A Study On Digital Competence And Self Regulation Of Perspective Teachers In Selected Northern Districts Of Tamil Nadu

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ABSTRACT

Digital competence is the capability of individual person to carryout a particular activity efficiently in digital atmosphere and it involving in finding, utilizing and disseminating various kind of information in a digital platform. The digital technologies and tools are largely useful for different segments of student community for their effective learning and other academic activities and digital competence is playing a crucial role for students especially prospective teachers in efficient use of them for improving their knowledge, learning and teaching abilities and overall personal development. The findings reveal that significant difference is witnessed amid profile of prospective teachers and their digital competence. The digital competence is having significant, positive and substantial relation with self regulation of prospective teachers. Thus, prospective teachers must acquire needed skills and knowledge and competence in using digital technologies and tools for elevating their digital competence that will be useful for their learning and teaching. Faculty members of Colleges of Education should motivate their prospective teachers to use digital tools and technologies for their class room presentations and teaching during their teaching practices. In addition, prospective teachers should use different digital tools and techniques continuously for all their learning and teaching, personal interactions and communication that will enhance their digital competence.

Key Words: Digital Competence, Prospective Teachers, Self Regulation.

1. INTRODUCTION.

In the present day knowledge driven society, digital tools and technologies are main drivers for growth, innovation and creating opportunities for different people in the world and they are completely changing and improving work culture, communication, studies, availability and accessibility of quality information and pleasure and leisure activities(Gallardo-Echenique et al 2015). People are using various kinds of digital tools and technologies for their different purposes and needs and resources in online platforms facilitate them to generate and share information and interaction with others across the nations in the world (Alam et al 2018).

Digital competence is the capability of individual person to carryout a particular activity efficiently in digital atmosphere(Guzman-Simon et al 2017) and it involving in finding, utilizing and disseminating various kind of information in a digital platform (Ferrari et al 2012). Digital competence is the group of skills, attitude and knowledge which are needed for using information and communication technology and digital platforms to carryout a specific activity (He and Zhu, 2017), solve problems, sharing content, manage, collaborate and communicate information (Spante et al 2018) and generate knowledge efficiently and appropriately, flexibly and ethically for learning (Esteve-Mon et al 2020), job, consumption, leisure and enhancement of knowledge and abilities of individuals.

Further, the digital technologies and tools are largely useful for different segments of student community for their effective learning and other academic activities (Vazquez-Cano et al 2017). The enhancement in learning experience among them requires functional and cognitive abilities, positive attitude, good emotions, motivation and personal vales in the existing digital era (Gudmundsdottir and Hatlevik, 2018). Therefore, development of digital competence among students is necessary for them to face the current digital world. Digital competence dictates the efficient use of digital media for retrieving, analyzing and exchanging information through different digital platforms (Lopez-Meneses et al 2020. Thus, digital competence is playing a crucial role especially for prospective teachers in efficient use of them for improving their knowledge, learning and teaching abilities and overall personal development (Svensson and Baelo, 2015) and it is also related with their self regulation. Therefore, it is essential to study digital competence and self regulation of perspective teachers.

2. LITERATURE REVIEW

Liu (2023) found that the university students' digital competence was in intermediate level and it was differing among them based on number of digital tools used and it was not significantly differing amongst their age, gender and region and it was also related with their personal interest and intensity of using digital tools and technologies.

Coskunserce and Aydogdu (2022) conceded that the digital competence of under graduate students who attended information technology course was higher as compared who did not attend it and male students had superior degree of digital competence than their female counterparts and the difference in digital competence among them was significant.

Zulkarnain et al (2021) revealed that university students had moderate degree of digital competence and they had the lowest competence in creating digital content and they had the highest competence in accessing data and information and it was differing among their gender and faculties.

Cebi and Reisoglu (2020) indicated that pre-service teachers had digital competence at moderate degree and difference in digital competence among gender and their branch was significant and males had higher degree of digital competence in comparison with female pre service teachers.

Lopez-Gil and Bernal-Bravo (2019) showed that students of education had moderate degree of digital competence and it was differing among their gender, educational background and subject and male students had higher degree of digital competence in comparison with female students of education.

Erisen et al (2018) found that teachers of information technology had higher degree of digital competence and male teachers had better level of digital competence than female and the digital competence among male and female teachers was different and significant.

