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Access on Knowledge and Awareness of Smart Classroom Teaching among Secondary School Teachers: An Explanatory Study

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ABSTRACT

The present study is an analysis of knowledge and awareness of secondary school teachers on Smart Classroom teaching of Kandhamal and Nayagarh districts of Odisha. This study investigated 200 teachers from both of the districts taking 100 from each by stratified random sampling technique. The aim of the study were (a) to examine knowledge and awareness of smart classroom teaching among teachers at the secondary school level of Nayagarh and Kandhaml district and (b) to compare the difference of knowledge and awareness of secondary school teachers on Smart Classroom teaching of the both districts of Nayagarh and Kandhamal in Odisha in terms of gender,location and training on Smart Classroom teaching received by the teachers.. For conducting such a study the investigator has used Mean, SD and t-test formulae for analysis the data with reference to location, gender and training on smart classroom teaching. The findings showed that knowledge and awareness on Smart Classroom teaching in terms of gender and location did not differ, but the trained (Training on smart classroom teaching) teachers of both the districts were more aware and knowledgeable on Smart Classroom Teaching than the untrained teachers. Therefore, there was no difference between the secondary school teachers of Nayagarh and Kandhamal districts in terms of the gender and locations. But as a whole the teachers from both of the districts, there was a difference between the trained and untrained teachers on knowledge and awareness on Smart Classroom teaching.

Keywords: Smart Classroom Teaching, Secondary School Teachers, Knowledge & Awareness.

1. INTRODUCTION

In the 21st century, the concept of smart classroom is not a new as it is widely used in every sphere of education system. No doubly technology is playing a great role in changing our daily life style by presenting the utmost and superficial facilities to our doorstep. On the contrary technology has a good impact also in the educational process by adopting various tricks and strategies with the help of ICT like modern

approaches .With the use of ICT and classroom technology, it transforms the process of teaching and learning to a different era reaching out to a numbers of educational institutions of different levels from elementary to University and higher level of education system. By using this approach, the teacher as a facilitator delivers the classes with an innovative and creative way through various two-three dimensional pictures, videos etc. with the help of computer and web based technology. It is that advancement of technological aspect of education, which integrates with computer, internet, and web based devices, audio visual, projector like devices which helps the teacher to explain, elaborate and teach the lesson to the pupil with utmost care and innovative way. Besides that now a days the classroom are more crowded with bound less and hectic syllabus. On the contrary, the students are assigned to grasp more knowledge with in a specific time period. Realizing this hard task the adaptation of such smart classroom technology is a mile stone in education sector today.

The introduction of smart classroom teaching in the modern education system is relatively not a new phenomenon. It is clear from every direction that smart classroom teaching is moving in a unique manner now days in educational institutions. It provides both teacher and pupil new opportunities in teaching learning process. Not only in implementation, but the teachers' awareness and interest on using the software, hardware approach along with modern tools and electronic devices plays a crucial role in proper implementation on smart class project and fulfillment of real goal of such project in the country.

2. Review of Literatures

Takawale and Kulkarni (2016) investigated on " Effectiveness of smart classroom over traditional classroom in terms of academic achievement of students using statistical method" The main objectives were to find out Academic performance in a smart classroom as compared to a traditional classroom of students. It was revealed that proper use of smart classroom technology followed by appropriate instruction helps academic achievement and better performance of the pupil.

Philomina and Amutha (2016) conducted a study on" Information and communication technology awareness among teacher educators" The primary goals of the study is based on their level of awareness among teacher educators in Tiruchirappalli district. The results show that there are differences in Indian teacher educators' awareness of ICT depending on gender and subject, according to the sample of 42 teacher educators used in this study. The M.Ed. ,M.phil., PhD. scholars performed better than in terms of ICT awareness in several Dimensions than the teacher educators. It is true that teacher educators in India need to increase their awareness of ICT integration.

Kalaiyarasan and Babu (2017) studied "Awareness on e-learning among B.Ed student-teachers". The researcher tries to identify the awareness on e-learning among the B.Ed trainee students in Pudukkottai and Karaikudi area with respect to gender, location and streams. The study reports 50 percent of teacher-students (B.Ed trainee) students of Pudukdottai and Karaikudi area are average level of awareness of e-learning. It was also revealed that more than fifty percent student-teachers (B.Ed trainee) have average level of awareness towards internet.

