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ATTITUDE TOWARDS DIGITAL COMPETENCE OF HIGH SCHOOL STUDENTS

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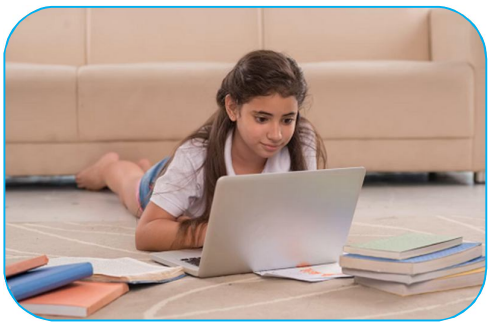
ABSTRACT



The present study investigates the Attitude towards Digital Competence of High School Students in Chennai district. The study employed a normative survey method with a sample of 237 private school students from Chennai district, selected through simple random sampling. The "Attitude towards Digital Competency Scale", a 5-point Likert-type instrument developed and validated by the investigator along with the Research Supervisor Dr. V. Sharmila (2026), was used to measure the attitude. The study reveals that the majority (72.6%) of high school students possess a moderate level of attitude towards Digital Competence. The attitude was examined based on four selected demographic variables: gender, educational qualification of father, educational qualification of mother, and availability of digital device at home. No significant differences in attitude towards Digital Competence were found based on any of the four demographic variables examined. The findings suggest that attitude towards digital competence is a relatively stable disposition among high school students irrespective of gender, parental educational background, and type of digital device available at home.

KEYWORDS: *Digital Competence, Attitude, High School Students, Gender, Parental Education, Digital Devices.*

INTRODUCTION

The rapid integration of digital technologies into education has made digital competence an essential twenty-first-century skill, encompassing the knowledge, skills, and attitudes required for the effective, critical, and responsible use of digital tools. As outlined in the DigComp 2.2 framework, digital competence includes information literacy, communication, content creation, safety, and problem-solving. Developing positive attitudes towards digital competence is crucial among high school students, as it influences their engagement with technology-enhanced learning. Considering the persistent gaps in students' digital competence, this study examines the attitude towards digital competence among high school students and explores its variation across gender, parental educational qualifications, and the availability of digital devices at home.

LITERATURE REVIEW

Sheikh and Nath (2026) conducted an experimental study on promoting teacher training with digital technologies for pre-service teachers' digital competence development in India. The findings

demonstrated that structured digital competence training produced significant positive shifts in both competence levels and attitudes towards technology-enhanced learning environments.

Musood and Kaur (2025) examined digital competence and attitudes toward AI with mindful attention awareness as a mediator. The study found that positive attitudes toward digital learning tools were significantly associated with higher levels of digital competence and technology acceptance among students.

Gnanawilson and Naga Subramani (2023) examined B.Ed. trainees' attitudes towards digital learning and its relationship with classroom behaviour in northern Tamil Nadu. Using validated scales, the study found that trainees with higher digital learning attitudes demonstrated more structured, student-centred, and technology-integrated classroom behaviours during practice teaching. Findings revealed significant variations based on gender, college management type, and prior digital experience, highlighting institutional context as a key determinant of digital competence orientations.

Venkatarathanam and Sharmila (2023) conducted a study on cyber security awareness and digital competence of prospective teachers in selected northern districts of Tamil Nadu. The study reported that while knowledge-based competence varied significantly across demographic variables, attitudes towards digital competence remained relatively consistent across groups, indicating that attitude is a more stable construct than awareness.

Vuorikari et al. (2022) published Dig Comp 2.2: The Digital Competence Framework for Citizens, providing updated examples of knowledge, skills, and attitudes across five competence areas. The framework established that attitudes towards digital competence encompass learners' motivation, self-efficacy, and critical orientation towards digital technologies, and emphasized that these attitudinal components are as important as technical skills in determining digital competence.

Sánchez-Caballé et al. (2020) conducted a systematic literature review of university students' digital competence. The review found that gender, socioeconomic background, and prior digital experience were important contextual factors influencing digital competence development. However, attitudinal measures tended to cluster around moderate positive orientations across most demographic subgroups, suggesting that attitude is broadly distributed across student populations.

