



## RELATIONSHIP BETWEEN DIGITAL LITERACY AND ATTITUDE TOWARDS ICT OF SENIOR SECONDARY LEVEL STUDENTS: AN EXPLORATORY STUDY WITH REFERENCE TO GENDER, LOCALE AND STREAM

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### Abstract

*The aim of the study was to investigate the relationship between digital literacy and attitude towards ICT of senior secondary level students with reference to gender, locale and stream. Descriptive research method was employed in this study. A group of 600 senior secondary level students (300 male and 300 female) was taken as participants through stratified random sampling method those were represented urban and rural locality of district Meerut in same ratio i.e. 300 students were taken from urban locality and 300 students were taken from rural locality. A group of 600 students was equally distributed into three streams i.e. Science, Arts and Commerce. Thus, 200 students of science group, 200 students of Arts group and 200 students of commerce group were taken under the sample units in the present study. Digital literacy scale and a scale for assessing the attitude towards ICT were constructed by investigator. For the analysis of data, percentage, mean, standard deviation and C.R. value were obtained in the present study. It is concluded that positive and significant relationship were found between digital literacy and attitude towards ICT of students with reference to gender, locale and stream.*

**Key words:** Digital literacy, Attitude towards ICT, Senior secondary level, Gender Locale and Stream

### Introduction:

The boundaries of traditional literacy are expanded by digital literacy. It includes e-learning techniques that use video and audio to improve students' learning and critical thinking. Students learn how to improve their communication, language, and media abilities in addition to reading and writing when they integrate digital and traditional literacies. With the use of pictures, charts, music, and video, they learn and become more engaged with the world,

advancing their reading and writing abilities. Additionally, they acquire dynamic creativity that enhances their ability to think, speak, create, and interact with the world.

When children are exposed to information technology at an early age, they can access and become accustomed with digitally interactive "smart" learning tools. Children who are taught IT skills from an early age benefit from the technological advancements that are occurring in today's digital environment. If educational platforms don't start offering digital literacy courses, as technology develops, students will get overwhelmed. Technology advancements give educators access to digital materials for curricula, which greatly aid in the teaching of digital literacy. For instance, students like making multimedia presentations that improve their writing skills when they have access to digital resources for writing tasks.

ICT is crucial for education in schools, and the N.C.F. 2005 said that using it to connect students and teachers with scientists in research and university settings will help demystify scientists and their work. The term "information and communication technology" (ICT) describes the group of technologies used in the many stages of gathering, storing, modifying, retrieving, and transferring information. The use of ICT in education lays the groundwork for national development. Every person experiences it as a dynamic force that shapes their physical, mental, emotional, social, and ethical development. It is the full expression of a child's uniqueness, empowering him to contribute creatively to the life of others.

Digital literacy and a positive attitude towards ICT are essential components that are greatly needed in Indian classroom settings because they address issues related to training and education and are typified by a methodical and disciplined approach to the arrangement of learning resources. By taking into account new systems and materials in addition to creating tools and discovering processes, information and communication technology advancements could support innovative teaching practices.

The subsequent research studies corroborate the necessity of the current inquiry and also highlight important aspects covered by earlier research in the same field.

**Arif, A. Z. (2019)** conducted a study to find out the uses of ICT in learning of their subjects easily. Findings of this research was that the students had spent more time in ICT in learning along with showing positive behavior and attitude in learning. Further, students perceived that using ICT in teaching and learning plays a vital and important role for ease and better understanding of the subject.

**Aggarwal, S. et. al. (2018)** examined digital literacy and ICT skills in slum areas of Delhi. The findings showed that the rate of accessibility of digital infrastructure was low for

both males and females due to high cost, lack of awareness and training. However, 97 % of males had mobile phones and most of them were using internet for gaining knowledge while 74 % females had mobile phones but only 27 % women were using internet. It was also revealed that women were less informative than men due to less availability of digital information infrastructure and lower literacy rate.

**Kaeophanuek, S. et. al. (2018)** conducted a research study to understand the ICT skills and digital literacy level among junior students and how can it be useful for their learning process in their regular study. Findings revealed that students had adequate ICT skills and were using it for their studies and had positive perception about ICT skills. It was found that students carried a positive approach towards e-learning if they had prior knowledge of ICT. The students who did not have prior ICT skills were a little hesitant towards the application of ICT in their studies.

**Mohalik, R. et. al. (2018)** conducted a research study to find the digital literacy level and ICT skills in teacher trainee students. Results revealed that the students had enough exposure of ICT skills and were using it in their education curriculum regularly.

**Pratap, R. et. al. (2018)** conducted a study to comprehend the ICT skills and perception of students towards digital literacy. Result showed that students had a positive perception towards the use of ICT skills and were keen to get advance level of ICT knowledge.

