



PERCEPTION OF COLLEGE TEACHERS TOWARDS ICT AND ITS IMPACT

KEYWORDS

Information and Communication Technology, Perceived impact, Classroom learning productivity.

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ABSTRACT

Information and Communication Technology (ICT) is a diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information. The present study intends to collect data pertaining to the Perception of College Teachers towards Information and Communication Technology and its Impact. The study focuses on college teachers, their attitude, awareness and their professional development assessment through ICT. The sample of the study is 811 teachers, randomly selected from 42 Colleges in Coimbatore district among the Paramedical (Nursing, Pharmacy, Physiotherapy and Occupational Therapy), Teacher Education, Arts & Science and Engineering & Technology disciplines. Tools namely ICT & Teacher Attitude, Teacher Anxiety and Avoidance, ICT Uses, Barriers in using ICT, ICT & Classroom Learning Productivity are used for the study. The Correlation and Regression analysis indicate that the research variables have made significant contributions towards Total ICT Perception. This study has its own special significance since future classroom will be a fusion of teaching, learning and technology, which is fast becoming a reality.

Introduction

Education and technology have become increasingly fundamental elements for the standard of living in the twenty-first century. Importance of education in almost all lifestyles has increased with the support of information and communication technology (ICT). During the past 20 years, the use of ICT has fundamentally changed the scenario of education. In order to take advantage of the intensive interaction between students and technology, it is the golden hour to successfully integrate ICT into education. With the help of ICT, teachers can continue to pursue the aim of education beyond the confines of classroom walls. There appears to be numerous factors that influence teachers' use of ICT tools. These significant and contributory factors are exhaustively dealt in this study.

Perceived Impact among teachers

The purpose of this non-experimental study is to examine the Teachers' perception towards ICT in teaching and learning processes. The study is designed primarily to capture the perception of teachers in Paramedical, Teacher Education, Arts & Science and Engineering & Technology. Further, the purpose of this study is to investigate to what extent ICT has become a part of teaching-learning and to determine what teachers believe impedes the successful integration of technology into classrooms. The key to successful integration of ICT into education is possible only through teachers and thus investigating factors directly related to their perception, attitude and other perceived factors towards ICT, which are significantly important.

The study attempts to assess the teachers' perceived impact of ICT on teaching-learning processes. This study has its own relevance and significance in the present context. Utmost care was taken in determining the significant variables which tend to contribute to the total ICT perception of teachers. Subject experts, the research supervisor and the investigator after exhaustive deliberations came up with six

research variables viz. Teacher Attitude, Teacher Anxiety and Avoidance, ICT Uses, Barriers in using ICT and ICT & Classroom Learning Productivity which contribute to the total ICT Perception.

METHOD OF THE STUDY

In the present study, Normative Survey Method is employed to describe and interpret what exists at present. The present study intends to collect data pertaining to the Perception of College Teachers towards Information and Communication Technology (ICT) and its Impact. The study focuses on college teachers, their attitude, awareness and their professional development assessment through ICT.

SAMPLE FOR THE STUDY

The sample of the study is 811 teachers, randomly selected from 42 Colleges in Coimbatore district among the Paramedical (Nursing, Pharmacy, Physiotherapy and Occupational Therapy), Teacher Education, Arts & Science and Engineering & Technology disciplines.

TOOLS USED FOR THE STUDY

FIVE tools are namely ICT & Teacher Attitude, Teacher Anxiety and Avoidance, ICT Uses, Barriers in using ICT, ICT & Classroom Learning Productivity are used for the study.

STATISTICAL TECHNIQUES USED FOR DATA ANALYSIS

Following statistical techniques are used in the present study.

