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A study on attitude of secondary school teachers' towards information and communication technology (ICT)

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Abstract
Technology revolutionized many domains of life and also the education *system*. Learning outcomes are now being influenced by the rapid growth of Information and Communication Technology (ICT) and it has impact on enhancement of teaching delivery and students' greater understanding of learning concepts. The current study investigated teachers' attitude towards the use of Information and Communication Technology (ICT) among secondary schools in Khallikote Block in Ganjam District of Odisha. A descriptive cum survey method was adopted. The sample consists of a sample of 126 teachers (64 male and 62 female) randomly drawn from ten (10) secondary schools. Collected data was subjected to statistical analysis. The findings revealed that teachers are comfortable and skilled in the use of ICT teachers showed positive attitude towards the use of ICT for quality instructional delivery. Attitude of teachers towards the use of ICT for quality instructional delivery did not differ significantly on the basis of gender, age, stream, areas of school (rural or urban).

Keywords: Information and communication technology, secondary school teachers, attitude

Introduction

Technology revolutionized many domains of life and also the education system. Educational institutes under the influence of technology are supposed to prepare their students to be technology literate (Kalanada, 2005). Information and Communication Technology (ICT) is obviously of great significance for education. Ntongieh (2016) [17] defined ICT as any product which will store, retrieve, manipulate, transmit or receive information electronically in a digital form. Development in ICT has become a crucial factor to cater the demand of changing education system (Chao, 2015) [7].

ICT helps in strengthening the quality of education to make teaching-learning an active process that is connected to real life situation. The use of ICT in education not only improves the learning process but also changes the content of education, institutional infrastructure and the pattern of education system. ICT is a tool that supports the learning process and holds the promise to new solutions for the challenges that education is facing today (Oduma & Ile, 2014) [18].

The pace of technological revolution and emergence of a knowledge society changed the traditional role of the teacher. Integrating technology into teaching-learning transaction has been found to transform the teacher's and student's role where teacher is a 'Guide,' and students are active participants and partners in the learning process.

Teachers' attitude to the use of ICT in teaching and learning process can be a determinant factor to their level of enthusiasm to the use of ICT tools. In the views of Albirini (2006) [2]; Al-zaidiyeen, Mei and Fook (2010) [3], a teacher who possesses positive attitudes towards ICT tools is more motivated to integrate it into his or her teaching practices and as well come up with a prodigious outcome. Motivated teachers having positive attitude towards the use of ICT is persuaded by the combination of different factors. Teachers are required to have knowledge of information and communication technology only then they can overcome their difficulties by using appropriate method and can be capable to give proper guidance to their students for using ICT.

Statement of the problem

"A study on Attitude of Secondary School Teachers' towards Information and Communication Technology (ICT)"

Objectives of the study

The study was taken up with the following objectives:

- To compare the attitude of secondary male and female teachers towards information and communication technology.
- To compare the attitude of Arts and Science teachers of secondary schools towards information and communication Technology.
- To compare the attitude of more experience (46-55 years of age) and less experience (25-45 years of age) School Teachers towards information and communication Technology.
- To compare the attitude of Urban and Rural School Teachers towards information and communication Technology

Hypothesis of the study

1. There is no significant difference in the attitude of male and female teachers of secondary schools towards information and communication technology.
2. There is no significant difference in the attitude of Arts and Science teachers of secondary schools towards information and communication technology.
3. 3. There is no significant difference in the attitude of more experienced (46- 55 years of age) and less experienced (25-45 years of age) teachers of secondary schools towards information and communication technology.
4. There is no significant difference in the attitude of Urban and Rural teachers of secondary schools towards information and communication technology.

Sample of study

The design of the study was descriptive survey. The area of the study was Khallikote Block in Ganjam District of Odisha. All the 126 teachers are from the 10 government secondary schools in Khallikote Block in Ganjam District of Odisha. Constituted the population of the study. A total number of 126 teachers (64 males and 62 females) were randomly selected from 10 secondary schools and used for the study.

Tools of the study

Attitude Scale towards Information Technology for Teachers developed by Nasrin and Fatima Islahi (2011) [15] was used to collect the required data. The scale has 30 statements based on 5-point scale. There are 18 positive and 12 negative statements. The questionnaire is given to the randomly selected teachers teaching at senior secondary schools. Importance and significance of the present study is clearly stated to the respondents.

Collection & analysis of data

Data obtained from them are organized and analyzed statistically to interpret the result significantly. The statistical technique like mean, standard deviation, t-test and percentage are used to analyze and interpret the data.

