

Digital Awareness and Responsible Use of Technology Among Secondary Stage Students

Vincentia Lugun¹, Prof. (Dr.) Ignatius Topno²

¹Research Scholar, St. Xavier's College of Education (Autonomous) Patna, Bihar

²Prof., St. Xaviers College of Education (Autonomous) Patna, Bihar

Abstract

This study examines the level of Digital Awareness (DA) among secondary stage students in the context of the growing importance of Artificial Intelligence (AI) and digital technology in education and society. Digital awareness is considered an essential competency for students to participate effectively in academic, social, and digital environments. The study was conducted on a random sample of 480 secondary stage students from different schools in Jharkhand, including schools affiliated with JAC, CBSE, and ICSE boards. A self-constructed and validated Digital Awareness Scale was used as the main tool for data collection. The data were analyzed using statistical techniques such as mean, standard deviation, and t-test.

The findings reveal varying levels of digital awareness among students: 5.20% had very high awareness, 29.79% high awareness, 43.13% moderate awareness, 18.96% low awareness, and 2.92% very low awareness. Significant differences were found based on gender, type of school, and school board. Male students showed slightly higher digital awareness than female students. However, no significant difference was observed based on habitat. Students studying in private schools demonstrated higher digital awareness compared to those in government schools. Differences were also found among students from different boards, indicating that access to digital resources and environmental exposure influence digital awareness.

The study emphasizes the need to strengthen digital education and ensure equal access to technology for all students.

Keywords: Digital Awareness, Responsible Use, Technology, Secondary Stage Students

I. INTRODUCTION

Digital awareness refers to a person understanding of the digital world and knowledge of how to use digital technology for the knowledge acquiring purpose. It encompasses a wide range of skills and knowledge, from basic computer use to online safety and digital literacy. In the NEP 2020 framework, Secondary Stage Students are those in Grades 9 to 12, typically aged 14 to 18 years. The Secondary Stage is split into two phases Grades 9-10 (Phase -1) and Grades 11 -12 (Phase 2). The students belonged to grade 12 were taken for study. At this pivotal point students learn to dive into the Digital world in their educational (learning) journey, understanding their level of digital literacy is essential for ensuring they can use technology responsibly and safely.

II. IMPORTANCE OF DIGITAL AWARENESS

The digital age demands a digitally literate people, and Secondary Stage Students are at a crucial juncture in developing these skills. Digital awareness is no longer grandeur but a necessity for their academic, personal, social and professional growth.

i. Academic Excellence: Students can access information online, but they need to discern credible sources from misinformation. Digital awareness helps them effectively search, evaluate, and utilize information for their studies. Students can also access online learning platforms. Many educational learning resources, online courses, and virtual classrooms are available. Digital literacy empowers students to enhance their learning.

ii. Workforce readiness: Digital Skills can reduce the work load of project work and assignments related to their class and home work. Digital tools foster critical thinking, problem-solving, and innovation, essential for future careers. Digital awareness equips students to adapt to the rapidly changing technological setting.

iii. Responsible Digital Citizenship: Students come to know about online safety. Students learn to communicate respectfully online, avoiding cyber bullying and online harassment. Students develop awareness of one online presence and how to manage it responsibly.

iv. Critical Thinking and Media Literacy: The internet is flooded with lot of misinformation. Being aware about digital tools and resources enable students to evaluate the credibility of online sources, find difference between fact and fiction and make right decisions.

III. KEY COMPONENTS OF DIGITAL AWARENESS

Digital awareness can be broken down into several dimensions that encompass different aspects of understanding, navigating, and interacting with the digital world. Here are some key dimensions:

1. **Digital Literacy:** Understanding and effectively using digital tools and platforms, such as operating systems, software applications, and the internet.
2. **Digital Communication:** Proficiency in communicating effectively and appropriately using digital tools, including email, social media, and messaging platforms.
3. **Ethical Use of Technology:** Understanding the ethical implications of technology use, including issues related to digital citizenship, intellectual property, and the responsible sharing of information and the ability to find, evaluate, and use information online, distinguishing between credible sources and misinformation.
4. **Digital Well-being:** Maintaining a healthy balance with technology use, being aware of its impact on mental health, sleep, and overall well-being.
5. **Emerging Technologies:** Keeping up with new and evolving technologies, such as artificial intelligence, block chain, and virtual reality, and understanding their potential impact. Each of these dimensions contributes to a holistic understanding of digital awareness, helping individuals navigate the digital landscape more effectively and responsibly.