1. Correlation Analysis.
2. Stepwise Multiple Correlation and Regression Analysis.

Table 1.1 CORRELATION ANALYSIS BETWEEN RESEARCH VARIABLES

Sl.No	Variables	r- value	Level of Significance	Remarks
1	ICT & Teacher Attitude Vs Total ICT Perception	0.770	P<0.001	High Positive Correlation
2	Teacher Anxiety & Avoidance towards ICT Vs Total ICT Perception	0.735	P<0.001	High Positive Correlation
3	ICT Uses Vs Total ICT Perception	0.841	P<0.001	High Positive Correlation
4	Barriers in using ICT Vs Total ICT Perception	0.592	P<0.001	Moderate Positive Correlation
5	ICT & Classroom Learning Productivity Vs Total ICT Perception	0.755	P<0.001	High Positive Correlation

From Table 1.1, it is revealed that,

- i. The Correlation between Teacher Attitude and Total ICT Perception is highly positive (0.770).
- ii. The Correlation between Teacher Anxiety & Avoidance towards ICT and Total ICT Perception is highly positive (0.735).
- iii. The Correlation between ICT Uses and Total ICT Perception is highly positive (0.841).
- iv. The Correlation between Barriers in using ICT and Total ICT

Perception is Moderate (0.592).

v. The Correlation between ICT & Classroom Learning Productivity and Total ICT Perception is highly positive (0.755).

STEPWISE MULTIPLE CORRELATION AND REGRESSION ANALYSIS

Regression is the determination of Statistical relationship between two or more variables. To study the correlation between research variables (Teacher Attitude, Teacher Anxiety & Avoidance, ICT Uses, Barriers in using ICT and ICT & Classroom Learning Productivity) with dependent variable (Total ICT Perception) Stepwise Multiple Correlation Coefficients (R) is calculated. In order to study the contribution of the said independent variables towards Total ICT Perception, Stepwise Regression Analysis is made. The variables and the codes used in the Stepwise Multiple Correlation and Regression Analysis are given in Table 1.2

Table 1.2 Variables and Codes Used in the Stepwise Multiple Correlation and Regression Analysis

S. No.	Variables	Code
1	Teacher Attitude	X ¹
2	Teacher Anxiety & Avoidance	X ²
3	ICT Uses	X ³
4	Barriers in using ICT	X ⁴
5	ICT & Classroom Learning Productivity	X ⁵
6	Total ICT Perception	Y

Out of 5 research variables entered, all the five variables have been found significant correlates of Total ICT Perception. The results of the same are given in Table 1.3.

Table 1.3 Results of Multiple Correlations of Research Variables with Total ICT Perception

S.No	Variables	Code	R	R2	df1	df2	F-ratio	Level of Significance
1	ICT Uses	X3	0.837	0.700	1	809	1957.14	P<0.001
2	Teacher Anxiety & Avoidance	X2	0.937	0.877	2	808	3010.86	P<0.001
3	Teacher Attitude	X1	0.967	0.936	3	807	4593.56	P<0.001
4	Barriers in using ICT	X4	0.981	0.962	4	806	7324.35	P<0.001
5	ICT & Classroom Learning Productivity	X5	0.994	0.988	5	805	139020.37	P<0.001

Multiple R = 0.994
Multiple R2 = 0.988

The results in the above 1.3 indicate that the Research Variables ICT Uses, Teacher Anxiety & Avoidance, Teacher Attitude, ICT & Classroom Learning Productivity and Barriers in using ICT have made significant contributions towards Total ICT Perception.

These variables together have contributed to the extent of 98% (R2 = 0.988) of variance in the Total ICT Perception.

4.7.1. Regression Coefficients and Equations

The regression coefficients of the significant variables for Total ICT Perception are given in Table 1.4.

Table 1.4 Regression of Classroom Learning Productivity on Predictor Variables

Variables	Code	B coefficient	β coefficient	P value
ICT Uses	X3	1.002	0.280	0.000

Teacher Anxiety & Avoidance	X2	0.973	0.359	0.000
Teacher Attitude	X1	0.934	0.252	0.000
ICT & Classroom Learning Productivity	X4	0.973	0.197	0.000
Barriers in using ICT	X5	0.911	0.243	0.000
Constant		-190.265	----	0.000

The results shown in the Table 1.4 are used to form the equations. The results under the column B-Coefficients are unstandardized and those of column

β- coefficients are standardized.

