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Attitude of Secondary School Teachers towards Inclusion of ICT Materials in Teaching Learning Process of Mayurbhanj District, Odisha: An Analytical Study

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Abstract: ***The prime objectives of the research work are to find the attitude of secondary school teachers towards inclusion of ICT materials in teaching learning process. The study was conducted on 120 secondary school teachers of Mayurbhanj district, Odisha, India. The researcher adopted the descriptive survey research design to explore the attitude of secondary level teachers towards inclusion of ICT materials in their classroom transactions. For the collection of sample, simple random sampling technique was used. The findings of the study revealed that there is no significant difference between male and female, Govt. and Private secondary school teachers' attitude towards inclusion of ICT in the teaching learning process. Also, there is a significant difference between rural and urban secondary school teachers' attitude towards inclusion of ICT in the teaching learning process. Further, the use of ICT materials in the classroom transaction improves retention ability, spatial ability, critical thinking and analytical reasoning of the learner. In addition to this, educational implications and recommendations were given on the basis of obtained findings of the study.***

Keywords: Attitude, Secondary School Teachers, Inclusion, ICT Materials, Teaching Learning Process

1. Introduction

Information Communication Technology (ICT) has become an integral and indispensible part of the most educational institutions all over the world after outbreak of the pandemic Covid - 19 and whole system education shifts from offline to online mode. ICT not only provides productive teaching and learning experience in order to increase learner's creative and intellectual resources but also enable them to become an efficient one especially in today's information society. The process of teaching learning become more effective, engagazing and captivate by the inclusion of ICT materials. ICT materials and other supportive study materials act as a medium between the teacher and the learner for delivering instructions in the classroom situation in an effective and efficient manner. ICT materials serve as a motivator for the students in the teaching - learning process. ICT materials are not only beneficial for teachers to share resources, expertise and advice but also assist to plan and prepare lessons and design materials for students. An ICT material helps teachers to update, enhance and modify their both pedagogical skills and professional ethics. The levels of interaction, the immediacy and the ability to refresh work, were all indicated as ways in which ICT materials could enhance the range of teaching approaches in the school. ICT materials provide assistance for both teacher and students to oblige teaching learning process an effective and successful by achieving the educational aims and objectives. ICT materials and its usefulness on student's teaching leaning process continue to attract the attention of the researches because of their association with students learning and academic achievement.

2. Literature Review

Mathmo (2010) [14] conducted a study on the use of educational technology in teaching and learning and found that there are no plans on the use of educational technology tools in teaching and learning, inadequate educators training on the use of educational technology in teaching and learning and lack of relevant educational technology tools for rural schools. Further, Sanmamed & Sangra (2010) [19] revealed that the contribution of ICT to the improvement of teaching and learning processes is higher in the schools that have integrated ICT as an innovation factor and to attain this highest level a school not only has to modernize the technological tools, but also has to change the teaching models: the teacher's role, issues regarding classroom organizational, the teaching and learning processes, and the interaction mechanisms. Yusuf & Behlol (2011) [21] conducted a study on the effectiveness of information and communication technology in teaching in secondary level and obtained that ICT was effective as compared to traditional method of teaching at secondary level for private sector schools. The major challenges faced by teacher, they are expected to development their technological, skills and knowledge as well as use ICT in teaching (Sheila, 2012) [20]. A study by Mogire (2013) [15] revealed that there was minimal use of computers in teaching and learning due to lack of software, fewer computers for schools, lack of computers skills by teachers and students power black outs and in adequate computer laboratory space to accommodate students. Ndibalema (2014) [16] obtained that the use of ICT as a pedagogical tool in Tanzania seems to be a critical situation among teachers and recommended further in - depth investigation on teachers' willingness, confidence, motivation, feeling, thinking, belief and the actual practice through classroom observations including larger samples. Fanai & Chhangte (2016) [10] conducted a study on attitude

of the Secondary School Teachers towards ICT with respect to teaching experience and found that the teachers have positive attitude towards ICT and also that there is no significant difference between junior and intermediate teachers, intermediate and senior teachers and junior and senior teachers. Mansuri (2017) [13] revealed that there is a significant difference in the attitude of SSC and ICSE teachers towards information technology and also there is a significant difference in the attitude of female and male teachers from SSC and ICSE boards.