Gupta (2021) studied on "Students awareness towards e-learning: study from different markets". The main objectives of the study were to find out online learning awareness among post graduate students of science and arts stream of Erode district, Tamilnadu. The study revealed that gender plays no effect on online learning rather the hostellers have more awareness about online learning than day scholar students.

Abdekhoda et al. (2023) examined the effects of knowledge acquisition and knowledge sharing on the use of e-learning. The main objectives of the study were to evaluate the effect of knowledge acquisition and knowledge sharing on the use of e-learning by faculty members and teachers in Iran. The study revealed that the sharing and acquisition of knowledge through e-learning have a significant effect on the attitude of faculty members. Faculty members' behavioral intentions in regard to e-learning are influenced by their attitudes and subjective norms.

He investigated how information sharing and learning impact e-learning in his descriptive-analytical study. To analyze the data, the researchers developed a questionnaire whose elements were based on the Theory of Reasoned Action (TRA). The sample for the study was chosen using Morgan's Table, and the participants were professors. The final model was presented after analyzing the provided data with SPSS programme. The results demonstrated that faculty members' attitudes and subjective norms have a considerable and direct impact on how they use e-learning. Furthermore, several studies have shown that faculty members' subjective norms and attitudes affect their behavioral intention to use e-learning. It is clear that knowledge sharing and acquisition are important parts of user attitude and subjective norms and are among the influencing factors in the effective implementation of e-learning. According to other research, faculty members' behavioral intention to use e-learning is influenced by their attitude and subjective standards. It is clear that knowledge sharing and acquisition are important parts of user attitude and subjective norms and are among the influencing factors in the effective implementation of e-learning. More than 50% of the students and teachers in the Pudukkottai and Karaikudi area had an average degree of awareness of e-learning, according to the researchers that attempted to explore this topic in their study. The purpose of this study was to assess the level of e-learning literacy among students and teachers in the Pudukkottai and Karaikudi regions. Over 50% of the participants had an average level of e-learning awareness, it was found. The purpose of this study was to assess the level of e-learning literacy among students and teachers in the Pudukkottai and Karaikudi regions. Over 50% of the participants had an average level of e-learning awareness, it was found.

3. Objective of the Study

The objectives of the study were

1. To examine knowledge and awareness of smart classroom instruction among teachers at the secondary school level of Nayagarh and Kandhaml district.
2. To compare the difference of knowledge and awareness of secondary school teachers on smart classroom teaching of the both districts of Nayagarh and Kandhamal in Odisha with reference to gender, location and training .

4. Research Question

1. What is the level of knowledge and awareness among secondary school teachers in Nayagarh and Kandhamal district on smart classroom teaching ?
2. How do the levels of knowledge and awareness about smart classroom teaching differ between the two districts, Nayagarh and Kandhamal?

5. Hypotheses of the study

The researcher has formulated the following hypotheses as per the objectives of the study.

$H_{01:}$ There is no significant difference between Nayagarh and Kandhamal Secondary school teachers on Knowledge and awareness towards smart classroom teaching.

$H_{1:}$ There is a significant different between Nayagarh and Kandhamal Secondary School teachers on Knowledge and awareness towards smart classroom teaching with reference to gender, location and training .

6. Methodology

- **Method:** For the above study, the investigator has adopted descriptive cum survey method of educational research as the study based on existing phenomenon
- **Population:** The population consists of secondary school teachers of Nayagarh and Kandhaml district, where the smart classroom project is implemented. There are 92 in Nayagarh and 83 secondary schools in Kandhamal districts. Likewise the number of secondary school teachers in Nayagarh is 628 and Kandhaml district is 330 respectively.
- **Sample and sampling:** Here the investigator has collected data from 40 schools (20 secondary schools from each of the districts). In order to analyze the knowledge and awareness of the secondary school teachers from both of the districts, the investigator has selected 100 teachers from the each of the districts employing the stratified random sampling technique.
- **Tools used in the study:** For the study to measure the level of knowledge and awareness of the teachers, the investigator has used a self-developed knowledge and awareness scale containing 20 items to gather the responses of the teachers during collection of data.
- **Variables used in the study:**

