



DIGITAL LITERACY AMONG THE STUDENTS OF SENIOR SECONDARY LEVEL: A STUDY WITH REFERENCE TO GENDER AND LOCALE

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Abstract

The aim of the study was to investigate the digital literacy among the students of senior secondary level with reference to gender and locale. Descriptive research method was employed to study the digital literacy among senior secondary level. 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 scale for assessing the digital literacy known as digital literacy scale was 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 from the statistical results with reference to digital literacy of students of senior secondary level that a large proportion of sampled students showed an average level of digital literacy. Further, insignificant difference was reported in the digital literacy between male and female senior secondary level students. In the light of digital literacy of students of urban and rural locality, significant difference has been found in the digital literacy of senior secondary level students belongs to urban and rural locality. The high level of digital literacy was reported in students of urban locality as compare to students of rural locality.

Key words: Digital literacy, senior secondary level, gender and locale

Introduction:

As the globe grows increasingly interconnected, nobody should fall behind. Children who are left behind because of poverty, gender, disability, race, ethnicity, or geographic isolation can benefit from digital technology if it is used wisely and made widely accessible. It can open up new opportunities for them and give them the tools they need to succeed in the

digital age. Children living in rural locations may now receive school thanks to digitalization, which also makes it possible for children with disabilities to interact with others. Increased online connectedness has created new avenues for social inclusion, civic involvement, and many other opportunities. The internet is used by younger generations to explore, study, create, socialise, and satisfy their thirst for knowledge all of which contribute to their own personal growth. Their primary information source these days is the internet, which also enables them to exercise their freedom and rights. With the advent of digital technology, young people now have an abundance of new venues and tools to discover and express who they are. These include blogs, social networking sites, instant messaging, and video-sharing websites. Literacy becomes a multi-layered term when one uses digital tools and venues for self-expression because of its speed, power, and spontaneous spread. A growing number of young people access these environments via apps that are loaded on their tablets or smart phones.

In terms of school pedagogy, digital literacy is the minimal knowledge and proficiency that secondary school teachers need to locate, assess, utilise, and create information using digital technology, communication tools, or networks in order to improve student learning and get them ready for demands from a globalised world. Therefore, digital literacy involves more than just incorporating technology into lesson plans; it also involves using technology to comprehend and improve contemporary communication, find one's place in the digital sphere, and manage knowledge and experience for the benefit of students in the information age. The three main digital gadgets that are most frequently utilised in pedagogy are computers, smart phones, and tablets. Previous researches conducted on digital literacy cited as following-

Bansal, C. & Kumar, P. (2023) studied the level of digital literacy among secondary level students with a range of experiences in digital learning and found that the majority of the children had a good degree of digital literacy, according to the results, although none stood out as particularly strong. Additionally, students with mediocre experiences in digital education demonstrated a moderate level of digital literacy across four domains.

Batez, M. (2021) examined digital literacy skills and use of ICT in education system and its impact on improvement of education process and found that students had higher skills of ICT than needed for online education. Students who had more skills of ICT were more satisfied with the idea of online education.

Tahir, M. et.al. (2021) studied the level of ICT skills and uses of it in their learning curriculum. Results highlighted that in general, the students are good in using ICT and internet in their study but not too good in more advanced modules of ICT. They were also found to not

have hands-on experience in using advanced digital media software's. The study further revealed that male students are better in using ICT than female students.

Martin, C. (2019) investigated how school students evaluate their digital literacy skills. The result showed that the students neither have enough skills to be called a 'digital native' nor their skills were sufficient for their academic or professional life.

Vainio, T. et. al. (2018) examined the ICT skills of students of Finland to find how these skills help them in their regular study process and other knowledge gaining programs. Results of the study showed that the students with advanced ICT skills were more knowledgeable, informative and more successful in their regular learning process and in gaining other knowledge of other fields than students who had little to no prior knowledge of ICT.

It is revealed that very few researches were conducted on digital literacy of senior secondary students with reference to gender and locale whereas today, in the era of technology, it should be important to investigate the any role of gender and locale play vital role in forecast the digital literacy of the students of senior secondary level.

Objectives of the study:

1. To study the different levels of digital literacy among students of senior secondary level with reference to gender.
2. To compare the digital literacy of male and female students of senior secondary level.
3. To study the different levels of digital literacy among students of senior secondary level with reference to locale.
4. To compare the digital literacy of urban and rural students of senior secondary level.

