

Investigating Teaching Effectiveness of College Teachers and Attitude towards Integrating ICT in Teaching- Learning Process: A Co-Relational Study

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ABSTRACT:

To fulfill the requirements of explosive education, it is necessary to prepare the learner for participation in the networked information society. Increasing the impact of information and communication technology, the current information revolution imparts a very important role in the education sector. The present study was conducted on a sample of 548 college teachers from 16 colleges meant 7 colleges from Kamrup (Rural) and 7 colleges from Kamrup (Metro) district of Assam. A standardized tool (Teaching Effectiveness Scale by Dr. Shallu Puri and Prof. S.C. Gakhar) was used to assess teaching effectiveness while attitude towards ICT was measured with the help of self- devised questionnaire by the investigators. The investigators used parametric statistics; Mean, SD, Z-test and Pearson Correlation to analyse the findings. The study is an earnest attempt to recognize the association between teaching effectiveness and attitude towards ICT. It also tried to identify the difference between gender and locality on teaching effectiveness and attitude towards the ICT of college teachers. The findings covered that there was a significant positive coefficient of correlation ($r = .140$, $p < 0.01$) between teaching effectiveness and attitude towards ICT of college teachers. There was no significant difference in gender on teaching effectiveness and attitude towards ICT. However, results indicated a significant difference in their teaching effectiveness and attitude towards ICT concerning their locality. The majority of teacher educators have a favourable attitude.

Keywords: Teaching Effectiveness, Attitude towards ICT, Gender, Locality, College Teachers.

1 INTRODUCTION:

In the present era of the digital world, people try to acquire various cognizance and mastery in diverse fields to prepare themselves for the fierce competition. To proceed with the demand and increasing consciousness, teachers must possess the divergent, dynamic role to meet the expectations of the students to cope up with the modern society. It is generally agreed that

teaching is regarded as a progressive activity, and to produce an efficient teaching environment teachers position is significant. In essence, the expectation of the nation reclines in the hands of an effective teacher. So, teachers are required to change pedagogical attributes by using new methods and innovative technologies (**Kalogiannakis, 2010**). Basically, in the entire domains of aspire, the effectiveness of the teachers stands as crucial to enable the students to confront the global challenges. The teacher effectiveness depends mainly on the teachers' attitudes, characteristics and classroom phenomena such as environment and climate, organization and management. As a consequence, it is cardinal for educators to integrate professional as well as personal skills for maintaining new and challenging roles in teaching and learning activities. One particular construct that has received considerable interest in the domain of effective teaching is the excellence attribute towards quality education (**Borkar, 2013**). So, the effectiveness of the teacher has become a matter of great concern in this regard. Many contributing determinants that have a prominent impact on the effectiveness of teaching viz. teaching experience, locality, academic knowledge, intelligence, attitude towards teaching, attitude towards technology advancements and many others. But, in this technologically advanced 21st century, teachers should have an optimistic attitude to use information technology in every sphere of academic activities. As, **Kersaint, Horton, Stohl, and Garofalo (2003)** stated that teachers with positive attitudes affect the utilization of technology which requires to change the pedagogical approach. In this era of information explosion, one of the basic requirements for education is to assemble students for engagement in a network-enabled information society. Due to the emerging demands of knowledge, there is a need to change some of the existing educational methods. An effective teacher not only capable of imparting entire educational curricula in the best efficient manner but also ensures the most optimal excellence of the students. Whence, it is imperative for teachers to be sufficiently competent in handling with the new millennium and also continues to bear ultimate strain relating to strenuous teaching and learning activities.

1.1 THE CONCEPT OF TEACHING EFFECTIVENESS:

Predominantly, the term teaching effectiveness is also expected as the ways of planning, knowledge of content, preparation, presentation and the classroom interaction which will be related to creative activities in the classroom (**Wenglinsky 2000**). Teaching related competency is one of the most powerful characteristics associated with a positive professional attitude,

positive thinking, enthusiastic activities, better reciprocal interaction with colleagues and students (**Ahmad, Said, Zeb, Sihatullah & Rehman, 2013**).