Instefjord and Munthe (2017) concluded that the digital competence of teacher education was in moderate degree and it was weakly and positively related with development support of management and it was positively and strongly related with their self reported efficacy and it was varying among their personal profile variables.

Perez-Escoda et al (2016) revealed that the digital competence among school teachers was low and it was differing among their gender, education, age and experience in teaching. Male teachers were better in digital competence than female school teachers.

Hatlevik et al (2015) indicated that ninth grade students had moderate degree of digital competence and it was varying among their family backgrounds and it was positively and significantly related with their earlier performance and mastery orientation,

Bennett (2014) showed that the digital competence among university teachers was moderate and male had higher degree of digital competence than female university teachers and it was varying across their age, education, gender and use of digital tools and techniques.

3. OBJECTIVES OF THE STUDY

1. To study difference amid digital competence of prospective teachers and their gender, subject group and type of college.
2. To examine difference amid digital competence of prospective teachers and their locality of college, medium of study and monthly family income.
3. To analyze relation amid digital competence and self regulation of prospective teachers.

4. HYPOTHESES OF THE STUDY

1. There is no difference amid digital competence of prospective teachers and their gender, subject group and type of college.
2. There is no significant difference amid digital competence of prospective teachers and their locality of college, medium of study and monthly family income.
3. There is no significant relation amid digital competence and self regulation of prospective teachers.

5. RESEARCH METHODOLOGY

The Chennai, Kancheepuram and Tiruvallur districts of Tamil Nadu state are selected for conducting this study. Prospective teachers are chosen by adopting random sampling method and data are gathered from 975 prospective teachers through structured questionnaire. Percentage analysis is used to understand profile of perspective teachers. t-test and ANOVA tests are employed to analyze difference amid profile of prospective teachers and their digital competence. Correlation analysis is employed to find the relation amid digital competence and self regulation of prospective teachers.

6. RESULTS

6.1. PROFILE OF PROSPECTIVE TEACHERS

The profile of prospective teachers is shown in Table-1.

Table-1. Profile of Prospective Teachers

Profile	**Frequency**	**%**
Gender		
Male	409	41.95
Female	566	58.05
Subject Group		
Arts	277	28.41
Science	698	71.59
Type of College		
Government	98	10.05
Government Aided	326	33,44
Private	551	56.51
Locality of College		
Urban	537	55.08
Rural	438	44.92
Medium of Study		
Tamil	371	38.05
English	604	61.95
Monthly Family Income		
Less than Rs.30,000	265	27.18
Rs.30,001 – Rs.40,000	356	36.51
Rs.40,001 – Rs.50,000	221	22.67
More than Rs.50,000	133	13.64

The results show that 58.05% of perspective teachers are females, whilst, 41.95% of them are males, 71.59% of them are belonging to science group, whilst, 28.41% of them are belonging to arts group and 56.51% of them are studying in private colleges, whilst, 10.05% of them are studying in Government college.

The results also indicate that 55.08% of them are studying in colleges located in urban area, whist, 44.92% of them are studying in colleges located in rural area, 61.95% of them are studying in English medium, whilst, 38.05% of them are studying in Tamil medium and 36.51% of them are having family income of Rs.30,001 – Rs.40,000, whilst, 13.64% of them are having family income of more than Rs.50,000 per month.

6.2. PROFILE OF PROSPECTIVE TEACHERS AND DIGITAL COMPETENCE

The difference amid profile of prospective teachers and their digital competence is shown as below.

6.2.1. Gender and Digital Competence

The difference amid gender of prospective teachers and their digital competence is shown in Table-2.

Table-2. Gender and Digital Competence

Gender	N	Mean	SD	t-value	Sig.
Male	409	124.78	13.51	4.496	0.01
Female	566	130.82	24.66		

Female prospective teachers (Mean=130.82) are having higher degree of digital competence than male prospective teachers (Mean=124.78). The t-value of 4.496 is explaining that significant difference is witnessed amid gender of prospective teachers and their digital competence.

6.2.2. Subject Group and Digital Competence

The difference amid subject group of prospective teachers and their digital competence is shown in Table-3.