A. Dependent variable

1. Knowledge and awareness

B. Independent variable

I. Smart classroom
II. Secondary school
III. Gender
IV. Location
V. Training

7. Analysis and interpretation of the data

To assess the level of knowledge and awareness of the secondary school teachers from the both districts, the investigator took the help of knowledge and awareness scale on smart classroom teaching. The data collected through the above scale were analyzed with applying inferential statistical technique for fulfilling the above objectives and purposes of the study. Mean, SD, t –test was carried out for analyze the collect data.

The knowledge and awareness scale was consists of 20 items on smart classroom teaching implemented in both districts. To examine and compare the knowledge and awareness of teachers at secondary level, the investigator collected the responses from 200 teachers (100 from each district) with special reference to gender, location and smart classroom training.

Table 1: Over all Mean, SD and t-value of Significance of knowledge and awareness on Smart Classroom teaching of Nayagrh and Kandhamal district:

Variables	Groups	N	Mean	SD	SE_D	df	't' Value	Remarks
Gender	Male	96	14.69	1.11	0.11	198	0.21	Not Significant
	Female	104	14.65	1.10	0.10			
Location	Rural	140	14.72	1.11	0.09		1.00	Not Significant
	Urban	60	14.55	1.08	0.13			
Training (Smart Classroom)	Trained	191	14.71	1.05	0.07		2.18	Significant at 0.05 Level
	Untrained	09	13.89	1.83	0.61			

(Table no-01)

Table- 01; It is analyzed that the male teachers have high awareness on smart classroom teaching as the mean score of the sample selected is 14.69 than the female teachers in the both of the districts. On the contrary the rural teachers have more awareness on smart classroom teaching than the urban teachers' as the mean value is14.72 more than urban areas. Further, it is shows that there exists a significant difference on knowledge and awareness of teachers towards smart classroom on the basis of training (Smart Classroom teaching) as the calculated 't' value is 2.18 higher than the critical value at 0.01 levels favouring trained teachers with a mean value of 14.71 among the teachers of the two districts. Except training variable, there is no significant difference on knowledge and awareness of teachers towards smart classroom. There is a no significant difference found between the male and female, urban and rural secondary school teachers of Kandhamal and Nayagarh district of Odisha. Hence the null hypothesis $H_{01:}$ There is no significant difference between Nayagarh and Kandhamal Secondary school teachers on Knowledge and awareness towards smart classroom teaching is accepted on gender and location variables as not significant .On the contrary the above null hypothesis is rejected with reference to training variable as significant at 0.05 level.

Table 2: District wise comparison on Mean, SD and t value on knowledge and awareness of the teachers of Nayagarh and Kandhamal districts towards smart classroom teaching:

Variables	Groups	District	N	Mean	SD	SE_D	df	't' Value	Remarks
Gender	Male	Nayagarh	45	14.62	1.13	0.16	94	0.53	Not Significant
		Kandhamal	51	14.75	1.11	0.15			
	Female	Nayagarh	55	14.53	1.19	0.16	102	1.24	Not Significant
		Kandhamal	49	14.79	0.97	0.13			
Location	Rural	Nayagarh	65	14.6	1.18	0.14	138	1.19	Not Significant
		Kandhamal	75	14.83	1.06	0.12			
	Urban	Nayagarh	35	14.51	1.14	0.19	58	0.30	Not Significant
		Kandhamal	25	14.6	1.00	0.20			
Training (Smart Classroom)	Trained	Nayagarh	91	14.64	1.06	0.11	189	0.86	Not Significant
		Kandhamal	100	14.77	1.04	0.10			
	Untrained	Nayagarh	09	13.89	1.83	0.61	NA	NA	Not Significant
		Kandhamal	00	00	00	00			

(Table no-2)

The table no-2 it is analyzed that there is no significant difference on knowledge and awareness of on smart classroom teaching among the male teachers of both the districts of Nayagarh and Kandhamal district as their computed 't' value is less than the critical value at 0.05 level of significant. On the contrary Kandhamal female teachers shows more awareness on smart classroom teaching with a mean value 14.79 ,which is greater than the mean value of 14.53 of female teachers of Nayagarh district. This research stated that there was no significant difference on knowledge and awareness of teachers of Nayagarh districts towards smart classroom teaching on the basis of gender, location and training variable as the calculated't' values were lower than the critical 't' values at 0.05 levels in each stage..Hence the hypothesis $H_{1:}$ There is a significant different between Nayagarh and Kandhamal Secondary School teachers on Knowledge and awareness towards smart classroom teaching with reference to gender, location and variable is rejected as not significant.