Hypotheses of the study:

1. There is no significant difference in digital literacy of male and female students of senior secondary level.
2. There is no significant difference in digital literacy of urban and rural students of senior secondary level.

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.

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.

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 study the different levels of digital literacy among students of senior secondary level with reference to gender.

In order to investigate the different levels of digital literacy among male and female students, the investigator acquired raw scores by administering a self-created digital literacy scale to male and female senior secondary school students. Furthermore, using pre determined norms of the scale, row score of male and female students' digital literacy were divided into three levels i.e. high, average, and low. The number of male and female students, as well as their percentages in the three levels of digital literacy (High, Average, and Low), were obtained and are displayed in table 011 as under-.

Table 01: Showing the percentage of male and female students under different levels of digital literacy (high, average and low)

Group	Levels of digital literacy		
	High	Average	Low
Male (N=300)	56 (18.7%)	143 (47.7%)	101 (33.6%)
Female (N=300)	51 (17%)	153 (51%)	96 (32%)
Overall	107 (17.8%)	296 (49.4%)	197 (32.8%)

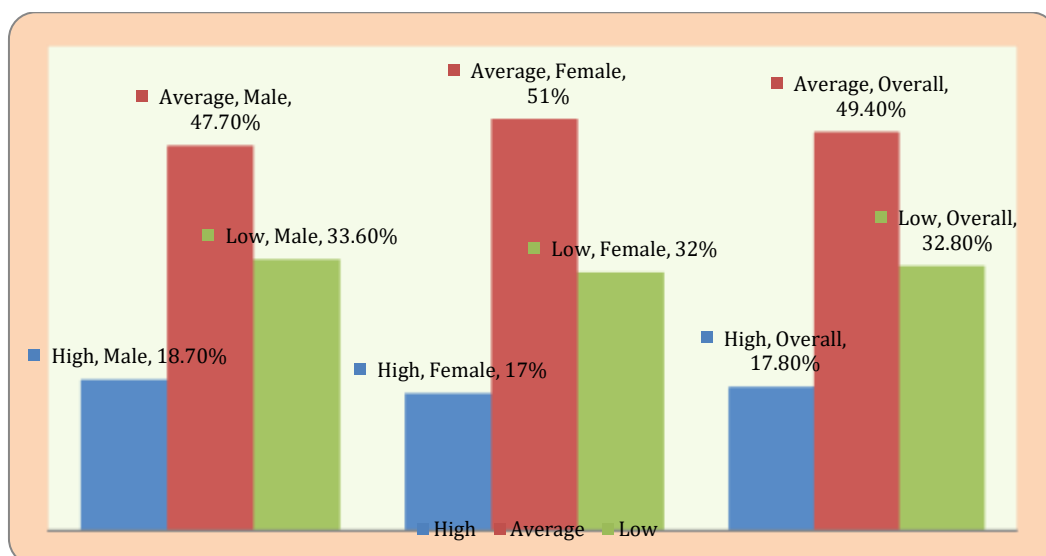
From the observation of table01 and it is revealed from the analysis of the data related to digital literacy of male and female students studying in higher secondary schools affiliated to C.B.S.E. board, it becomes clear that 18.5 percent of male students studying in higher secondary schools affiliated to C.B.S.E. board were found under the high level of digital literacy whereas a substantial proportion of male students (47.7%) were classified as having an

average level of digital literacy. Similarly 33.6 percent of male students were identified as having low level of digital literacy.

In the same manner, from the observations related to digital literacy of female students, it is revealed that 17 percent of female students studying in higher secondary schools affiliated to C.B.S.E. board were found under the high level of digital literacy whereas a substantial proportion of female students (51%) were classified as having an average level of digital literacy. Similarly 32 percent of female students were identified as having low level of digital literacy.

Overall, the statistical findings related to digital literacy of composite group of students (male and female) expressed that 17.8 percent of students (overall) studying in higher secondary schools affiliated to C.B.S.E. board were found under the high level of digital literacy whereas a substantial proportion of sampled students (49.4%) were classified as having an average level of digital literacy. Similarly 32.8 percent of students (overall) were identified as having low level of digital literacy.