3. Rationale of the Study

ICT materials are utilized for demonstration, illustration, explanation and elaboration of subject matter in the classroom which is synonymous with taking the learners to parts of the world they could experience the learning in the classroom situation by the assistance of teacher or special expertise. Pupil retains information for a long period of time if they taught through ICT materials in the classroom transaction. Now - a - days, youth are engaging themselves in developing knowledge and identity, struggling for autonomy is being reconfigured through their procurement with modern ICT materials. ICT materials and are rapidly becoming indispensable components of our personal lives, industry, and society, energy consumption and generation, climate and environmental change, affordable healthcare, efficient transportation, and the inclusive society. ICT material acts teaching aids which dispense direct experience to the students in the classroom situation. ICT materials make tremendous and extraordinary effect on the lesson if intelligently used by the teacher in the teaching learning process. In the last decade, research works on the effects of ICT materials on academic achievements of students has become area of interest for the researchers. The purpose of this study is to find out the attitude of secondary level teachers towards inclusion of ICT materials in the curriculum transaction with respect to academic achievements of learners. Hence, the investigator has undertaken to study this topic. It is expected that the findings would be utilized by scholars, teachers, teacher educators, students, researchers and educationists in future.

4. Objectives of the Study

The objectives of the research work are:
O1. To find out difference between male and female secondary school teacher's attitude towards inclusion of ICT in teaching and learning process.
O2. To reveal difference between Govt. and Private secondary school teacher's attitude towards inclusion of ICT in teaching and learning process.
O3. To find out difference between rural and urban secondary school teacher's attitude towards inclusion of ICT in teaching and learning process.

5. Hypotheses of the study

The hypotheses of the research work are:
H1. There exists no significant difference between male and female secondary school teacher's attitude towards inclusion of ICT in teaching and learning process.
H2. There exists no significant difference between Govt. and Private secondary school teacher's attitude towards inclusion of ICT in teaching and learning process.
H3. There exists a significant difference between rural and urban secondary school teacher's attitude towards inclusion of ICT in teaching and learning process.

6. Delimitation of the study

The population of the study delimited to secondary school teachers only. The study delimited to 120 secondary school teachers as sample. The present study has been confined to the teachers' of different Govt. and Private secondary schools of Mayurbhanj district, Odisha, India. The study is delimited in one variable i. e. attitude.

7. Methodology

Taking into consideration the nature of study the investigator adopted the descriptive survey research design to explore the attitude of secondary level teachers towards integration of ICT in teaching and learning process. In the present study, the population constituted out of secondary school teachers of Mayurbhanj district, Odisha, India. For the collection of sample for the study simple random sampling technique was used. For the present study a total number of 120 secondary school teachers were selected as sample by aforementioned sampling technique.

Tools and techniques
Tools and techniques are key components of research work as they play significant role in collection, analysis and interpretation of data. The investigator prepared a self - made attitude scale towards ICT of secondary school teacher's in the teaching learning process for collection of data. The tool consisted of 40 items. The investigator developed 5 points rating scale as Strongly Agree, Agree, Undecided, Disagree, and Strongly Disagree. Reliability of the scale is calculated by Test Re - test method and found to be 0.72 which is very high and reliable. The content of the tool were checked by the language and subject expert to find out the content validity of the tools.

8. Analysis and Interpretation

It is inferred from table - 1 that mean scores of male and female secondary school teacher's attitude towards inclusion of ICT are 24.09 and 25.37 with standard deviations 6.32 and 5.04 respectively. The calculated **t** - value came out to be 1.23 which is less than standard table value at both levels of significance. This indicates there is no significant difference between male and female secondary school teachers attitude towards inclusion of ICT in the teaching learning process. Further, the mean scores of male secondary school teachers towards inclusion of ICT is less than the female secondary school teachers. Hence, it implies that female secondary school teachers have more attitudes towards inclusion of ICT in the classroom transaction than the male secondary school teachers.

Table 1: Significant of difference between male and female secondary school teachers attitude towards inclusion of ICT in the teaching learning process

Variable	Group	No. of Samples (N)	Mean (M)	SD	SED	t - ratio	Level of Significance
Attitude towards ICT	Male Secondary School Teacher	60	24.09	6..32	1.04	1.23	Not Significant
	Female Secondary School Teacher	60	25.37	5.04			

(Degree of freedom =118, at 0.05 level = 1.96, at 0.01 level = 2.58)

The mean and Standard Deviation (SD) scores of male and female secondary school teacher's attitude towards inclusion of ICT in the teaching learning process are depicted in the above table is represented by the bar graph.