Table 1: Comparison of mean scores for attitude of Secondary School Teachers towards Information and Communication Technology (ICT)

Variables	Category	N	Mean	SD	t-Value	Significance at 0.05 level
Gender	Male	64	102.4	8.43	1.038	No significant difference at 0.05 level
	Female	62	104.6	9.64		
Stream	Science	55	116.2	14.24	1.024	No significant difference at 0.05 level
	Arts	71	113.6	13.28		
Experience	Less	81	98.5	12.63	0.964	No significant difference at 0.05 level
	More	45	97.2	13.80		
Location	Rural	69	107.8	12.53	1.112	No significant difference at 0.05 level
	Urban	57	156.65	14.34		

Statistical analysis and interpretation

Hypothesis 1: There is no significant difference in the attitude of male and female teachers of secondary schools towards information and communication technology.

Table 1 compares the attitude of female and male teachers at the secondary school towards Information and communication technology. The calculated t-value 1.038 is less than table value (1.98 at 0.05 level of significance). The outcome indicates that there is no significant difference between female and male secondary school teacher's attitude towards Information and Communication Technology. Hence the null hypothesis of research is accepted. Therefore, it can be said that there is no significant difference in the attitude of total male and female teachers in secondary level male and female teachers, towards information and communication technology. Both acknowledge usefulness of ICT.

Hypothesis 2: There is no significant difference in the attitude of Arts and Science teachers of secondary schools towards information and communication technology.

Table 1 compares the attitude of Science and arts teachers at the secondary school towards Information and communication technology. The calculated t-value 1.024 is less than table value (1.98 at 0.05 level of significance). The outcome indicates that attitude of secondary school teachers basing on stream towards Information and Communication Technology is not significant. Hence the null hypothesis of research is accepted.

Hypothesis 3: There is no significant difference in the attitude of more experienced (46- 60 years of age) and less experienced (25-45 years of age) teachers of secondary schools towards information and communication technology.

Table 1 compares the attitude of more experienced and less experienced teachers at the secondary school towards Information and Communication technology. The calculated t-value 0.964 is less than table value (1.98 at 0.05 level of significance). The outcome indicates that there exists no significant difference in the attitude of secondary school teachers basing on age towards Information and Communication Technology. Hence the null hypothesis of research is accepted.

Hypothesis 4: There is no significant difference in the attitude of Urban and Rural teachers of secondary schools towards information and communication technology.

Table 1 compares the attitude of urban and rural teachers at the secondary school towards Information and communication technology. The calculated t-value 1.112 is less than table value (1.98 at 0.05 level of significance). The outcome indicates that there is no significant difference between urban and rural secondary school teacher's attitude towards Information and Communication Technology. Hence the null hypothesis of research is accepted. Both acknowledge usefulness of ICT.

Findings of the study

The findings of the present study are as follow:

1. No significant difference has been found in the attitude of secondary school teachers on gender basis towards information and communication technology.
2. No significant difference has been found in the attitude of science and art teachers towards ICT. Both the teachers of science and art consider the use of information and communication in their respective subjects necessary.
3. No significant difference has been found in the attitude of more experienced (46-60 years) and less experienced (25-45 years) teachers towards the use of ICT.
4. No significant difference has been found in the attitude of urban and rural secondary school teachers towards ICT. The teachers of the urban and rural school both are considered its utility and its influence in teaching work.

Discussion

Major findings and analysis of the collected data revealed that the findings of the present study supported the findings of different research conducted in different parts of the country and the world, which reveals that the teachers show positive attitude towards the use of ICT in education, and no significant difference among of attitude of teachers in relation to their gender, stream, age, locality (Cavas et. al, 2009; Kaur, 2012; Ndibelema, 2014; Dixit and Kaur, 2015; Lydiah et. al, 2015; Ganeshan, 2016; Aydin et. al, 2016; Agrawal & Ahuja, 2018; Beri & Sharma, 2019) [1, 4, 5, 6, 9, 13]. Habib (2018) looked at the effectiveness of senior secondary school teachers in terms of their attitudes toward technology and Teacher effectiveness among senior secondary school teachers is unaffected by gender. But some of the studies contradict to the findings of the present study. Findings of Egbert, Paulus and Nakamichi (2002) [10] stated that teachers' gender had significant effect on their attitude towards the use of ICTs for quality instructional delivery. Parveen (2016) investigated secondary school teachers' attitudes toward the use of technology in the classroom. His findings showed that attitudes toward the use of technology in the classroom differ significantly between rural and urban teachers, as well as between science and humanities teachers.

Implications of the study

This study provides a framework for awareness and a better understanding for finding teachers' current attitudes towards information and communication technologies. It reveals that the attitude of teachers about the use of ICTs in teaching-learning process is positive, ICT in education is the need of the hour. ICT courses must be integrated directly into the curriculum at the school level to enhance computer literacy and competency in the ICT field. Computer literacy classes in public libraries can also be used as a means to promote and disseminate information about ICT. The use of a variety of technological devices in the classroom should be encouraged to facilitate teaching and speed up learning.

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