had a favorable attitude towards incorporating technology as part of their teaching-learning pedagogy. In short, most of these five determinants based on teachers' attitude towards integrating technology with pedagogy proved to be helpful in their own respective ways, except that of initial avoidance or inertia to change always inherent to any innovation.

3. Stages ICT-Pedagogy Integration from Familiarity to Facilitation Level
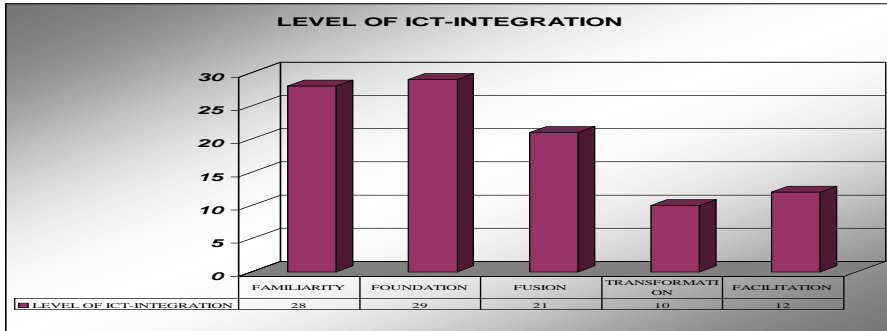

Figure 1: Teachers' level of ICT-Pedagogy integration

To explore the process of ICT-pedagogy integration, the level of technology integration by the entire group of teachers was studied along five developmental stages which indicated the results as shown in figure 1, revealing that 28% of the teachers were at the first level of ICT- Integration, i.e., they were at the *'familiarity'* level. These teachers knew the importance of computer and related technologies, but did not have the confidence in using computers in the teaching-learning process. They were only familiar with the basic concepts of ICT and simply aware about general applications of softwares (word processing, databases, spreadsheets, and communications).

Similarly, the second level, that is, the *'foundation'* level comprising 29% of the teachers, knew the basics of many software packages and could select an appropriate software package for a specific task. These teachers used ICT for professional purposes, focusing on improving their subject teaching in order to enrich their teaching with a range of ICT applications.

The third level was that of *'fusion'* which consisted of 21% of the teachers. These teachers could use more than one software package in the creation of a single product. They incorporated ICT into all aspects of their teaching, their presentation and management, to improve not only their own learning but especially also, the learning of their students. The teachers collaborated with other teachers in solving common problems and in sharing their teaching experiences with others.

At the fourth level, that is, at the *'transformation'* level there were 10% of the teachers. These teachers often used software to solve specific problems in innovative ways. Their students used not only computers but other related technology equipments in curriculum based projects by analyzing resources and creating new knowledge.

The *'facilitation'* phase of the spectrum of ICT-integration levels comprised of 12 % of the teachers who were able to share their knowledge of computers and other related technologies through modelling, peer coaching and mentoring as well as encourage the students and co-workers to experiment with software technologies.

4. Spectrum of Teachers' Technology Use

Table 3: Teachers' Technology Use

Technology Use	Teachers' Technology Use (in percentage)					Mean	S.D.	χ^2	Category
Computer Usage	Never	Rarely	occasionally	frequently	always	36.71	4.24	61.04*	Frequently
	0	1	18	55	26				
Professional Development	Never	Rarely	occasionally	frequently	always	15.26	2.03	78.24*	Frequently
	0	2	4	50	44				
Internet Usage	Never	Rarely	occasionally	frequently	always	14.57	2.40	35.6*	Frequently
	0	7	14	43	36				
Software Usage	Never	Rarely	occasionally	frequently	always	13.67	2.97	38.24*	Frequently
	3	12	15	43	36				
Curricular Integration	Poor	Below average	average	Good	excellent	30.16	4.88	35.36*	Good
	0	10	32	46	12				
Accessibility	Never	Rarely	occasionally	frequently	always	17.63	3.08	41.12*	Frequently
	0	12	10	50	28				
TOTAL						128	16.66	40.64*	Good

$* \chi^2$ value is significant at 0.05 and 0.01 levels of significance

The results of the technology use along six dimensions as shown in Table 3 would reveal that in many of the cases (49%) the integration of ICT into the pedagogical practices by the teachers was found to be 'Good', indeed excellent in some cases (19%). It was also found that the process of ICT – pedagogy integration occurred at an average level in the classrooms of a considerable percent of teachers i.e. 27 percent and at a below average level for 5% of the teachers. These

observations would be obvious from the analysis of Table 3 results along the stipulated six dimensions of the study.

The value of chi-square (χ^2) for ICT-Pedagogy integration for the six categories namely: 1) computer usage; 2) accessibility; 3) curricular integration; 4) professional development; 5) software usage and 6) internet usage were found to be 61.04, 41.12, 35.36, 78.24, 38.24 and 35.6 respectively. Thus the computed value of χ^2 in each category being greater than the critical value of χ^2, their values were found to be significant both at 0.01 and 0.05 levels of confidence. So, the observed results revealed that the differences between the observed and expected frequencies were significant and could not be explained away as a matter of chance error or sampling fluctuation of any kind.