8. Results and Discussion

In this research, the researchers try to explore the awareness and knowledge on smart classroom of secondary school teachers. From the above data analysis, it was understood that under the objective of secondary school teachers in smart classroom, there are no differences in smart classroom teaching in terms of gender or location, but in terms of training, trained teachers are more competent and conscious of their classroom teaching in the both districts of Nayagarh and Kandhamal. Eleni et al. (2023) The integration of artificial intelligence into smart classrooms emerged in response to the rapid advancements in technology and the growing demand for more effective and innovative learning environments that can cater to both in-

person and remote educational activities. The researchers found that, teachers with Smart Classroom training are more aware than untrained teachers and on the basis of results the Shanmugam. (2013) said on her study trained teachers used their resources very comprehensively and smoothly in the classroom, as well as trained teachers present, discuss, compare and deconstruct different reading materials in a very easy way.

In addition to the researchers try to shows that in table no 2, there were no variations between Nayagarh and Kandhamal districts in terms of the gender, location, or training of the teachers for smart classroom instruction. The researchers feel that, in Nayagarh and Kandhamal both districts have no any differences due to environment and geographical conditions. Odisha government is giving same facilitates to both districts and enhancement on professional qualification are same that's way did not any differences was found between two districts of Nayagarh and Kandhamal. Hence, educators' competencies are linked to cognitive skills and should encompass the physical aspects and instructional strategies necessary to address challenges and strive to seamlessly incorporate technology into the Smart classroom teaching and learning environment. (Alhubaishy & Aljuhani, 2021).

9. Implication of the study

1. According to the findings of the study, no differences were found in terms of Gender, Location and Trained teacher on Smart Classroom teaching. The researchers reveal on the basis of results, every school has desktop computer, projector, printer, and scanner. However, interactive boards, which are crucial to the teaching and learning process in modern Smart Classrooms, are present in any institutions. The government may consider taking the initiative to supply resources such as interactive boards and microphones to all schools, while also ensuring diligent utilization of these materials by teachers throughout the teaching and learning process.
2. The government may decide to hire full-time computer teachers to help with training, instruction, and upkeep of the Smart Classroom. In order to provide proper educational materials in the Smart classroom, the school administration may add certain instructional CDs or DVDs to their library. The Smart classroom should use subject-specific software in addition to the content provided by the KYAN projector.
3. Educators should be made aware of the importants on ICT,their professional growth through enrolment in MOOCs and SWAYAM. Teachers should be motivated to successfully complete ICT-focused MOOC courses offered by various institutions and Universities.
4. Enrolling in MOOCs and SWAYAM will help teachers become more aware of how ICT,which may be used for professional development. The completion of ICT-related MOOCs offered by various institutions and Universities may be recommended for teachers.
5. The present study reveals that, there are no differences between rural and urban teachers of both districts, because of that; all schools have a proper surface to display or use the multimedia platform.

10. Conclusion

Smart classroom teaching offers a lot of promise to raise the standard of instruction and learning. This investigation identify that smart classroom teaching in regards of gender and location wise are not differences but regards to training, trained-teachers are more aware and knowledgeable towards their Classroom teaching in Nayagarh and Kandhamal district of Odisha. Therefore, Districts wise (Nayagarh and Kandhamal); did not any differences in terms of Gender, Location and Training of the teachers towards smart classroom teaching. Additionally, in future research, there is potential for conducting comparative investigations into the quality of learning and the scrutiny of specific interaction patterns, which should be a focal point for upcoming studies. in light of the conclusions drawn from this study, additional research may look into measures to enhance teachers' expertise.

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