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ASSOCIATION BETWEEN ICT AWARENESS AND FEW SELECTED VARIABLES OF PROSPECTIVE TEACHERS

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ABSTRACT

The use of ICT in teaching and learning helps students to expand knowledge, experience and increase understanding. Using ICT in study encourages students to process information better and improve their memory. Students would be able to construct knowledge easier with the support of ICT. The present sample consists of 793 prospective teachers of physical science from colleges of Education. Data were collected using a self-constructed scale on ICT awareness. Data were analyzed using Chi-square (χ^2) test. The results revealed that the computer literacy of the prospective teachers of physical science is influencing their software awareness and ICT awareness. It was found that the newspaper reading habits of the prospective teachers of physical science is influencing their hardware awareness. There is no significant association between library usage of the prospective teachers of physical science and their general awareness, software awareness, hardware awareness, internet awareness and ICT awareness.

KEYWORDS: *ICT awareness, Prospective Teachers, Association, Computer literacy, Newspaper reading, Library usage .*

I. INTRODUCTION

ICT can provide powerful tools to help learners access vast knowledge resources, collaborate with others, consult with experts, share knowledge, and solve complex problems using cognitive tools. ICT also provide learners with powerful new tools to represent their knowledge with text, images, graphics, and video.

The use of ICT in teaching and learning helps students to expand knowledge, experience and increase understanding. Using ICT in study encourages students to process information better and improve their memory. Students would be able to construct knowledge easier with the support of ICT. ICT has increased the interest and motivation of pupils in schools.

ICT IN TEACHER EDUCATION

With the emerging new technologies, the teaching profession is evolving from an emphasis on teacher-centred, lecture-based instruction to student centred, interactive learning environments. Designing and implementing successful ICT-enabled teacher education programmes is the key to fundamental, wide-ranging educational reforms.

The ICT integration in teacher education is the need of the hour for quality teacher education programs. Preparing teachers to use technology effectively is a major area of concern for teacher education. But the problem is that there is very little fundamental research that investigates how teachers might learn

with digital technologies. ICT results in transformation from teacher-oriented learning to that of exploratory self-learning.

II. REVIEW OF RELATED LITERATURE

The reviewed studies reported that the level of ICT awareness of teachers as well as students was very high (Akpojotor, 2016; Muhammad & Prema, 2017). Ani et al. (2016) reported that student's lack access and awareness to ICT resources and lack ICT skills. Rajasekar and Vaiyapuri (2007) and Thakur (2014) contradicted the above findings that there was a low degree of ICT awareness and computer knowledge of teachers. Rao (2008) verified that there was difference in the access and awareness of media infrastructure for students at home. Sami (2009) found that most of the users were not aware of many of the electronic information services. Non-technical users were not aware of even Internet.

III. NEED AND SIGNIFICANCE OF THE STUDY

There is lack of role models for the use of ICT in teaching, lack of balance between the availability of ICT materials and the competences of the teaching staff and lack of ownership and entrepreneurial attitude of teachers to explore and incorporate ICT in their lessons. Teacher educators and student teachers feel competent about their technical skills, but they are less confident about the pedagogical use of ICT for learning purposes.

ICT awareness compels pre-service teachers to think about the why questions regarding teaching with technology. Why is this technology appropriate for achieving learning outcomes? Why is this technology likely to improve student learning? Is there a positive change in student learning as a result of the use of technology?

At present the government and private stake holders of education are giving utmost priority to introduce computer education in the daily class room teaching. So it is very necessary to conduct such type of research which will give clear idea of awareness of ICT of student teachers.

IV. STATEMENT OF THE PROBLEM

ICT awareness knowledge and skill makes the prospective teachers to be aware of using technology for pedagogical purposes. Technology helps the student teachers to explore their subjects deeply. This helps in achieving their educational objectives which in turn helps to improve their academic achievement. Hence it is stated as “Association between ICT awareness and few selected variables of prospective teachers”

V. OBJECTIVES OF THE STUDY

1. To find out whether there is any significant association between prospective teachers of physical science in their general awareness, hardware awareness, software awareness, internet awareness and ICT awareness with respect to Computer literacy, Newspaper reading habit and Library usage per week.

VI. HYPOTHESES OF STUDY

1.1 There is no significant association between computer literacy of the prospective teachers of physical science and their general awareness, software awareness, hardware awareness, internet awareness and ICT awareness.

1.2 There is no significant association between news paper reading habits of the prospective teachers of physical science and their general awareness, software awareness, hardware awareness, internet awareness and ICT awareness.

1.3 There is no significant association between library usage of the prospective teachers of physical science and their general awareness, software awareness, hardware awareness, internet awareness and ICT awareness.

VII. METHODOLOGY

The investigator has used survey method. The population for the present study includes the Bachelor of Education students whose major pedagogical subject is physical science in the government aided and self-financing colleges of education affiliated to the Tamilnadu Teachers Education University, Chennai from Thoothukudi, Tirunelveli and Kanyakumari districts. Sample was selected from the population by adopting stratified random sampling techniques. The present sample consists of 793 prospective teachers of physical science from government aided and self financing colleges of education.