NEED FOR THE STUDY

The widespread integration of digital technologies in education highlights the need to understand students' attitudes toward digital competence. A positive attitude encourages effective use of digital tools, which is essential for academic success and future career readiness. As high school students are at a crucial stage of development, fostering favourable attitudes is vital. However, empirical studies on this aspect among Indian high school students remain limited. Examining students' attitudes can help educators, curriculum developers, and policymakers design effective strategies, integrate appropriate technologies, and promote an inclusive, digitally enriched learning environment.

OBJECTIVES OF THE STUDY

1. To find out the level of attitude towards Digital Competence of High School students.
2. To find out the significant difference of attitude towards Digital Competence of High School students based on their demographic variables:

- Gender: Boy / Girl
- Educational Qualification of Father: School Level / Graduate / Post Graduate
- Educational Qualification of Mother: School Level / Graduate / Post Graduate
- Digital Devices at Home: Smartphone / Tablet / Desktop / Laptop

HYPOTHESES OF THE STUDY

1. The level of attitude towards Digital Competence of High School students is low.
2. There is no significant difference between the attitude towards Digital Competence of High School students based on their demographic variables:

- Gender: Boy / Girl
- Educational Qualification of Father: School Level / Graduate / Post Graduate
- Educational Qualification of Mother: School Level / Graduate / Post Graduate
- Digital Devices at Home: Smartphone / Tablet / Desktop / Laptop

METHODOLOGY

The present investigation was undertaken using the normative survey method. Simple random sampling technique was used to conduct this study. The sample consists of 237 students from two private schools in Chennai district, namely Sangford Public School and Montfort Matriculation Higher Secondary School, comprising 151 male and 86 female 9th standard students. The survey method is appropriate for gathering data from a relatively large number of cases at a particular time, enabling the investigator to describe the status of the variable under study and identify differences across demographic sub-groups. The study examined attitude towards Digital Competence across four selected demographic variables: gender, educational qualification of father, educational qualification of mother, and availability of digital device at home.

TOOL USED IN THE STUDY

"Attitude towards Digital Competency Scale", developed and validated by the Investigator along with the Research Supervisor Dr. V. Sharmila (2026), was used as the research tool. The scale was constructed in the form of a Likert-type five-point rating scale, covering key dimensions of digital competence including information literacy, communication and collaboration, digital content creation, online safety, and problem-solving. The tool was piloted, item-analysed, and refined to ensure appropriate reliability and validity before administration for the final study. Scores ranged from a low of 79 to a high of 155, with a mean of 122.09 and a standard deviation of 14.49.

STATISTICAL TECHNIQUES USED

The following statistical techniques were used in this study:
Descriptive Analysis (Mean, Standard Deviation), and
Differential Analysis ('t' test and One-Way ANOVA) at 0.05 level of significance.

FINDINGS OF THE STUDY

Hypothesis 1

The level of attitude towards Digital Competence of High School students is low.

TABLE 1
MEAN AND STANDARD DEVIATION OF ATTITUDE TOWARDS DIGITAL COMPETENCE OF HIGH SCHOOL STUDENTS

S. No	Description	Value
1	Mean	122.09
2	Standard Deviation	14.49
3	Low Score	79
4	High Score	155
5	Sample	237

TABLE 2
LEVEL OF ATTITUDE TOWARDS DIGITAL COMPETENCE OF HIGH SCHOOL STUDENTS

Level	Sample	Percentage
Low	34	14.40
Moderate	172	72.60
High	31	13.00

From the above tables, it is inferred that 72.6% have moderate level, 14.4% have low level, and 13.0% have high level of attitude towards Digital Competence of High School Students. Therefore, the hypothesis is rejected and it is concluded that the attitude towards Digital Competence among High School Students is moderate.

Hypothesis 2
There is no significant difference between the attitude towards Digital Competence of High School students based on Gender.

TABLE 3
TABLE SHOWING DIFFERENCE BETWEEN THE ATTITUDE TOWARDS DIGITAL COMPETENCE OF HIGH SCHOOL STUDENTS BASED ON GENDER

Gender	N	Mean	Standard Deviation	Calculated 't' Value	NS/S
Male	151	122.05	15.58	0.06	NS
Female	86	122.16	12.44		

NS – Not Significant
S – Significant

From the above table, it is shown that the calculated 't' value is found to be 0.06, which is less than the table value (1.96) at the level of significance 0.05%. Hence the null hypothesis is accepted. It is concluded that there is no significant difference between the attitude towards Digital Competence of High School students based on Gender. Both male (Mean = 122.05) and female (Mean = 122.16) students exhibit very similar levels of attitude towards digital competence.