It is concluded from the above discussion that a large proportion of sampled students showed an average level of digital literacy and little difference(s) were reported in the percentage of male and female students under the different levels of digital literacy. The data shown in table 01 is alternatively represented using a bar diagram01 in the following way:



Graph01: Showing the percentage of male and female students under different levels of digital literacy (high, average and low)

2. To compare the digital literacy of male and female students of senior secondary level.

In relation to compare the digital literacy of male and female students, investigator sought to investigate the significant difference in Mean value (s) of digital literacy between male and female senior secondary students. The corresponding statistical values are presented in table 02 below-

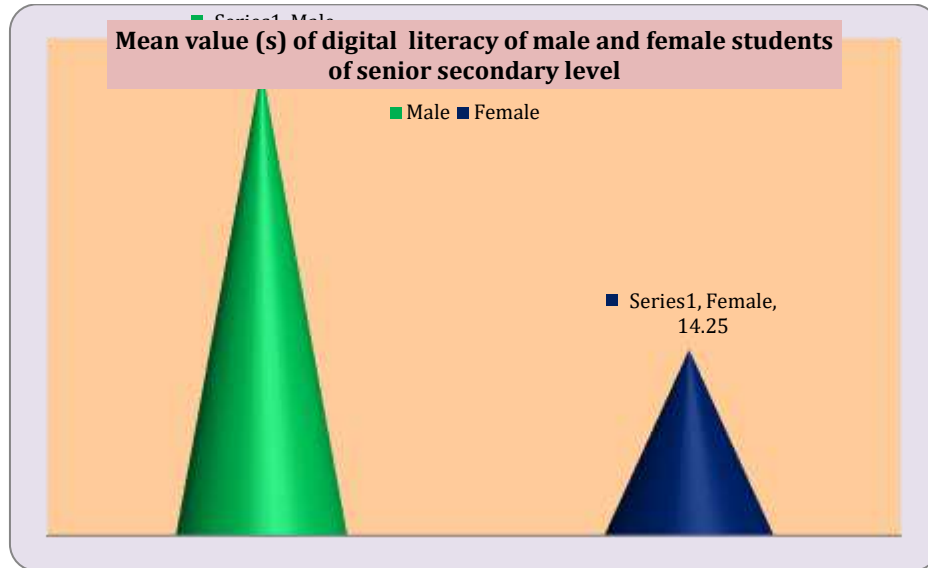
Table 02: Showing Mean, S.D., and CR-value for study the significant difference in Mean value (s) of digital literacy of male and female students

Group	Statistical results of Digital Literacy			CR-value	p-value
	N	M	S.D		
Male	300	14.93	4.28	1.84	p>.05 df=598
Female	300	14.25	4.76		

*significant at 0.05 and **significant at 0.01 level

From table 02, it is revealed that the mean value(s) of scores of digital literacy for male and female students were found 14.93 and 14.25 respectively and the value(s) of standard deviation for the same (digital literacy of male and female students) were found 4.28 and 4.76 respectively. The mean value (s) for digital literacy of male and female students was found much closed.

Further, to investigate the significant difference in Mean value (s) of digital literacy for male and female students, investigator obtained the value of critical ratio (CR-value) and found **insignificant** difference ($CR\text{-value}=1.84$, $df=598$, $p> 0.05$) between mean value (s) of digital literacy of male and female students studying in the senior secondary schools affiliated to C.B.S.E Board. The null hypothesis “**There is no significant difference in digital literacy of male and female students of senior secondary level**” was accepted at 0.05 level on the basis of obtained value of critical ratio. It is clear from the above analysis that no significant difference has been found between the digital literacy of male and female senior secondary level students, the reason for which could be that in today's era of science and technology, youth, whether male or female, are equally sensitive and aware towards digitalization because digital devices have an important role in all activities of their life and these are treated as part and parcel of life style. The mean value (s) of digital literacy of male and female students are shown in the bar diagram 02 as below-



Graph 02: Showing the mean value (s) of digital literacy of male and female students of senior secondary level

3. To study the different levels of digital literacy among students of senior secondary level with reference to locale.

In order to investigate the different levels of digital literacy among students of urban and rural locality, the investigator acquired raw scores by administering a self-created digital literacy scale to students of urban and rural locality studying in senior secondary schools. Furthermore, using pre determined norms of the scale, row scores of students' digital literacy were stratified into three levels i.e. high, average, and low. The number of students of urban and rural locality, as well as their percentages in the three levels of digital literacy (High, Average, and Low), were obtained and are displayed in table 4.3 as under-.