Ansari & Ansari (2000) conceptualized Teaching Effectiveness as the person's both cognitive and non-cognitive attributes (like academic qualification and distinctions, clarity of thought and expression, fluency, teaching strategy, etc.) to organize and execute a required course of action to achieve the desired result. According to them, these attributes constitute the key factor of human agency. Effectiveness related ability is one of the most powerful characteristics associated with student's physical, intellectual and psychological interests to face difficulties of life (**Dictionary of Education 2005**). In a nutshell, the word 'teaching effectiveness' possesses a vast repository as there are many different conceptions of assessing the effectiveness of the teacher. Teaching effectiveness comprehensively associated with the competency and efficiency of teachers which are the central importance of promoting desired changes in learning situations.

1.2 ATTITUDE TOWARDS ICT:

Attitude towards ICT is the inclination of acceptance or rejection of ICT as a tool for learning with the choice of preferentially positive and negative responses. Generally, it transforms every bit the person performs with the computer and hence reflects as a regulating factor of the user's behavior towards computers. Studies inculcated that positive attitude brings about provocation, exclusive instructional abilities, and higher adaptability of the teacher, create required expertise for the information age, and keep up with new teaching skills (**Albirini 2004**). Positive attitudes of teachers are regarded as key factors in their teaching practice. ICT is regarded as an integral component of educational and curricular reforms. Technology does not have an educational value in itself. It becomes significant when it associates with the use in the learning-teaching process.

2. LITERATURE REVIEW:

Rani & Devi (2015) attempted to determine the outcome of male/female, govt/private school and teaching experience of 150 senior secondary teachers from Sonapat district of Haryana. The result revealed that teacher effectiveness is no way affected by gender. But a significant difference is found connecting both types of school teachers on the effectiveness of teachers.

Kumar (2016) conducted a study by applying the Normative Survey method to determine the teacher effectiveness of higher secondary teachers and their correlation with sexes, type of management, marital status, locality and nature of school among 300 higher secondary teachers

by using random sampling. The conclusions of the analysis indicated no considerable distinction in teaching effectiveness irrespective of both the sexes, management, nature of the school, location of the school and marital status.

Onasanya, Shehu, Oduwaiye & Shehu (2010) observed the attitude of higher institution lecturers towards the integration of Information and Communication Technologies (ICTs) in Nigeria and also tried to survey the impact on age, locality, sexes, or teaching experience on the application of ICT. The findings revealed that sexes and academic qualifications of both had not put any incentives on the attitudes of lecturers towards the integration of ICT into teaching and research in tertiary institutions.

Ganesan & Krishnakumar (2016) studied the difference between teacher educators' attitude towards ICT and their attitudes level regarding gender and locality. Findings observed that locality established a significant effect on the educator's attitude. But it was not conclusively proved that gender had a specific impact on the teacher's attitude.

Mohinder Singh & Dr. Sheojee Singh (2015) studied the relationship between the variables teaching competence, attitude towards ICT and teacher effectiveness. The findings indicated no direct relationship concerning all three variables namely teaching competence, attitude towards ICT and teacher effectiveness among school teachers. It can be concluded that all three components are not influenced by each other.

Rajeswari & Sree (2017) studied the difference of influence gender and way of handling classes on teaching competence and attitude towards ICT of 500 teacher educators. Results revealed that teacher educators delivered an immense extent of competence in teaching. Data analysis examined a significant difference in both teaching competence and attitude towards ICT concerning the way of handling classes. Consequently, gender had a specific impact on attitude towards ICT, But not in teaching competence among teacher educators. Results also indicated a significant correlation between teaching competence and attitude towards ICT of teacher educators.

3. NEED AND SIGNIFICANCE OF THE STUDY:

In the educational sector, the effectiveness of teaching is one of the essential and prominent factors as the entire education system depends strongly upon ambitious, resourceful and effective teachers. In the present day context in India, to sustain with changing demands of a future generation, people must have to pay consciousness towards the effectiveness and efficiency of

teachers. College teachers occupy a place of crucial importance. It is impossible to manage any educational institution without the efficient performance and innovativeness of teachers. The study is significant as it will facilitate the process of professional development, a better understanding of achieving the effectiveness of teachers which is the most challenging issue for academic, administrative and overall enhancement of the organization.