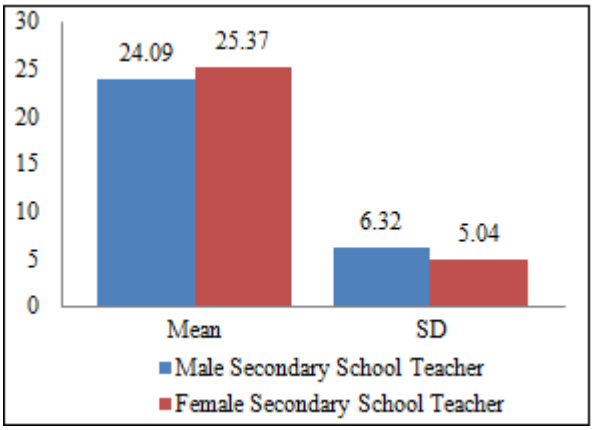

Figure 1: Scores of male and female secondary school teacher's attitude towards inclusion of ICT

It is revealed from table - 2 that mean scores of Govt. and Private secondary school teacher's attitude towards inclusion of ICT are 23.89 and 25.12 with standard deviations 6.28 and 5.36 respectively. The calculated **t** - value came out to be 1.16 which is less than standard table value at both levels of significance. This indicates there is no significant difference between Govt. and Private secondary school teacher's attitude towards inclusion of ICT in the teaching learning process. Further, the mean scores of Private secondary school teachers towards inclusion of ICT are more than the Govt. secondary school teachers. Hence, it implies that the Private secondary school teachers have more attitudes and consciousness towards inclusion of ICT in the classroom transaction than the Govt. secondary school teachers.

Table 2: Significant of difference between Govt. and Private secondary school teacher's attitude towards inclusion of ICT in the teaching learning process

Variable	Group	No. of Samples (N)	Mean (M)	SD	SED	t - ratio	Level of Significance
Attitude towards ICT	Govt. Secondary School Teacher	60	23.89	6..28	1.06	1.16	Not Significant
	Private Secondary School Teacher	60	25.12	5.36			

The mean and Standard Deviation (SD) scores of Govt. and Private secondary school teacher's attitude towards inclusion of ICT in the teaching learning process are depicted in the above table is represented by the bar graph.

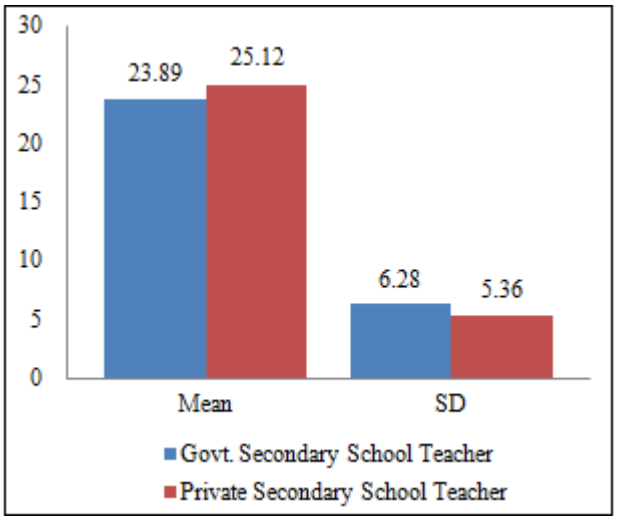

Figure 2: Scores of Govt. and Private secondary school teacher's attitude towards inclusion of ICT

It is obtained from table - 3 that mean scores of rural and urban secondary school teacher's attitude towards inclusion of ICT are 25.16 and 28.74 with standard deviations 7.46 and 3.02 respectively. The calculated **t** - value came out to be 2.95 which is much more than standard table value at both levels of significance. This indicates there is a significant difference between rural and urban secondary school teacher's attitude towards inclusion of ICT in the teaching learning process. Further, the mean scores of rural secondary school teachers towards inclusion of ICT are less than the urban secondary school teachers. Hence, it implies that urban secondary school teachers have more attitudes and consciousness towards inclusion of ICT in the classroom transaction than the rural secondary school teachers.