IV. RATIONALE OF THE STUDY

In the rapidly evolving digital age, secondary stage students are increasingly immersed in technology, making digital awareness a crucial competency. Digital awareness involves the ability to critically evaluate online information, navigate digital tools effectively, and protect oneself from digital threats

like cyber bullying and misinformation. As students are at a pivotal point in their educational journey, understanding their level of digital literacy is essential for ensuring they can use technology responsibly and safely.

IV. OBJECTIVES OF THE STUDY

1. To study the level of Digital Awareness of Secondary Stage Students.
2. To find whether there is any significant difference between gender,
3. To find whether there is any significant difference between the location of the school,
4. To find whether there is any significant difference between type of school,
5. To find whether there is any significant difference between boards.

V. HYPOTHESIS OF THE STUDY

1. There is no significant difference between the mean scores of Digital Awareness of Secondary Stage Students on the basis of gender.
2. There is no significant difference between the mean scores of Digital Awareness of Secondary Stage Students on the basis of Habitat.
3. There is no significant difference between the mean scores of Digital Awareness of Secondary Stage Students on the basis of the type of school.
4. There is no significant difference between the mean scores of Digital Awareness of Secondary Stage Students on the basis of the School Board.

VI. METHODOLOGY

Self – constructed and validated Scale on Digital Awareness has been used for data collection. The researcher used a descriptive survey method. The study aimed to assess Secondary Stage Students’ Digital Awareness using digital technologies. The sample consisted of 480 Secondary Stage Students selected randomly from different Schools of Jharkhand, belonging to JAC, CBSE and ICSE boards.

VII. LEVEL OF DIGITAL AWARENESS OF SECONDARY STAGE STUDENTS

Variables	Range	Level	Number of Responses	Percentage	Mean	SD
Digital Awareness (DA) of Secondary Stage Students (SSS)	89 - 100	Very High	25	5.20%	71.99	9.97
	77 - 88	High	143	29.79%		
	65 - 76	Moderate	207	43.13%		
	53 - 64	Low	91	18.96%		
	41 - 52	Very Low	14	2.92%		
Total			480	100%		

It is inferred from the above table that 5.20% Secondary Stage Students (SSS) have very high level of Digital Awareness, 29.79% of Secondary Stage Students have high level of Digital Awareness, 43.13% of Secondary Stage Students have moderate level of Digital Awareness, 18.96% of Secondary Stage Students have low level of Digital Awareness and 2.92% of SSS have very low level of Digital Awareness.

VIII. DIGITAL AWARENESS OF SECONDARY STAGE STUDENTS

NULL HYPOTHESIS (H₀) 1

There is no significant difference between the mean scores of Digital Awareness of Secondary Stage Students on the basis of gender.

**TABLE NO. 1
GENDER WISE DIGITAL AWARENESS OF SECONDARY STAGE STUDENTS**

Gender	N	Mean	SD	t-value	Level of Significance
Male	240	73.35	10.293	3.006	S
Female	240	70.64	9.46		

(At 0.05 level of significance, the table value of 't' is 1.98)

From the above table, it is inferred that there is a significant difference between the gender. The mean scores of **male students** is **73.35**, while the mean scores of **female students** is **70.64**. Based on the mean scored of both the genders, it is concluded that male students have higher Digital Awareness than female secondary stage students. Hence, the null hypothesis is rejected.

NULL HYPOTHESIS (H₀) 2

There is no significant difference between the mean scores of Digital Awareness of Secondary Stage Students on the basis of Habitat.