**Bansal, S. et. al. (2018)** conducted a study on ICT skills, digital literacy in students and their achievements because of it. Results revealed that students had a positive perception towards ICT. They had sufficient digital literacy which was useful for them to get information and knowledge of their subject and research.

**Chanchinmania, et. al. (2018)** did a study to evaluate the digital literacy of research scholars. The findings of the research revealed that students were adequately equipped with ICT infrastructure and had enough ICT skills be able to access required information from the internet and compile that in proper format to use in their research study. The study further revealed that more advance ICT tools are needed to train the students and enhance their computer literacy.

**Nedungadi, P.P. (2018)** conducted a study to find out the relation of digital literacy of rural people with their attitude towards ICT. Objective of this research study was to comprehend the connection of digital literacy with perception of people of rural area under Digital India Program. The findings of the study showed that the rate of digital literacy was very low in these areas but a willingness to learn was observed.

It is clearly seen from the above review of related literature that a very few studies conducted in the area of present investigation. No any study was found which comprehensively enlighten on digital literacy and attitude towards ICT in relation to gender, locale and stream of senior secondary students.

### **Objectives of the study:**

1. To assess the coefficient of correlation between digital literacy and attitude towards ICT of students in relation to gender (male and female).
2. To obtain the coefficient of correlation between digital literacy and attitude towards ICT of students in relation to locale (urban and rural).
3. To attain the coefficient of correlation between digital literacy and attitude towards ICT of students in relation to streams (Science, Arts and Commerce).
4. To assess the coefficient of correlation between digital literacy and attitude towards ICT of students (composite group).

### **Hypotheses of the study:**

1. There is no significant coefficient of correlation between digital literacy and attitude towards ICT of students in relation to gender.
2. There is no significant coefficient of correlation between digital literacy and attitude towards ICT of students in relation to locale.
3. There is no significant coefficient of correlation between digital literacy and attitude towards ICT of students in relation to streams.
4. There is no significant coefficient of correlation between digital literacy and attitude towards ICT of students.

### **Research method:**

In the light of aim and objectives of the study, investigator employed descriptive method of research.

### **Sample design:**

A group of 600 students (300 male and 300 female) of senior secondary schools affiliated to C.B.S.E board was taken as participants through stratified random sampling method those were represented urban and rural locality of district Meerut in same ratio i.e. 300 students were taken from urban locality and 300 students were taken from rural locality. A group of 600 students was equally distributed into three streams i.e. Science, Arts and Commerce. Thus, 200 students of science group, 200 students of Arts group and 200 students of commerce group were taken under the sample units in the present study.

### Tools of the study:

A multiple choice-based test paper consisting 25 items was framed to assess the digital literacy of senior secondary level students. The scale has content validity and test-retest reliability index was 0.796 which is satisfactory for any scale. Further, for assessing the attitude of the students towards ICT, a scale for attitude towards ICT was constructed by researcher in which 20 statements were consisted and all the statements of **scale for** attitude towards ICT were constructed in the form of three-point rating scale (Agreed, Moderate and Disagreed). The worthiness of each statement was evaluated through calculation the content validity index (CVI) and the value (s) of CVI were found greater than to its relevant/accepted level ( $CVI \geq 0.75$ ) which indicated high degree of agreement of the experts. The test-retest reliability index was 0.841 which is highly satisfactory for this scale.

### Statistical techniques used:

In the present study, percentage, mean, standard deviation and critical ratio were employed for analysis of data

### Findings of the study:

#### 1. To assess the coefficient of correlation between digital literacy and attitude towards ICT of students in relation to gender (male and female).

In relation to correlation between digital literacy and attitude towards ICT of male and female students of senior secondary level, investigator obtained coefficient of correlation between digital literacy and attitude towards ICT of male and female students of senior secondary level and cited in the table 01.

**Table 01: Coefficient of correlation between digital literacy and attitude towards ICT of students in relation to gender**

Category (Gender)	Variables	N	r-value	Level of significance
Male	Digital literacy Attitude towards ICT	300	0.291	Significant at 0.01
Female	Digital literacy Attitude towards ICT	300	0.288	Significant at 0.01

From the table 01, it is clearly stated that the coefficient of correlation between digital literacy and attitude towards ICT of male students of senior secondary level was found 0.291 which is significant at 0.01 level. In the same manner, the coefficient of correlation between

digital literacy and attitude towards ICT of female students of senior secondary level was found 0.288 which is significant at 0.01 level. Thus, it can be said that the students either male or female having high level of digital literacy also shows high level of favorable attitude whereas students having low level of digital literacy also shows unfavorable attitude towards ICT. The null hypothesis “*there is no significant coefficient of correlation between digital literacy and attitude towards ICT of senior secondary level students in relation to gender*” was rejected at 0.01 level.