On the other hand, it is essential to evaluate teachers' attitudes towards ICT and their technical competence as ICTs are being implemented in both private and government colleges. Thus it is essential to investigate the impact of their attitude and competencies towards ICT in determining the success of the educational system. Further, the results may help unfold the role of gender, locality and teaching experience which aids in understanding the role of demographic variables in teaching effectiveness. Hence, as a part of the significance of the study, it must try to throw the light on the aspects of attitude towards the use of information technology and how it is related to teaching.

4. STATEMENT OF THE PROBLEM:

The research related problem for the study is entitled "Investigating Teaching Effectiveness of College Teachers and Attitude towards Integrating ICT in Teaching-Learning Process: A Co-Relational Study".

The keywords of the present study are explained below:

- **Teaching Effectiveness:** In the present study effectiveness of college teachers mean the effectiveness of teaching delivered by the teacher in the following dimensions: academic and professional knowledge, adequate classroom management, proper use of motivation, rewards, punishment for students, personal and professional qualities, etc.
- **Attitude towards ICT:** In the present study **Definition of Attitude towards ICT** here is a vulnerability of a person to accomplish positively or negatively towards computers and related technologies.

5. OBJECTIVES:

- 1) To study the teaching effectiveness of male and female college teachers.
- 2) To study the teaching effectiveness of rural and urban college teachers.
- 3) To study the attitude towards ICT of male and female college teachers.

- 4) To study the attitude towards ICT of rural and urban college teachers.
- 5) To investigate the relationship between the teaching effectiveness of college teachers and their attitude towards ICT.

6. HYPOTHESES OF THE STUDY:

NH1) There will be no significant difference in gender (male/ female) on teaching effectiveness of college teachers.

NH2) There will be no significant difference in the locality (rural/urban) on teaching effectiveness of college teachers.

NH3) There will be no difference in attitude towards the ICT of college teachers based on gender.

NH4) There will be no difference in attitude towards the ICT of college teachers based on locality.

NH5) There will be no significant relationship between teaching effectiveness and attitude towards ICT of college teachers.

7 METHODOLOGY:

For the study, a descriptive survey method was chosen which was most appropriate to the project under investigation. This chapter describes the quantitative design used in the present study.

7.1 RESEARCH DESIGN:

For the present study, the correlational research design was used.

7.2 POPULATION:

In the present study the population refers to the college teachers working in 14 provincialized degree colleges of Kamrup District of Assam, affiliated to Gauhati University.

7.3 SAMPLE:

The sample for the study consisted of 548 college teachers from 14 reputed government colleges under Gauhati University of Kamrup (rural) & Kamrup (metropolitan), Guwahati city, Assam.

7.4 PROCEDURE OF DATA COLLECTION:

For the collection of the data, the investigator has personally visited the selected college and met the principal and clarified the purpose of the visit. After getting permission, the investigator visited the institution and met teachers in the department wise and explained the purpose of the study. They were also asked to take part voluntarily and consents are obtained without any force. They were requested to respond to the questionnaire and they were assured that their responses would be kept confidential. After that, the administration procedures of the tools were started.

7.5 INCLUSION CRITERIA:

- ❖ Participants should be both Male/Female.
- ❖ Participants should be working in Kamrup (Rural), & Kamrup (Metro) in Guwahati area.
- ❖ He/she should be a permanent teacher in the provincialized degree college.

7.6 TOOLS AND TECHNIQUES OF DATA COLLECTION:

- 1) **Teacher Effectiveness Scale:** The scale used for this study was constructed and standardized by Dr. Shallu Puri and Prof. S.C. Gakhar which comprises of 68 questions. The product-moment coefficient of correlation between the two tests was found to be 0.76.
- 2) **Attitude towards ICT Questionnaire:** The questionnaire used for this study was constructed and standardized by the investigator. This scale comprises 23 items with three dimensions. The questionnaire has both positive and negative statements. The contradiction of the negative items on the Likert-type scale was reversed. Reliability Co-efficient (Gutman Split-Half) was found to be .83

7.7 STATISTICAL SUPPORT:

The data were mainly analysed in terms of Mean, SD, Z-test and Pearson Correlation.