**TABLE NO. 2
HABITAT WISE DIGITAL AWARENESS OF SECONDARY STAGE STUDENTS**

Habitat	N	Mean	SD	t-value	Level of Significance
Rural	240	71.60	9.804	- .856	NS
Urban	240	72.38	10.134		

(At 0.05 level of significance, the table value of 't' is 1.98)

From the above table, it is inferred that there is no significant difference between secondary stage students belonging to rural and urban habitats. The mean scores of **rural students** is **71.60**, while the mean scores of **urban students** is **72.38**. Based on the mean scored it is concluded that there is no significant difference between the mean scores of Digital Awareness of Secondary Stage Students on the basis of Habitat. Hence, the null hypothesis is accepted.

NULL HYPOTHESIS (H₀) 3

There is no significant difference between the mean scores of Digital Awareness of Secondary Stage Students on the basis of type of schools.

**TABLE NO. 3
TYPE OF SCHOOLS WISE DIGITAL AWARENESS OF SECONDARY STAGE STUDENTS**

Type of Schools	N	Mean	SD	t-value	Level of Significance
Private	320	73.42	9.721	- 4.508	S
Government	160	69.15	9.875		

(At 0.05 level of significance, the table value of 't' is 1.98)

From the above table, it is inferred that there is a significant difference between the types of Schools. The mean scores of students studying at **private** schools is **73.35**, while the mean scores of students studying at **government** schools is **69.15**. Based on the mean scored of both types of schools it is concluded that students studying at private schools have higher Digital Awareness than students studying at government schools of Secondary Stage Students. Hence, the null hypothesis is rejected.

NULL HYPOTHESIS (H₀) 4

There is no significant difference between the mean scores of Digital Awareness of Secondary Stage Students on the basis of school Board.

TABLE NO. 4
SCHOOL BOARD WISE DIGITAL AWARENESS OF SECONDARY STAGE STUDENTS

Schools Board	N	Mean	SD	t-value	Level of Significance
JAC	160	65.03	8.946	-10.251	S
CBSE	160	74.94	8.341		

(At 0.05 level of significance, the table value of ‘t’ is 1.98)

From the above table, it is inferred that there is a significant difference between the JAC and CBSE Board. The mean scores of **JAC** Board students is **65.03**, while the mean scores of **CBSE** Board students is **74.94**. Based on the mean scored of both School Boards, it is concluded that CBSE Board students have higher Digital Awareness than the JAC Board secondary stage students. Hence, the null hypothesis is rejected.

NULL HYPOTHESIS (H₀) 5

There is no significant difference between the mean scores of Digital Awareness of Secondary Stage Students on the basis of Schools Board.

TABLE NO. 5
SCHOOLS BOARD WISE DIGITAL AWARENESS SECONDARY STAGE STUDENTS

Schools Board	N	Mean	SD	t-value	Level of Significance
JAC	160	65.03	8.946	-11.139	S
ICSE	160	76.02	8.707		

(At 0.05 level of significance, the table value of ‘t’ is 1.98)

From the above table, it is inferred that there is a significant difference between the JAC and CBSE Board. The mean scores of **JAC Board** students is **65.03**, while the mean scores of **ICSE Board** students is **76.02**. Based on the mean scored of both School Boards, it is concluded that ICSE Board students have higher Digital Awareness than the JAC Board secondary stage students. Hence, the null hypothesis is rejected.

NULL HYPOTHESIS (H₀) 6

There is no significant difference between the mean scores Digital Awareness of Secondary Stage Students on the basis of School Board.

TABLE NO. 6
SCHOOL BOARD WISE DIGITAL AWARENESS OF SECONDARY STAGE STUDENTS

Schools Board	N	Mean	SD	t-value	Level of Significance
CBSE	160	74.94	8.341	-1.134	NS
ICSE	160	76.02	8.707		

(At 0.05 level of significance, the table value of 't' is 1.98)

From the above table, it is inferred that there is no significant difference between the CBSE and ICSE Board. The mean scores of **CBSE Board** students is **74.94**, while the mean scores of **ICSE Board** students is **76.02**. Based on the mean scored it is concluded that there is no significant difference between the mean scores of Digital Awareness of Secondary Stage Students on the basis of schools Board. Hence, the null hypothesis is accepted.