VIII. TOOL EMPLOYED

ICT AWARENESS SCALE

The ICT awareness scale was prepared and validated by the investigator, to measure the ICT awareness of the subjects. The 40 statements of ICT awareness fall into four dimensions namely, general awareness, software awareness, hardware awareness, and internet awareness. In this scale, all the items were objective type with multiple choices. The correct answer was given one mark, and wrong answer was given zero mark. The scoring was done with the scoring key which was prepared by the investigator for ICT awareness scale. The lowest score is '0' and the highest score is 40 for the tool. The reliability of the validated tool on ICT awareness was found to be 0.82.

IX. ANALYSIS OF DATA

TABLE 1.1

Association between computer literacy of the prospective teachers of physical science and their ICT awareness

ICT Awareness and its Dimensions	df	Calculated χ^2 value	Remarks
General Awareness	4	6.461	NS
Software Awareness		15.853	S
Hardware Awareness		8.722	NS
Internet Awareness		8.150	NS
ICT Awareness		20.254	S

From the above table 1.1, it is evident that the χ^2 value is significant at 5% level for software awareness and ICT awareness. Hence there is no significant association between computer literacy of the prospective teachers of physical science and their general awareness, hardware awareness and internet awareness. But, there is significant association between computer literacy of the prospective teachers of physical science and their software awareness and ICT awareness.

TABLE 1.2

Association between newspaper reading habits of the prospective teachers of physical science and their ICT awareness

ICT Awareness and its Dimensions	df	Calculated χ^2 value	Remarks
General Awareness	6	6.140	NS
Software Awareness		8.799	NS
Hardware Awareness		16.566	S
Internet Awareness		6.023	NS
ICT Awareness		11.888	NS

From the above table 1.2, it is evident that the χ^2 value is significant at 5% level for hardware awareness. Hence there is no significant association between newspaper reading habits of the prospective teachers of physical science and their general awareness, software awareness, internet awareness and ICT

awareness. But, there is significant association between newspaper reading habits of the prospective teachers of physical science and their hardware awareness.

TABLE 1.3

Association between library usage of the prospective teachers of physical science and their ICT awareness

ICT Awareness and its Dimensions	df	Calculated χ^2 value	Remarks
General Awareness	6	10.247	NS
Software Awareness		3.075	NS
Hardware Awareness		7.970	NS
Internet Awareness		3.173	NS
ICT Awareness		8.085	NS

From the above table 1.3, it is inferred that the χ^2 value is not significant at 5% level for the ICT awareness and its dimensions. Hence there is no significant association between library usage of the prospective teachers of physical science and their general awareness, software awareness, hardware awareness, internet awareness and ICT awareness.

X. MAJOR FINDINGS AND DISCUSSIONS

The results obtained from the analysis of tables from 1.1 to 1.3 are discussed in the context of hypotheses formulated. The results already arrived at by various related studies have also been compared with the results of the present study. This has been done to make the study more meaningful.

1.1 It was found that the computer literacy of the prospective teachers of physical science is influencing their software awareness and ICT awareness. The reason may be computer literacy enables one to have the ability to quickly and easily navigate a computer. Greater the computer literacy, greater will be the ICT awareness of students to use digital technology, communication tools and networks to access, manage, integrate, evaluate, and create information in order to function in a knowledge society. Onasanya et al. (2011) reported that the level of computer literacy of the science teachers examined was low. The males belonged to higher computer literacy level than the females.

1.2 It was found that the newspaper reading habits of the prospective teachers of physical science is influencing their hardware awareness. Many newspapers both in Tamil and English have separate sections every week which features only computer and technological innovations. Students gain rich knowledge about latest hardware devices and peripheral devices in market and their applications in different fields by regularly reading these sections. Thus it contributes to hardware awareness.

XI. RECOMMENDATIONS

The findings of the present study may be utilized by educational planners, curriculum designers, administrators, counsellors and teachers in order to assess and modify their schemes and teaching methodologies.

1. In the physical science pedagogical paper, ICT integrated activities may be included.
2. The current teacher education program is dominated by theory with hardly any emphasis on practice. Hence it must be made more performance and task-oriented using ICT technologies.
3. High quality, meaningful, and culturally responsive digital content must be available for teachers and learners.
4. Students and teachers must have sufficient access to digital technologies and the internet in their classrooms, schools and teacher education institutions.
5. Teachers who are well acquainted with ICT alone should be appointed.
6. Creation of appropriate instructional and infrastructural facilities for ICT integration in all the teacher education institutions should be made mandatory.

7. Teacher educators can be oriented on ICT integration by national and global expertise. They must be trained to have the knowledge and skills to use the new digital tools and resources.

XII. CONCLUSION

The results revealed that computer literacy helps the prospective teachers of physical science to use ICT tools, which in turn makes teaching and learning process very easy. Technology helps the student teachers to explore their subjects deeply through newspaper reading and usage of the library and as a result abstract ideas become concrete to the students. This helps in achieving their educational objectives which in turn helps to improve their academic achievement.

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