## 2. To obtain the coefficient of correlation between digital literacy and attitude towards ICT of students in relation to locale (urban and rural).

In relation to correlation between digital literacy and attitude towards ICT of senior secondary level students of urban and rural locality, investigator obtained coefficient of correlation between digital literacy and attitude towards ICT of senior secondary level students of urban and rural locality and cited in the table 02.

**Table 02: Coefficient of correlation between digital literacy and attitude towards ICT of students in relation to locale**

Category (Locale)	Variables	N	r-value	Level of significance
Urban	Digital literacy	300	0.294	Significant at 0.01
	Attitude towards ICT			
Rural	Digital literacy	300	0.281	Significant at 0.01
	Attitude towards ICT			

From the table 02, it is clearly stated that the coefficient of correlation between digital literacy and attitude towards ICT of senior secondary level students of urban locality was found 0.294 which is significant at 0.01 level. In the same manner, the coefficient of correlation between digital literacy and attitude towards ICT of senior secondary level students of rural locality was found 0.281 which is significant at 0.01 level. Thus, it can be said that the students either belongs to urban locality or belongs to rural locality having high level of digital literacy also shows high level of favorable attitude whereas students having low level of digital literacy also shows unfavorable attitude towards ICT. The null hypothesis “*there is no significant coefficient of correlation between digital literacy and attitude towards ICT of senior secondary level students in relation to locale*” was rejected at 0.01 level.

### 3. To attain the coefficient of correlation between digital literacy and attitude towards ICT of students in relation to streams (Science, Arts and Commerce).

In relation to correlation between digital literacy and attitude towards ICT of senior secondary level students of different streams, investigator obtained coefficient of correlation between digital literacy and attitude towards ICT of senior secondary level students of different streams and cited in the table 03.

**Table 03: Coefficient of correlation between digital literacy and attitude towards ICT of students in relation to different streams**

Category (Streams)	Variables	N	r-value	Level of significance
Science	Digital literacy	200	0.297	Significant at 0.01
	Attitude towards ICT			
Arts	Digital literacy	200	0.269	Significant at 0.01
	Attitude towards ICT			
Commerce	Digital literacy	200	0.276	Significant at 0.01
	Attitude towards ICT			

From the table 03, it is clearly stated that the coefficient of correlation between digital literacy and attitude towards ICT of senior secondary level students of Science stream was found 0.297 which is significant at 0.01 level. In the same manner, the coefficient of correlation between digital literacy and attitude towards ICT of senior secondary level students of Arts stream was found 0.269 which is also significant at 0.01 level. In addition, the coefficient of correlation between digital literacy and attitude towards ICT of senior secondary level students of Commerce stream was found 0.276 which is also significant at 0.01 level. Thus, it can be said that the students of any stream having high level of digital literacy also shows high level of favorable attitude whereas students having low level of digital literacy also shows unfavorable attitude towards ICT. The null hypothesis “*there is no significant coefficient of correlation between digital literacy and attitude towards ICT of senior secondary level students in relation to stream*” was rejected at 0.01 level.

### 4. To assess the coefficient of correlation between digital literacy and attitude towards ICT of students (composite group).

In relation to correlation between digital literacy and attitude towards ICT of students (composite group) of senior secondary level, investigator obtained coefficient of correlation

between digital literacy and attitude towards ICT of students (composite group) of senior secondary level and cited in the table 04.

**Table 04: Coefficient of correlation between digital literacy and attitude towards ICT of students of senior secondary level**

Category (NA)	Variables	N	r-value	Level of significance
Students (Overall)	Digital literacy Attitude towards ICT	600	0.287	Significant at 0.01

From the table 04, it is clearly stated that the coefficient of correlation between digital literacy and attitude towards ICT of students (**composite group**) of senior secondary level was found 0.287 which is significant at 0.01 level. The positive and significant relation between digital literacy and attitude towards ICT reflects that the students of senior secondary level having high level of digital literacy also shows high level of favorable attitude whereas students having low level of digital literacy also shows unfavorable attitude towards ICT. It may be because of digital literacy allows the students to access the ICT appliances in the life style which may be also influence their attitude towards ICT in the favorable pattern. Thus, null hypothesis “*there is no significant coefficient of correlation between digital literacy and attitude towards ICT of students (composite group) of senior secondary level*” was rejected at 0.01 level.

### Conclusion:

It is concluded that positive and significant relationship were found between digital literacy and attitude towards ICT of students with reference to gender, locale and stream which reflects that the students of senior secondary level having high level of digital literacy also shows high level of favorable attitude whereas students having low level of digital literacy also shows unfavorable attitude towards ICT. It may be because of digital literacy allows the students to access the ICT appliances in the life style which may be also influence their attitude towards ICT in the favorable pattern.

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