IX. FINDINGS OF THE STUDY

On the basis of the obtained data and the results of the study, the researcher has concluded with the following findings:

1. The research found that 5.20% Secondary Stage Students (SSS) have very high level of Digital Awareness, 29.79% of Secondary Stage Students have high level of Digital Awareness, 43.13% of Secondary Stage Students have moderate level of Digital Awareness, 18.96% of Secondary Stage Students have low level of Digital Awareness and 2.92% of SSS have very low level of Digital Awareness.
2. There is a significant difference between the mean scores of Digital Awareness of Secondary Stage Students on the basis of the gender, type of school, and JAC & CBSE And ICSE, whereas there is no significant difference between the mean scores of Digital Awareness of Secondary Stage Students on the basis of Habitat and CBSE and ICSE Board.

X. CONCLUSION

The present study on digital awareness among Secondary Stage Students reveals that students generally possess a moderate to satisfactory level of digital awareness, which reflects their increasing exposure to digital technologies in the current educational environment. The analysis indicates that certain demographic variables such as gender, type of school, school board, and habitat influence digital awareness to varying degrees. In some cases, significant differences were observed, suggesting that access to resources, institutional support, and learning environments play an important role in shaping students' digital competencies. However, in other comparisons, no significant differences were found, indicating a gradual narrowing of the digital divide among students.

The findings further highlight that while students are familiar with basic digital tools and platforms, there remains a gap in higher-order digital skills, such as critical evaluation of online information, safe internet practices, and responsible digital behaviour. Overall, the study underscores that digital awareness is becoming an essential component of students' academic and personal development. It emphasizes the need for structured digital education, integration of technology in teaching-learning processes, and targeted interventions to ensure that all students develop comprehensive digital competencies.

In conclusion, the study suggests that strengthening digital awareness at the secondary stage is crucial for preparing students to effectively participate in the rapidly evolving digital world.

REFERENCE

1. **Azli, N., et al. (2025).** Comparative Analysis of Digital Literacy and 21st-century Skills among University graduates in Malaysia and Indonesia: The role of collaboration, critical thinking, communication, and creativity. *Journal of Nusantara Studies (JONUS)*.
2. **Qiu, Y., Li, L., & Wang, X. (2024).** Quantitative Analysis of Digital Literacy of Secondary and Higher Vocational School Students in the Digital Economy Background - Preliminary Empirical Research Based on 181 Samples from Zhejiang, China. *INTI Journal*.
3. **Rasulova, N.Y., et al. (2024).** The Level of Digital Literacy among Students in Uzbekistan: Assessing Skills and Perspectives. *2024 International Symposium on Computer Science and Educational Technology (ISCSET)*, 1-5.
4. **Saikia, A., & Kumar Choudhary, R. (2024).** Examine the Digital Disparity among High School Students in Chosen Provincialized Higher Secondary Schools and Selected Private Junior Colleges Within the Lakhimpur District of Assam. *International Journal for Multidisciplinary Research*.
5. **Setyarini, S., Salim, H., & Purnawarman, P. (2023).** Higher-Order Thinking Skills (HOTS)-based literacy media: An innovative learning strategy to promote the secondary students' social awareness. *Forum for Linguistic Studies*.
6. **Mohamed Shuhidan, S., et al., (2022).** Influence of Digital Literacy on Learning Engagement among Secondary Students in Malaysia. *Environment-Behaviour Proceedings Journal*.
7. **Nunuk, S., Dewi, R., & Suharno, S. (2020).** Digital learning, Smartphone usage, and digital culture in Indonesia education. *Интеграция образования*, 24(1 (98)), 20-31.