8 DATA ANALYSIS AND INTERPRETATION:

Objective No (1) To study the teaching effectiveness of male and female college teachers.

Hypothesis No (1): There will be no significant influence of gender (male/ female) on teaching effectiveness of college teachers.

Table No (1) Comparison between Male and Female

TES dimensions	Male			Female			Z	Sig (2-tailed)	R M
	Mean	SD	Mean Rank	Mean	SD	Mean Rank			
TES_I	20.6	2.73	267.70	24.71	3.01	277.30	-8.81	.073	Sig
TES_II	100.7	11.07	266.48	104.8	11.41	278.52	-7.89	.001	Sig
TES_III	63.2	6.68	271.69	63.5	6.34	273.31	-.120	.905	NS
TES_IV	28.0	3.77	276.64	30.8	3.77	268.36	-5.61	.038	Sig
TES_V	7.1	1.58	267.74	7.5	1.44	277.26	-6.72	.011	Sig
TES_VI	55.2	6.08	270.09	57.6	6.32	274.91	-7.35	.020	Sig
TES_TOTAL	269.0	27.89	268.53	279.9	28.57	276.47	-8.58	.006	Sig

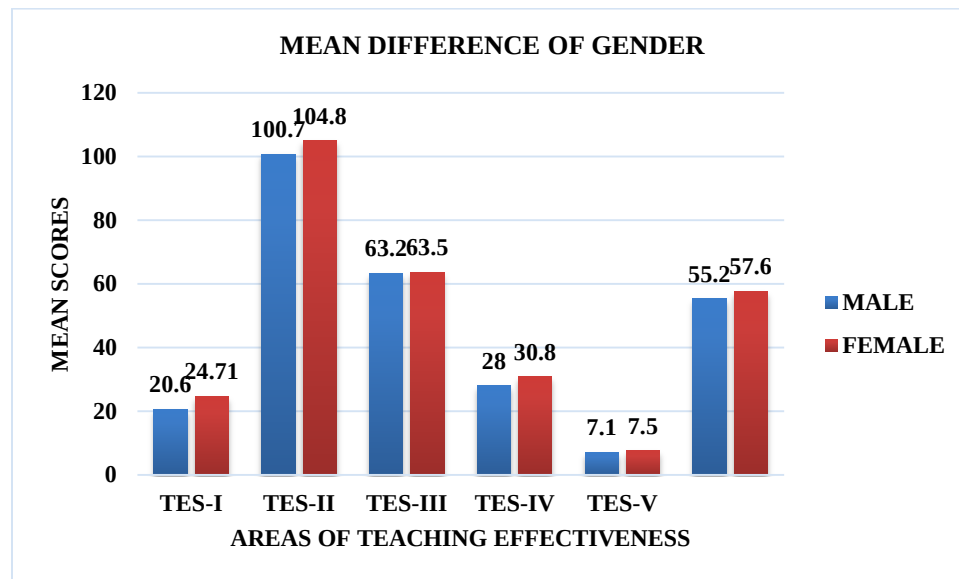


Figure (1) Graphical representation of male and female of the participants

Data from Table (1) show the 'Z' value at $P < 0.05$, the result indicates that there is a statically significant difference between male and female on different areas of teaching effectiveness of college teachers. Female teachers have a high level of teaching effectiveness than their male counterparts. It may be because female teachers are accountable to cooperative classroom teaching, well acquainted with the teaching objectives, and above all, they are provided equal opportunities for proper development with real-life situations in comparison to male teachers. So, the **hypothesis (1)** is rejected. This finding is also in conformity with the earlier studies conducted by Pachaiyappan and Raj (2014), Chowdhury (2014) which stated gender had influenced the potency of teachers and also indicating that female teachers were comparatively more effective.

Objective No (2) To study the teaching effectiveness of rural and urban college teachers.