5. Relationship among the Variables

In the present study, Pearson's product-moment correlation coefficient (r) was used to measure how well a linear equation described the relationship between the sets of two variables namely: teachers' ICT use and their attitude towards ICT; teachers' ICT skills and their level of ICT use; teachers' ICT skills and their attitude towards technology. It revealed how the change in one variable was accompanied by a change in the other or to what extent increase or decrease in one was accompanied by the increase or decrease in the other. Table 4 shows the correlation obtained between variables in the present study.

Table 4: Correlation between different variables

Variables	Pearson's Coefficient of Correlation (r)
1) Teachers' ICT Skills	0.86
2) Teachers' Technology Use	
1) Teachers' Attitude Towards Technology	0.77
2) Teachers' Technology Use	
1) Teachers' ICT Skills	0.75
2) Teachers' Attitudes Towards Technology	

Table 4 shows that the correlation between the research variables: attitude towards technology and technology usage was found to be r =0.77 (A High positive correlation). Results revealed that there was a substantial significant relationship (r

=0.77) between the level of ICT use for educational purposes and teachers' attitudes towards the use of ICT, which indicated that teachers had positive attitudes towards the use of ICT for educational purposes; therefore, the more they used ICT for educational purposes, the more they would improve their teaching-learning and help cause ICT-pedagogy integration.

The correlation between the research variables: teachers' ICT skills and teachers' technology usage was found to be r =0.86 (A High positive correlation). It suggested that teachers who were competent in ICT skills found ICT to be more useful; they approached it with greater confidence and displayed low anxiety and aversion towards using it.

The following null hypotheses were tested in the present study: (i) "There is no significant relationship between attitude of teachers and the level of integration of ICT in the pedagogical practices." The results revealed that the value of Z score (3.95) of the standard error of difference between the means exceeded the values 1.96 and 2.58 (critical values for rejection of a null hypothesis at 0.05 and 0.1 levels respectively), thus this null hypothesis could safely be rejected at the 0.05 and 0.1 levels, indicating that a significant relationship existed between the attitude of teachers towards technology and the level of integration of ICT in the pedagogical practices. Similarly as regards the null hypothesis (ii): "There is no significant relationship between ICT skills possessed by the teachers and the use of ICT in the teaching-learning process," it was found that the value of Z score (2.09) of the standard error of difference between the means was greater than 1.96 but less than 2.58 (critical values for rejection of a null hypothesis at 0.05 and 0.1 levels respectively), thus the null hypothesis could be rejected at the 0.05 (5%) level of significance but not rejected at 0.1 (1%) level of significance, indicating that a significant relationship existed between the teachers ICT skills & level of integration of ICT in the pedagogical practices.

6. Contribution of Teachers' ICT Skills and Attitudes in Determining ICT-Pedagogy Integration

The Pearson's correlation coefficient (r) was used to assess relationships between the two variables: (1) teachers'

ICT skills and (2) teachers' attitude toward technology. The correlation between the research variables: teachers' ICT skills and teachers' attitude towards technology was found to be r = 0.75 (A High positive correlation).

To see the combined influence of the two variables on the level of ICT-pedagogy integration, multiple R was computed and with a view to probe into the predictive efficiency of these variables, an attempt was made to develop multiple regression equation using ICT-pedagogy integration (X1) as a criterion and attitude of teachers (X2) and ICT skills (X3) as predictor variables. The obtained results were as follows:

$X1 = 0.172 X2 + O.177 X3 + 40.367$
$R1.23 = 0.84, \quad R^2 = 0.714$

The regression equation showed that for each unit increase in attitude of teachers towards ICT, the level of ICT-pedagogy integration gets increased by 0.177 units in it. Accordingly, the coefficient of determination (R^2) showed that 71.4% of variance in the criterion variable may be accounted for the two predictor variables. The rest of the variance, 28.6%, may be attributed to the variables not included in the prediction battery.

Conclusion

The results of the present study and its backup evidences revealed that the success of implementing the new curriculum with ICT in education depends greatly upon the attitudes of the teachers and their willingness to embrace such technology and ICT knowledge and skills. That being the case, teachers should possess not only ICT knowledge and skills but also have to develop and imbibe right attitudes towards ICT. This is important because teachers' attitudes toward technology have a marked influence on their readiness to utilize technology in their teaching. The results thus suggested that teachers who were competent in ICT skills found ICT to be more useful; they approached it with greater confidence and displayed low anxiety and aversion towards using it. Technology by itself may not lead to change. Rather, the efforts need to be made to develop a favorable attitude amongst teachers in favor of ICT use in teaching and raising their competence level and

proficiency in technological skills in order to exploit the potentials of ICT meaningfully in the teaching-learning process and to cause, in turn, an effective integration of ICT with pedagogy to make schooling tangible and its impact long lasting. The study thus opens up vast vistas of scope for teachers, teacher educators, pedagogues, ICT experts as well as educational planners and research scholars to probe into the various dimensions of building a happy blend between ICT and pedagogy inputs in the system of education per se and suggest a few working modules to help this cause.

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