



# A STUDY OF DIGITAL COMPETENCY OF SECONDARY SCHOOL TEACHERS IN RELATION TO GENDER AND TYPE OF SCHOOL

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## ABSTRACT

The present study was an attempt to investigate digital competency of secondary school teachers in relation to gender and type of school. A data was collected randomly from the sample of 200 secondary school teachers affiliated to JKBOSE of Jammu district. The results revealed that there exists significant difference in digital competency with respect to gender and type of school. Private secondary school teachers found to be better on digital competency as compared to government secondary school teachers. It is further found that digital competency of female secondary school teachers are better on digital competency as compared to male secondary school teachers. The findings indicate that demographic variables, gender and type of school had a substantial impact on secondary school teacher's digital competency.

**Keywords:** digital competency, Jammu district

## Introduction

Education is crucial for achieving full potential and promoting development. The quality of education depends on factors like educational institutions, students, teachers, vision of institute, and administration leadership. Out of these, teachers are key to organizing, guiding, and controlling the teaching process, and their teaching abilities determine the quality of education. According to National Education Policy 2020, "teachers will definitely shape the future of our children and of our nation as well" (NEP, 2020, p.4). In this knowledge based society an individual should be educated so that he can become a wise person and work for welfare of the society. A student centred approach is important to realize the goals of education. Keeping in mind all these concerns, responsibility rest upon the shoulders of teachers. Investment in teacher education can yield very rich dividends in the development of education. It means that teachers will be required to play a significant role in nation development. With the excessive push towards the information age there is a lot of technological and scientific advancement leading to digital revolution. This has resulted in numerous changes in our lives; from communication to dissemination of information, and global economy to digitalisation of learning. Moreover, the sudden transition from traditional face to face instruction to online learning amid the lockdown, has been a great challenge for students and teachers. Due to which majority of teachers and students were left with no other choice but to become skilled in dealing with digital tools. As a result, students as well as teachers experienced stress, anxiety, tension and frustration. This was a matter of great concern to parents, teachers, examination bodies, counsellors and psychologists. This has given rise to new dimensions of imparting knowledge and consequently the role of teacher has increased. The method used in knowledge dissemination has grown exponentially; by replacing the old face to face communication with digital communication, the internet and e-education. The digital revolution has led to changes in communication, global economy, and learning. The transition from traditional face-to-face instruction to online learning during lockdowns has challenged teachers and students, leading to increased digital digital skills. However, teachers face challenges such as lack of technological infrastructure, experience with digital technologies, and lack of online digital skills. Digitizing Education has become the need of the hour.

## Digital Competency

Digital competency is a concept that encompasses technological knowledge and skills, including the ability to use digital technologies effectively in various contexts. It involves more than just using devices and applications, but also the obligation to use them in a proper pedagogical manner. Competency is not limited to cognitive elements but also includes functional aspects, interpersonal characteristics, and ethical values. Digital competency encompasses a wide range of skills and competencies, including technology, computing, literacy, media, information, and communication. It is defined as the confident and critical use of Information Society Technology (IST) for work, leisure, and communication. Alkalai (2004) refers to it as "survival skills in the digital era," while Deursen & Dijk (2010) refers to it as "vital asset in the information society." The European Union has identified digital competency as one of the eight key competencies required for lifelong learning. Digital competency is a multidimensional concept that includes technical, cognitive, and digital skills, metacognitive processes, social, emotional, and ethical awareness related to the use and understanding of digital technologies.