Hypothesis (2) There will be no significant difference of locality (rural/urban) on teaching effectiveness of college teachers.

Table No (2) Comparison between Rural and Urban

TES dimensions	Rural			Urban			Z	Sig (2-tailed)
	Mean	SD	Mean Rank	Mean	SD	Mean Rank		
TES_I	20.0	2.56	230.04	21.3	2.55	314.96	-6.338	.000
TES_II	97.7	9.69	221.32	104.9	11.53	323.68	-7.600	.000
TES_III	61.3	6.19	221.04	65.5	6.15	323.96	-7.645	.000
TES_IV	27.7	3.75	226.06	30.0	3.45	318.94	-6.915	.000
TES_V	7.0	1.42	228.56	7.8	1.49	316.44	-6.643	.000
TES_VI	55.0	5.17	210.17	59.8	6.23	334.83	-9.267	.000
TES_TOTAL	268.7	24.45	212.01	289.3	28.01	332.99	-8.977	.000

Table (2) shows a highly significant difference in teaching effectiveness between rural and urban college teachers. That is because the rural college teachers may have a lack of adequate classroom environment, teacher's involvement, interpersonal relationships, student's responses, and difficulty in using proper teaching methods which affect the effectiveness of teachers. It means that the locality of college has a significant influence on Teaching Effectiveness. Therefore, the **hypothesis (2)** is rejected. Pachaiyappan and Raj (2014) indicated similar results where Secondary and Higher Secondary School teachers from urban areas hold an upper hand as compared to those of rural areas.

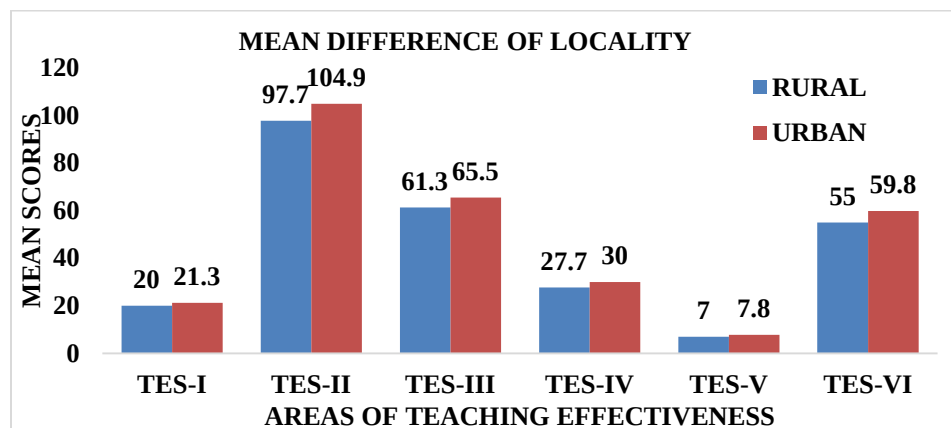


Figure2: Graphical representation of rural and urban participants

Objective No (3) To study the attitude towards ICT of male and female college teachers.

Hypothesis (3) There will be no significant influence of gender (male/female) on attitude towards ICT of college teachers.

Table No (3) Comparison between Male and Female

Sl. No	Areas	Male			Female			“Z”	P
		Mean	SD	Mean Rank	Mean	SD	Mean Rank		

1	Productivity of teaching	23.8	3.82	257.30	24.2	4.12	287.70	-2.265	.024
2	Usefulness for students	24.6	3.06	276.69	24.4	3.62	268.31	-.628	.530
3	Teachers interest and acceptance	29.9	3.61	275.17	29.5	4.35	269.83	-.398	.691
	Total	78.3	7.92	264.71	78.1	9.63	280.29	-1.157	.247

From the above **Table (3)** total 'Z' score it indicated non- significant difference between male and female college teachers concerning attitude towards ICT. The majority of the respondents revealed that they frequently use ICT for the purpose like keeping track of student's performance, accessing information and educational materials, preparing a lesson plan, doing presentations relevant to topics to make lessons more motivating for the learner. So, **hypothesis (3)** is accepted. The above results supported by Olafare et al. (2017) who found no significant gender influence in the lecturer's attitude toward the use of ICT in Nigeria. Nagamani & Muthuswamy (2013) also evaluated that the utilization of ICT is not affected by gender in secondary school teachers.