Table-3. Subject Group and Digital Competence

Subject Group	N	Mean	SD	t-value	Sig.
Arts	277	122.22	13.82	5.791	0.01
Science	698	130.69	22.72		

Prospective teachers in science group (Mean=130.69) are having higher degree of digital competence than prospective teachers in arts group (Mean=122.22). The t-value of 5.791 is explaining that significant difference is witnessed amid subject group of perspective teachers and their digital competence.

6.2.3. Type of College and Digital Competence

The difference amid type of college of prospective teachers and their digital competence is shown in Table-4.

Table-4. Type of College and Digital Competence

Type of College	N	Mean	SD	F-value	Sig.
Government	98	137.09	26.94	16.259	0.01
Government Aided	326	130.52	23.35		
Private	551	125.40	17.34		

Prospective teachers studying in Government colleges (Mean=137.09) are having higher degree of digital competence than Government aided (Mean=130.52) and private colleges (Mean=125.40). The F-value of 16.259 is explaining that significant difference is witnessed amid type of college of prospective teachers and their digital competence.

6.2.4. Locality of College and Digital Competence

The difference amid locality of college of prospective teachers and their digital competence is shown in Table-5.

Table-5. Locality of College and Digital Competence

Locality of College	N	Mean	SD	t-value	Sig.
Urban	537	123.93	16.81	7.832	0.01
Rural	438	133.62	24.05		

Prospective teachers studying in rural colleges (Mean=133.62) are having higher degree of digital competence than prospective teachers studying in urban colleges (Mean=123.93).The t-value of 7.832 is explaining that significant difference is witnessed amid locality of college of prospective teachers and their digital competence.

6.2.5. Medium of Study and Digital Competence

The difference amid medium of study of prospective teachers and their digital competence is shown in Table-6.

Table-6. Medium of Study and Digital Competence

Medium of Study	N	Mean	SD	t-value	Sig.
Tamil	371	123.45	15.26	5.743	0.05
English	604	131.25	23.27		

Prospective teachers studying in English Medium (Mean=131.25) are having higher degree of digital competence than prospective teachers studying in Tamil Medium (Mean=123.45). The t-value of 5.743 is explaining that significant difference is witnessed amid medium of study of prospective teachers and their digital competence.

6.2.6. Monthly Family Income and Digital Competence

The difference amid monthly family income of prospective teachers and their digital competence is shown in Table-7.

Table-7. Monthly Family Income and Digital Competence

Monthly Family Income	N	Mean	SD	F-value	Sig.
Less than Rs.30,000	265	145.05	28.53	102.983	0.01
Rs.30,001 – Rs.40,000	356	123.09	14.08		
Rs.40,001 – Rs.50,000	221	120.96	11.84		
More than Rs.50,000	133	120.98	7.65		

Prospective teachers having monthly family income of less than Rs.30,000(Mean=145.05) are having higher degree of digital competence than Rs.30,001 – Rs.40,000(Mean=123.09), more than Rs.50,000(Mean=120.98) and Rs.40,001 – Rs.50,000(Mean=120.96). The F-value of 102.983 is explaining that significant difference is witnessed amid monthly family income of prospective teachers and their digital competence.

6.3. RELATION AMID DIGITAL COMPETENCE AND SELF REGULATION OF PROSPECTIVE TEACHERS

The relation amid digital competence and self regulation of prospective teachers was studied by using correlation analysis and the result is shown in Table-8.

Table-8. Digital Competence and Self Regulation of Perspective Teachers

Particulars	Correlation Coefficient
Digital Competence and Self Regulation of Prospective Teachers	0.541**

** Significance in 1% level

The coefficient of correlation amid digital competence and self regulation of prospective teachers is 0.541 and it discloses that they have significant, positive and substantial relation among them.

7. CONCLUSION

The above study elucidates that significant difference is witnessed amid profile of prospective teachers and their digital competence. The digital competence is having significant,

positive and substantial relation with self regulation of prospective teachers. Thus, prospective teachers must acquire needed skills and knowledge and competence in using digital technologies and tools for elevating their digital competence that will be useful for their learning and teaching. Faculty members of Colleges of Education should motivate their prospective teachers to use digital tools and technologies for their class room presentations and teaching during their teaching practices. In addition, prospective teachers should use different digital tools and techniques continuously for all their learning and teaching, personal interactions and communication that will enhance their digital competence.

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