Table 4.3: Showing the percentage of students of urban and rural locality under different levels of digital literacy (high, average and low)

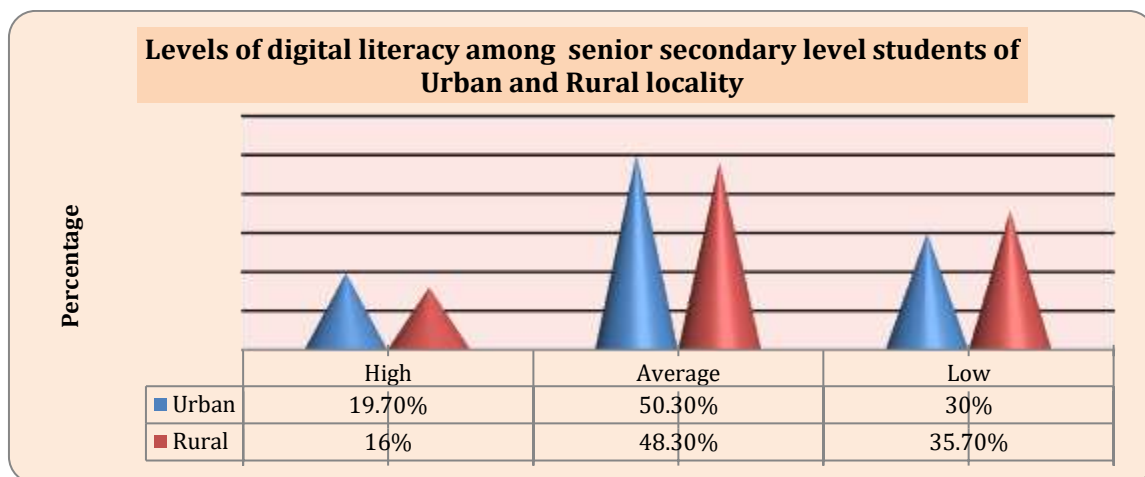
Locality of Students	Levels of digital literacy		
	High	Average	Low
Urban (N=300)	59 (19.7%)	151 (50.3%)	90 (30%)
Rural (N=300)	48 (16%)	145 (48.3%)	107 (35.7%)

From the observation of table03 and it is revealed from the analysis of the data related to digital literacy of the students belongs to urban and rural locality studying in senior secondary schools affiliated to C.B.S.E. board, it becomes clear that 19.7 percent of students

belongs to urban locality and studying in higher secondary schools affiliated to C.B.S.E. board were found under the high level of digital literacy whereas a substantial proportion of students of urban locality (50.3%) were classified as having an average level of digital literacy. Similarly 30 percent of students of urban locality were identified as having low level of digital literacy.

In the same manner, from the observations related to digital literacy of students of rural locality, it is revealed that 16 percent of students belongs to rural locality and studying in higher secondary schools affiliated to CBSE board were found under the high level of digital literacy whereas a substantial proportion of students of rural locality (48.3%) were classified as having an average level of digital literacy. Similarly 35.7 percent of students of rural locality were identified as having low level of digital literacy.

From the above interpretation, it is stated that the percentage of students belongs to urban locality under high level of digital literacy was found greater than the percentage of students belongs to rural locality under the same level of digital literacy. In the same manner, it's vice versa, the percentage of students belongs to rural locality under low level of digital literacy was found greater than the percentage of students belongs to urban locality under the same level of digital literacy. Thus, it is concluded from the above discussion that a large proportion of sampled students showed an average level of digital literacy and a major difference(s) were reported between the percentage of students of urban and rural locality under the different levels of digital literacy. The students of urban locality found more skilled than the students of rural locality. The data shown in table 03 is alternatively represented using a bar diagram 03 in the following way:



Graph03: Percentage of students of urban and rural locality under different levels of digital literacy (high, average and low)

4. To compare the digital literacy of urban and rural students of senior secondary level.

In order to compare the digital literacy of senior secondary students of urban and rural locality, the investigator sought to investigate the significant difference in Mean value (s) of digital literacy of senior secondary students of urban and rural locality. The corresponding statistical values are presented in table 04 below-

Table 04: Showing Mean, S.D., and CR-value for study the significant difference in Mean value (s) of digital literacy of students of urban and rural locality