The two regression equations are formed and they are given below.

RAW SCORE FORM

$$Y = 1.002X3 + 0.973X2 + 0.934X1 + 0.973X4 + 0.911X5 - 190.265$$

STANDARD SCORE FORM

$$Y = 0.280X3 + 0.359X2 + 0.252X1 + 0.197X4 + 0.243X5$$

DISCUSSION

Attitude has played a pivotal role in determining the perceived impact of ICT among teachers in educational settings. Teachers' favourable attitude towards ICT integration in teaching learning process gives improved results. This is in accordance with the study **Rosnaini Mahmud, et al., (2010)** who demonstrated that teachers who positively perceived ICT had better ICT knowledge and skills. Also, **Caty-Ann Rampersad (2011)** in the study reported increased teacher confidence as ICT use added dynamism to their teaching and aroused greater enthusiasm and excitement.

Highly positive correlation between the attitude toward ICT teaching in the class and student engagement in the class shows that ICT will increase the student engagement in the class. This fact is supported by the study conducted by **Shabnam et al. (2012)**.

The present findings related to the influence of ICT on teaching confirmed **Brill and Galloway's (2007)** conclusion that most instructors feel that the technology they currently use in their classrooms has a positive influence on their teaching and students' learning. Complimenting the same fact, **Nicolle (2005)** found that faculty members recognized that ICT integration could enhance teaching and learning. The results of the present study also support the fact that ICT enhances Classroom Learning Productivity.

Jonassen et al. (2003) affirmed that ICT integration supports meaningful and cooperative learning. **Yan (2008)** asserted that ICT integration could be an effective tool for classroom interaction and collaboration to foster a high-order learning environment. This statement is in accordance with the results of the present study, which advocates that ICT promote constructive learning environment.

Usefulness of ICT in education has a paramount importance and the teachers of the present study have responded positively to the items. Similar findings have been reported by **Andrewartha & Wilmot (2001)** and **Salajagheh's (1998)**.

ICT offers a wide range of opportunities for both teachers as well as students thus making learning productive. **Mei-jung Wang (2014)**, affirms that the results showed that teachers have positive attitudes toward integrating ICT integration. **Salajagheh (1998)** reported a positive attitude about the use of ICTs in teaching and learning among Shiraz Medical University staff.

EDUCATIONAL IMPLICATIONS OF THE PRESENT STUDY

Research has shown that technology in education contributes to

both teacher effectiveness and student achievement. Hence, professionalization of teachers and their classroom practices will suitably influence the students. Teachers must realize that ICT can provide opportunities for new learning experiences. Teachers should willingly participate to perform new roles in the classrooms of the future. As students become more and more self motivated and self directed, the role of teachers, changes from information giver to ICT facilitator.

Many research studies have demonstrated that teachers' motivation is an influential parameter on their willingness to apply ICT in teaching-learning processes. Teachers should have the favourable dispositional attitudes in incorporating several ICT tools and methodologies in improving the educational processes. It is the stakeholders' responsibility to encourage all teachers by providing sufficient facilities and training for them to use ICT. These practices will promote comfort, confidence, acceptance, and eventually develop a positive attitude towards ICT integration into curricular transaction.

This study has its own special significance covering exhaustively varied disciplines viz. Paramedical, Education, Arts & Science and Engineering & Technology and to know the perceived ICT impact. This study has made a genuine attempt to portray varied factors that influence the overall teacher perception towards Information and Communication Technology (ICT) and its classroom integration.

CONCLUSION

ICT plays an inevitable role in the teaching-learning process considering the contemporary situation of the increasing dependence on technology related tools and applications. It provides more opportunities for teachers to handle classes interactively and gives room for students' holistic development. With multiple skills in demand, a balanced learning style and the discovery of new knowledge as in the incorporation of ICTs, a new terrain of knowledge can challenge the status quo of the teacher, text and classroom. This takes all learning to the form of an intuitive leap and rendering the new generation learner more self-sufficient, independent and confident. Hence, the effective use of ICT in educational settings makes classroom learning more attractive and productive.

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