Table 3: Significant of difference between rural and urban secondary school teacher's attitude towards inclusion of ICT in the teaching learning process

Variable	Group	No. of Samples (N)	Mean (M)	SD	SED	t - ratio	Level of Significance
Attitude towards ICT	Rural Secondary School Teacher	40	25.16	7.46	1.21	2.95	Significant at both level i. e.0.05 and 0.01
	Urban Secondary School Teacher	80	28.74	3.02			

The mean and Standard Deviation (SD) scores of rural and urban secondary school teacher's attitude towards inclusion of ICT in the teaching learning process are depicted in the above table is represented by the bar graph.

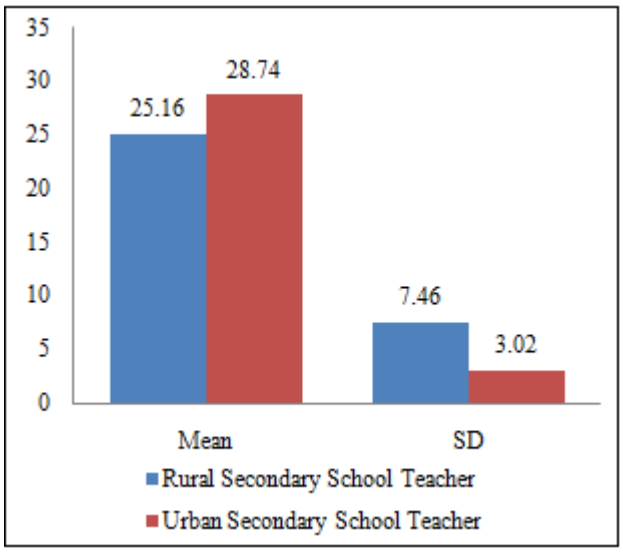

Figure 3: Scores of rural and urban secondary school teacher's attitude towards inclusion of ICT)

9. Findings and Educational Implications

Every study provides some meaningful information and knowledge to the related field and this study also has some systematic, organized and meaningful information. There is no significance difference between male and female secondary school teachers attitude towards inclusion of ICT in the teaching learning process. There is no significance difference between Govt. and Private secondary school teachers' attitude towards inclusion of ICT in the teaching learning process. Further, there exists a significant difference between rural and urban secondary school teacher's attitude towards inclusion of ICT in the teaching learning process. Hence, it implies that the Private secondary school teachers have more attitudes and consciousness towards inclusion of ICT in the classroom transaction than the Govt. secondary school teachers.

There are several educational implications of the study such as:

1) Secondary school teachers are curious towards ICT and their uses in the curriculum transaction;
2) Teacher should present content matter to learners by the help of ICT materials and other supportive study materials which focused on concepts, theories, ideas and events that are purposeful and applicable in teaching - learning process among secondary learners;
3) Learner should provided scope for utilization and smooth functioning of ICT in the classroom teaching and learning situation.

10. Recommendations

The recommendations of the research work are:

1) In this study, the investigator conducted a descriptive survey research on secondary school teacher's attitude towards inclusion of ICT in the teaching learning process; it is advised to conduct research on other areas like usefulness of ICT on administration, management, etc.
2) In this study, the sample was delimited to Mayurbhanj district only; it is advised to explore the sample in other districts of Odisha as well as other states of India.
3) It is suggested that the alike type of research work may be administered on pre - primary, primary, upper - primary and higher secondary school teachers also.
4) The study can be conducted at college and university level to know the attitude of teachers towards ICT.

11. Conclusion

Based on the results of research work it was concluded that both female and male secondary teachers have positive attitude towards inclusion ICT materials in the teaching learning process. Similarly, both Govt. and Private secondary school teacher have no significant difference in their attitudes towards inclusion of ICT materials in the classroom. But, there is a significant difference between the localities as a factor of the role of ICT in professional and educational development of secondary teachers. An ICT material is a crucial tool for promoting equity and educational opportunity to secondary level students in the teaching - learning. An ICT material not only helps the teacher to present the lesson plans in an effective manner but also improves both critical thinking of the learner. Therefore, teacher training and optimum technological conditions are necessary for developing good educational practices in inclusive classrooms. ICT material stimulates learner for acquiring knowledge, enhances an individual to work co - operatively and helps to update with new pedagogical skills.

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