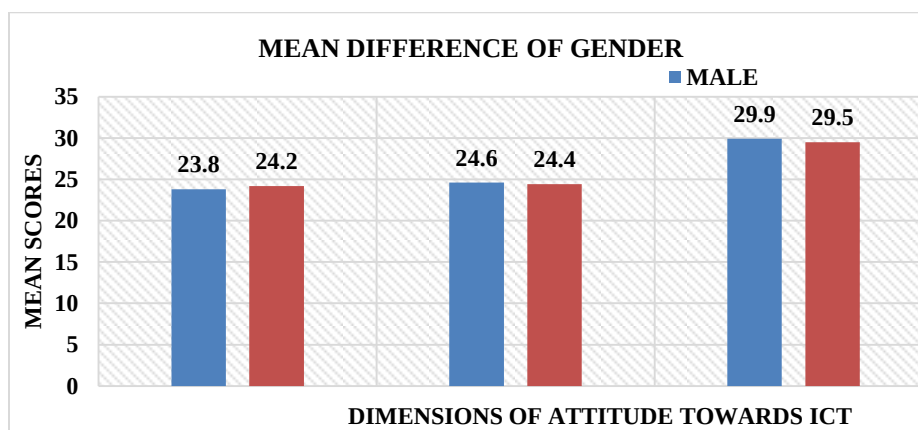


Figure (3) Graphical representation of male and female participants

Objective No (4) To study the attitude towards ICT of rural and urban college teachers.

Hypothesis (4) There will be no significant influence of location (rural/urban) on attitude towards ICT of college teachers.

Table No (4) Comparison between rural and urban

Sl. No	Dimensions	Rural			Urban			"z"	P
		Mean	SD	Mean Rank	Mean	SD	Mean Rank		
1	Productivity of teaching	23.5	3.67	290.89	25.5	4.21	254.11	-4.739	.003

2	Usefulness for students	22.4	2.20	267.76	23.6	3.48	267.24	-3.710	.004
3	Teachers interest and acceptance	27.7	4.04	269.63	29.7	3.06	255.37	-4.428	.000
	Total	77.8	8.48	276.85	80.6	9.13	268.15	-5.646	.007

The above **table (4)** also confirmed that overall rural and urban teachers have a significant difference in their opinion towards ICT awareness. They also supported that knowledge of information technology can motivate teachers to improve professional advancements and Information technology can provide relevant technological information for students. Furthermore, irregular and interrupted power supply (Kumar & Kumara, 2018), slow bandwidth, slower internet speeds, lack of ready access to technology may also happen to be major deterrents in the adoption of technology in developing areas. As the results indicate a statistically significant difference in the total attitude towards ICT based on locality. So, the **hypothesis (4)**, is rejected. The result is in line with the study of Ganesan & Krishnakumar (2016) who postulates the location of secondary school found statistically significant in the use of ICT.