## Need and Significance of the Study

Each stage of education has its own significance but secondary education assume more importance. As observed by Mudaliar Education Commission, 1952-1953 "We must bear in our mind that- Secondary education is a complete unit in itself and not merely a preparatory stage". Therefore, for achieving educational goals at this stage of education, it completely depends on competent and effective teachers. Secondary school teachers plays an important role in our education system. The increasing relevance of technology in every sphere of life makes it increasingly important for teachers to integrate technology into their digital practices for achieving new educational objectives (Tondeur et al., 2017). Teachers are expected to integrate digital technologies to improve the quality of their digital- learning activities. Nowadays, digital competency is characterized as an indicator of quality education in the twenty first-century. Teacher's digital competency includes the set of capacities and skills that result in the adequate use of ICT. Studies on digital competencies reported that in order to sustain digital inclusion, schools need to identify digital deficiencies and digital achievements among teachers. Having digital skills is important for teachers in terms of being aware of the technological developments and integrating these technologies into classroom (Hatlevik and Christophersen, 2013). Only a limited number of studies, including all dimensions of digital competency have been undertaken, and these few studies have been conducted in other countries. For this reason, studies that comprehensively address the digital competencies of the secondary school teachers, and which specifically express the deficiencies of the secondary school teachers are required.

## Review of related literature

On the basis of review of previous studies, it was seen that digital competency of teachers was found to be an indispensable and fundamental element for teachers. (Admiraal et al., 2016; Baz et al., 2018; Cetin, 2021; Falloon, 2020 ; Gumus & Kukul, 2022). Variables like age (Hinojo-Lucena et al., 2019 and Moreno et al., 2020); gender (Roussinos & Jimoyiannis, 2019) and teacher anxiety (Yazar & Keskin, 2016) had a significant effect on using technology in classroom. Further, there was found a positive relationship between digital competency and self confidence and motivation (Djik, 2005); self esteem (Ramakrishna & Phogat, 2017); digital competency ( Fernandez, 2017; Odalen et al., 2019; Singh & Singh 2019); teacher effectiveness and techno pedagogical skills (Kumar & Subramanian, 2022).

On the aspect of gender, it was found that male teachers showed better digital competency as compared to female teachers (Alazam, 2012; Fernández, 2017 and Grande-de-Prado et al., 2020). On the contrary, study by Shipra & Lata (2020) and Caena. F et al. (2020) found that digital competency was higher in females. However, result of Martin et al. (2017); Prieto. J. et al. (2020); Srivastva & Dey (2017); Yovkova & Forsyth (2019) reported that gender has no significant effect on digital competency of teachers.

On the aspect of type of school, Gamez & Fernandez (2022); Palmero et al. (2022); Subramanian (2022) found significant differences in the digital competency of teachers digital in government and private secondary schools. On the contrary, Mahdieh et al. (2019) reported no significant difference with respect to type of school.

Study by Beltran et al. (2020); Farrokhi et al. (2021); Torda (2020) found that there was many disadvantages of using technology while digital as they were less interaction between teacher and student and teachers found it difficult to teach thorough online platform. Further, study of Adov & Maeots (2021); Ertmer et al. (2012); Jwaifell et al. (2019) revealed that mere acquisition of digital skills did not lead to development of digital competency. Chen (2010); Kim (2013); Sanchez (2020); Vongkulluskun et al. (2020) found that teacher's used digital skills differently based on their attitude and willingness. Studies on digital competencies revealed that in order to sustain digital inclusion, schools need to identify digital

deficiencies and digital achievements among teachers (Hatlevik and Christophersen, 2013). Therefore, there was a need to improve teacher's digital competency Basargekar & Singhavi (2017); Lin & Yang (2022); Røkenes & Krumsvik (2014). So the researcher proposes to study digital competency of secondary school teachers.

### Objectives of the study

1. To study the Digital competency of secondary school teachers with respect to gender.
2. To study the Digital competency of secondary school teachers with respect to type of school.

### Hypothesis of the study

1. There will be no significant difference in digital competency of secondary school teachers with respect to gender.
2. There will be no significant difference in digital competency of secondary school teachers with respect to type of school.

### Methodology

The present study uses descriptive method and is quantitative in nature.

### Sample

The sample of 200 secondary school teachers of government and private schools affiliated to Jammu & Kashmir Board of school Education (JKBOSE) was selected for the present study.

### Tool used

The tool for studying digital competency of secondary school teachers was constructed and standardized by the researcher herself.