Hypothesis 3
There is no significant difference between the attitude towards Digital Competence of High School students based on Educational Qualification of Father.

TABLE 4
TABLE SHOWING DIFFERENCE BETWEEN THE ATTITUDE TOWARDS DIGITAL COMPETENCE OF HIGH SCHOOL STUDENTS BASED ON EDUCATIONAL QUALIFICATION OF FATHER

Educational Qualification of Father	N	Mean	Standard Deviation	Calculated 'F' Value	NS/S
School Level	93	121.41	13.16	1.03	NS
Graduate	84	123.87	14.59		
Post Graduate	60	120.65	16.22		

NS – Not Significant
S – Significant

From the above table, the calculated 'F' value is found to be 1.03, which is lesser than the table value (3.04) at the level of significance 0.05%. Hence the null hypothesis is accepted. It is concluded that there is no significant difference in the attitude towards Digital Competence of High School students based on the Educational Qualification of Father.

Hypothesis 4

There is no significant difference between the attitude towards Digital Competence of High School students based on Educational Qualification of Mother.

TABLE 5
TABLE SHOWING DIFFERENCE BETWEEN THE ATTITUDE TOWARDS DIGITAL COMPETENCE OF HIGH SCHOOL STUDENTS BASED ON EDUCATIONAL QUALIFICATION OF MOTHER

Educational Qualification of Mother	N	Mean	Standard Deviation	Calculated 'F' Value	NS/S
School Level	93	121.15	12.90	0.41	NS
Graduate	84	122.24	15.02		
Post Graduate	60	123.33	16.12		

NS – Not Significant
S – Significant

From the above table, the calculated 'F' value is found to be 0.41, which is lesser than the table value (3.04) at the level of significance 0.05%. Hence the null hypothesis is accepted. It is concluded that there is no significant difference in the attitude towards Digital Competence of High School students based on the Educational Qualification of Mother.

Hypothesis 5

There is no significant difference between the attitude towards Digital Competence of High School students based on the Availability of Digital Device at Home.

TABLE 6
TABLE SHOWING DIFFERENCE BETWEEN THE ATTITUDE TOWARDS DIGITAL COMPETENCE OF HIGH SCHOOL STUDENTS BASED ON AVAILABILITY OF DIGITAL DEVICE AT HOME

Availability of Digital Device at Home	N	Mean	Standard Deviation	Calculated 'F' Value	NS/S
Smartphone	171	121.73	13.80	1.25	NS
Tablet	22	118.50	20.25		
Desktop	11	123.73	15.36		
Laptop	33	125.79	13.03		

NS – Not Significant
S – Significant

From the above table, the calculated 'F' value is found to be 1.25, which is lesser than the table value (2.64) at the level of significance 0.05%. Hence the null hypothesis is accepted. It is concluded that there is no significant difference in the attitude towards Digital Competence of High School students based on the Availability of Digital Device at Home.

TABLE 7
SUMMARY OF FINDINGS – ATTITUDE TOWARDS DIGITAL COMPETENCE OF HIGH SCHOOL STUDENTS

Variables	Significance	Remarks
Level of Attitude towards Digital Competence	—	Moderate (72.6%)
Attitude based on Gender	NS	No Significant Difference
Attitude based on Educational Qualification of Father	NS	No Significant Difference
Attitude based on Educational Qualification of Mother	NS	No Significant Difference
Attitude based on Digital Device at Home	NS	No Significant Difference

S – Not Significant
S – Significant

CONCLUSION

The present study examined the attitude towards digital competence among high school students in Chennai district and found that most students (72.6%) exhibited a moderate level of attitude, while 14.4% and 13.0% demonstrated low and high levels, respectively. The analysis further revealed no significant differences in students' attitudes based on gender, parents' educational qualifications, or the availability of digital devices at home, indicating that these demographic factors do not substantially influence attitudes towards digital competence. These findings highlight the need for educational initiatives to foster more positive attitudes through digital literacy programmes, technology-integrated teaching, and project-based learning. Additionally, teacher training and curriculum reforms should emphasize digital competence as an essential twenty-first-century skill,

ensuring equal opportunities for all students to develop positive digital attitudes regardless of their background.

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