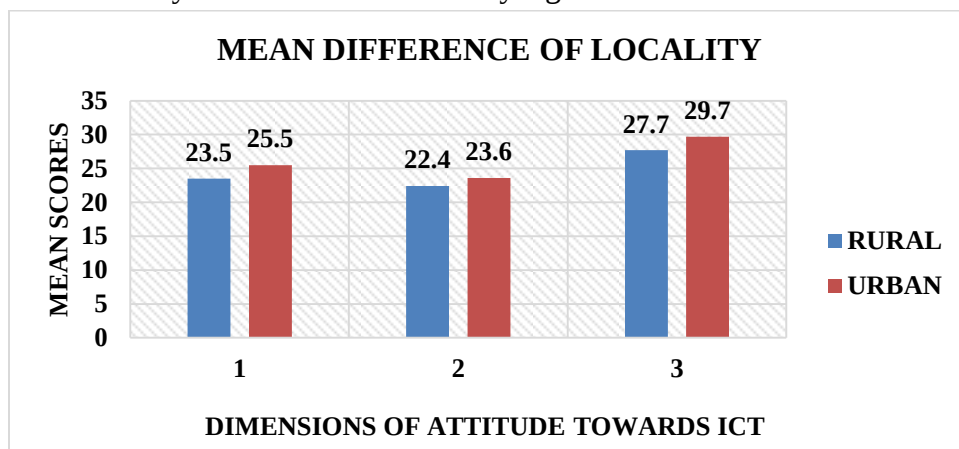


Figure (4) Graphical representation of rural and urban participants

Objective No (5) To investigate the relationship between teaching effectiveness of college teachers and their attitude towards ICT.

Hypothesis (5): There will be no significant relationship between teaching effectiveness of college teachers and their attitude towards ICT.

Table (5) PEARSON CORRELATIONS

AREAS	Productivity of teaching	Usefulness for students	Teachers interest and acceptance	Total attitude
Academic & professional knowledge	.073	.053	.013	.059
Preparation & presentation of lesson plan, classroom management	.098*	.115**	.090*	.129**
Attitude towards students, parents,	.107*	.096*	.108*	.134**

colleagues, head of institution				
Use of motivation reward, punishment & interest in all round development of students	.119**	.098*	.054	.116**
Result, feedback accountability	.101*	.128**	.090*	.135**
Personal qualities	.106*	.093*	.108*	.132**
TES-Total	.115**	.113**	.098*	.140**

**Correlation is significant at the 0.01 level (2-tailed).

The result manifests a significant positive relationship between six dimensions of teaching effectiveness of college teachers and their attitude towards ICT. It means that attitude towards information technology has a significant role to play in deciding the teaching effectiveness of college teachers. They believe that information technology improves the quality of teaching and also provides knowledge and application package for teaching in the classroom. Most of the teachers believe in the educational values of information technology. From the response sheet, it is also found that most of the college teachers can apply technology in classes which preferably improve the professional advancement and development of lecturers.

The result manifests a significant positive relationship between teaching effectiveness of college teachers and their attitude towards ICT. So, the **hypothesis (5)** is rejected. Rajeswari & Sree (2017), Ruth Oluwatosin Adeyemo, Emmanuel Olusola Adu and Olusesan Adeyemi Adelabu (2015) stated in the study that the application of technology as an instrument of effective teaching and learning.

MAJOR FINDINGS OF THE STUDY:

- A significant difference exists between male and female college teachers on teaching effectiveness. Female college teacher's effectiveness is higher than the male colleagues.
- A significant difference exists between rural and urban college teachers on teaching effectiveness. Urban college teachers shows higher level in their effectiveness.
- There is no statistically significant difference between male and female attitudes towards ICT of college teachers.
- There is a statistically significant difference in the location on attitude towards ICT of college teachers. Rural college teachers have their lower level of attitude towards ICT.
- There is a significant positive correlation between teaching effectiveness and attitude towards the ICT of college teachers.

CONCLUSIONS: An effective teacher significantly contributes to the success of the educational endeavor. For qualitative improvement in education such as the development of curriculum, textbooks, teaching aids, learner's better participation, cooperative nature and other sides of the organization the efforts of information technology cannot be ignored. It has been realized that the teacher is acts as a role model of any organization; so, if the teacher not having an optimistic outlook towards the adaptation of information technology all efforts are presented as meaningless. The present study reveals certain other aspects of teacher effectiveness. Organization of seminars and workshops, participation in refresher courses is essential to enhance the effectiveness of college teachers. In-service and pre-service training has also a positive impact on teaching. The assumption of the present research has pulled the attention of experts towards the teacher educators of rural areas. Better facilities should be provided to rural colleges also so that teachers may feel more satisfied and can work with more dedication. The findings of the study will help to create a conducive environment for teaching which will lead to the high effectiveness of college teachers. The comparison of mean scores of both rural and urban areas teachers are showing a huge difference. Special training programs on ICT should be organized for college teachers. The regulatory bodies should monitor the implantation of ICT in the teacher education curriculum at all levels. All universities should take the initiative of ICT studies for innovative technological and pedagogical perspectives.

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