### Statistical Techniques Used

Appropriate statistical techniques were used to draw out inferences from the data collected for the present study. The following techniques were used in the present study for the analysis and interpretation of data thus collected in the form of quantitative manner:

- Mean
- Standard Deviation
- T- test

## ANALYSIS AND INTERPRETATION OF DATA

### Hypothesis 1

There will be no significant difference in digital competency of secondary school teachers with respect to gender.

**Table No. 1 : Mean, SD and t - values of digital competency of secondary school teachers based on gender.**

| Variable           | Gender | N   | Mean   | SD    | Df  | t-value | Level of Significance |
|--------------------|--------|-----|--------|-------|-----|---------|-----------------------|
| Digital Competency | Male   | 100 | 142.24 | 12.46 | 198 | 3.98**  | Significant           |
|                    | Female | 100 | 152.36 | 12.79 |     |         |                       |

\*\*Significant at .01 level

Table 1 shows the obtained t-value of digital competency of secondary school teachers. The mean score of digital competency of male secondary school teachers is 142.24 with SD 12.46 and female secondary school teachers is 152.36 with SD 12.79. The calculated t-value is 3.98, which is greater than table values 1.96 and 2.58 at .05 and .01 levels of significance. This indicates that there exists significant difference in mean scores of digital competency of male and female secondary school teachers. Female secondary school teachers are better on digital competency as compared to male secondary school teachers.

Hence the hypothesis stating, "There will be no significant difference in digital competency of secondary school teachers with respect to gender" stands rejected.

### Hypothesis 2

There will be no significant difference in digital competency of secondary teachers with respect to type of school.

**Table No. 2 : Mean, SD and t - values of digital competency of government and private secondary school teachers based on type of school.**

| Variable           | Type of school | N   | Mean   | SD    | Df  | t-value | Level of Significance |
|--------------------|----------------|-----|--------|-------|-----|---------|-----------------------|
| Digital Competency | Government     | 100 | 159.77 | 16.85 | 198 | 8.98**  | Significant           |
|                    | Private        | 100 | 175.27 | 3.72  |     |         |                       |

\*\*Significant at .01 level

Table no. 2 shows the obtained t-value of digital competency of government and private secondary school teachers. The mean score of digital competency of government secondary school teachers is 159.77 with SD 16.85 and private secondary school teachers is 175.27 with SD 3.72. The calculated t-value is 8.98, which is greater than table values 1.96 and 2.58 at .05 and .01 levels of significance. This indicates that there exists significant difference in mean scores of digital competency of government and private secondary school teachers. Private secondary school teachers are better on digital competency as compared to government secondary school teachers.

Hence the hypothesis stating, “There will be no significant difference in digital competency of secondary school teachers with respect to type of school” stands rejected.

### Findings of the Study

1. There exists significant difference in mean scores of teaching competency of secondary school teachers with respect to gender. Female secondary school teachers are better on teaching competency as compared to male secondary school teachers.

2. There exists significant difference in mean scores of teaching competency of government and private secondary school teachers. Private secondary school teachers are better on teaching competency as compared to government secondary school teachers.

### Educational Implications

Any research is beneficial and significant to the extent it is focused in solving current educational problems and providing insights for higher levels of performance. The present study provides some valuable inputs to the educational system, teachers, educators, management as well as policy makers for improving teaching competency of teachers. In the modern era of globalization of economies and digitalization in education, there is necessity of enhancing and strengthening digital skill of teachers. This will prepare them to inspire the coming generation through their thoughtful guidance and decisions on educational practices. The result of present study indicates that teachers with better digital competence are more competent than those with lower levels of digital competence. Hence, adequate measures should be taken by the schools, directorates of education and the government at large to provide regular trainings in digital competence to the school teachers. This will not only help make the teachers more effective but also will empower them to guide their students more effectively for online learning and referencing. There should be ICT labs in all schools. Such ICT labs should be operational, and well furnished with updated digital technology, teaching and learning resources, and tutors to support the teachers. Instead of theory paper at the curriculum of B.Ed, practical classes for computer skills must be emphasized.

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