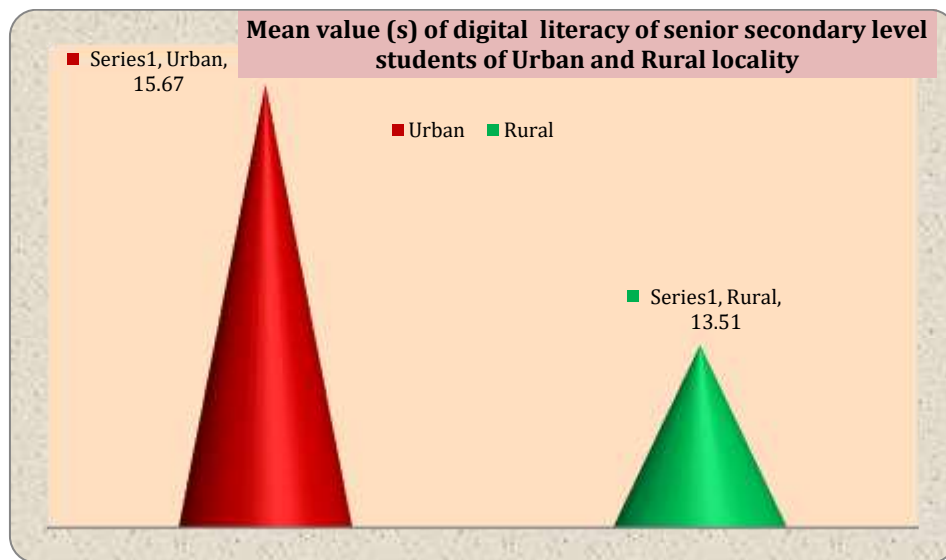
Locality of students	Statistical results of Digital Literacy			CR-value	p-value
	N	M	S.D		
Urban	300	15.67	4.23	5.83**	p<.01 df=598
Rural	300	13.51	4.82		

*significant at 0.05 and **significant at 0.01 level

From table 4.4, it is revealed that the mean value(s) of scores of digital literacy for students of urban and rural locality were found 15.67 and 13.51 respectively and the value(s) of standard deviation for the same (digital literacy for students of urban and rural locality) were found 4.23 and 4.82 respectively. The mean value for digital literacy of senior secondary students belongs to urban locality was found greater than the mean value for digital literacy of senior secondary students who belongs to rural locality.

Further, to investigate the significant difference in Mean value (s) of digital literacy for students of urban and rural locality, investigator obtained the value of critical ratio (CR-value) and found **significant** difference ($CR\text{-value}=5.83$, $df=598$, $p<0.01$) between mean value (s) of digital literacy of senior secondary students of urban and rural locality. The null hypothesis **“There is no significant difference in digital literacy of urban and rural students of senior secondary level”** was rejected at 0.01 level on the basis of obtained value of critical ratio. It is clear from the above analysis that significant difference has been found between the digital literacy of senior secondary level students belongs to urban and rural locality, the reason for which could be that in developing country like India, digital infrastructure is in the progress phase. Digital infrastructure in rural area is not so developed like as digital infrastructure in urban area. So, the students belongs to rural areas faced many difficulties in access of various digital devices and also they are have less affordability. Thus, the students belong to rural areas get less chance to use of various digital platforms which sometimes negatively influence their

digital literacy. The mean value (s) of digital literacy of students belongs to urban and rural locality are shown in the bar diagram04 as below-



Graph 4.04: Showing the mean value (s) of digital literacy of senior secondary students of urban and rural locality

Conclusion:

It is concluded from the statistical results with reference to digital literacy of students of senior secondary level that large proportion of sampled students showed an average level of digital literacy. Further, insignificant difference was reported in the digital literacy between male and female senior secondary level students, the reason for which could be that in today's era of science and technology, youth, whether male or female, are equally sensitive and aware towards digitalization because digital devices have an important role in all activities of their life and these are treated as part and parcel of life style.

In the light of digital literacy of students of urban and rural locality, significant difference has been found in the digital of senior secondary level students belongs to urban and rural locality, the reason for which could be that in developing country like India, digital infrastructure is in the progress phase. Digital infrastructure in rural area is not so developed like as digital infrastructure in urban area. So, the students belongs to rural areas faced many difficulties in access of various digital devices and also they are have less affordability. Thus, the students belong to rural areas get less chance to use of various digital platforms which sometimes negatively influence their digital literacy.

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