Technical Media Competence of Propsective Teachers

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Abstract
The 21st century teaching and training demands the high end use of technology enabled tools to teach students the needed knowledge and skills essential for them to be equipped for today's growing modern world. Hence, through a special teacher training program, a multifaceted impact can be brought about on student learning. This special training increases the technical media competence of the teachers in social media and as a result, they become proficient in handling the technological resources which includes all the virtual media platforms that serve helpful in student learning and hence in their professional development. The present study aims at studying the effectiveness of technical media competence of the prospective teachers, in employing social media for the efficient transaction of curriculum through innovative methods of teaching and training. By taking into consideration the nature of the problem under study, it was decided to adopt survey methods for collecting data. The population for the present study was the prospective teachers from different colleges of teacher education in Kerala. The tool developed was a competence scale for measuring the technical media competence in the effective usage of social media in teaching. The study revealed that the technology plays a major role in shaping the teaching and training techniques of the prospective teachers in the 21st century. It also revealed that there are significant differences in the technical media competence of prospective teachers in using social media with respect to gender and type of management of the institution.

Keywords: Technical media competence, prospective teachers

1. Introduction

The 21st century teaching and training demands the high end use of technology enabled tools to teach students the needed knowledge and skills essential for them to be equipped for today's growing modern world. A major technological shift is happening round the globe in the present century that is directly and linearly proportional to the educational system. This shift is to be positively looked upon by each and every country to bring in effective changes in the teaching/learning platform, and to equip the pedagogues with necessary skills that will help them for molding up a technology based society in blood and bones. Such a molding up is possible in the present day society through social media platforms and other digital technologies, which serve as powerful pedagogical resources in the modern industrialized economy. Hence, through a special teacher training program in the effective use of this technology, teachers can create a multifaceted impact on the student learning. This special training increases the technical media competence of the teachers in social media and as a result, they become proficient in handling the technological resources, which includes all the virtual media platforms that serve helpful in student learning and hence in their professional development. Thus the 21st century digital classrooms can build up a great impact over the traditional methods of teaching and training.

The present study thus aims at studying the effectiveness of technical media competence of the prospective teachers in employing social media for the efficient transaction of curriculum through innovative methods of teaching and training.

2. Literature Review

Social media for learning by means of ICT (UNESCO 2011) suggests that the first step needed is to let teachers explore the potentials of social media and gradually test-drive some of their benefits in classroom exercises. This will illustrate for teachers the effects of social media on learning, rather than illustrate for students how they may benefit from them. Inherent to social media is the tendency to improve the learning atmosphere rather than the direct instruction.

UNESCO ICT competency framework for teachers (2011) emphasizes that it is not enough for teachers to have ICT competencies and be able to teach them to their students. Teachers need to be able to help the students become collaborative, problem solving, creative learners through using ICT so they will be effective citizens and members of the workforce. The Framework therefore addresses all aspects of a teacher's work: The Framework is arranged in three different approaches to teaching (three successive stages of a

teacher's development) among which the first is Technology Literacy, enabling students to use ICT in order to learn more efficiently. Knowledge Deepening and Knowledge Creation are the other two approaches"

Zwaneveld & Bastiaens (2010) in their research study entitled ICT competences of the teacher: About supporting learning and teaching processes with the use of ICT concluded that the term 'media' means that it is about means that support the teachers' main professional task in the classroom: supporting the learning processes of the students by his or her teaching. The technical media competence is the skilled use of the media. Critical competences are responsibly selecting in order to design and coach teaching-learning arrangements. These competencies are essential for the enhancement of teaching learning processes.

Smith & Greene (2013) in their research paper entitled Pre-Service Teachers Use E-learning Technologies to Enhance Their Learning indicate mixed results regarding the use of e-learning to prepare pre-service teachers in learning to teach. Over half of the pre-service teachers (56%) strongly agreed or agreed that e-learning had improved their teaching during their practicum experience. 63% posted that feedback from peers and professors improved the delivery of their les-sons and that viewing the video clips improved their teaching.

2.1. Problem Statement

Zwaneveld & Bastiaens (2010) in their research study entitled ICT competences of the teacher: About supporting learning and teaching processes with the use of ICT says that the 21st century teaching and training requires the skilled use of media for the efficient transaction of curriculum through the apt and appropriate media. Social media for learning by means of ICT (UNESCO 2011) had put forward many recommendations for the digital inclusion in the curriculum transaction. For the proper and enhanced student learning in the present century, UNESCO says that it is very much essential to incorporate the social media and virtual learning networks in curriculum transaction. Hence the analyzed literature indicated the need and relevance of the problem chosen in the present study. The study entitled "Technical media competence of prospective teachers" explores the effectiveness of technical media competence of the prospective teachers in employing social media for the efficient transaction of curriculum through innovative methods of teaching and training.

3. Methodology

The main purpose of the study is to find out the technical media competence of the prospective teachers in the effective usage of the social media for teaching. By taking into consideration the nature of the problem under study, it is decided to adopt survey method of collecting data.

3.1. Rationale

The present day world requires skilled and able teachers who can handle their class effectively and efficiently in an interactive fashion through the help of technology. This interaction gets in to action through the fastest media connecting networks which serve as a powerful pedagogic resource in this digital era. Thus, the level of ICT literacy and media competence of the teacher is crucial in determining the success of teaching learning processes in schools.

The paper thus discusses the necessary technical media competencies of the prospective teachers in employing social media for efficient teaching and learning.

3.2. Objectives of the Study
- To find out the level of technical media competence of the prospective teachers in the effective usage of social media in teaching.
- To find out the significant difference in the mean scores of technical media competence among prospective teachers in the effective usage of social media in teaching for the sub-samples based on gender, type of management and subject of specialization.

3.3. Hypotheses Formulated for the Study
- There exist different levels of technical media competence among the prospective teachers in the effective usage of social media in teaching
- There exists significant difference in the mean scores of technical media competence among prospective teachers in the effective usage of social media in teaching for the sub-samples based on gender, type of management and subject of specialization.

4. Population and Sample

The population for the present study consisted of prospective teachers studying in various colleges of teacher education in Kerala.

The total sample for the present study consists of 740 teacher trainees. To obtain sample representatives of its population, the investigator follows simple random sampling technique on various teacher education colleges of Palakkad and Thrissur and Malappuram district in Kerala.

5. Tool: Technical Media Competence Scale
The investigators constructed and standardized a competence scale for measuring the technical media competence of the prospective teachers in the effective usage of social media in teaching viz.; technical media competence scale. It is a five point scale with alternatives, Strongly Agree, Agree, Undecided, Disagree and Strongly Disagree.

6. Analysis and Interpretations
The number and percentage of the college students with different levels (high, average, low) of technical media competence is worked out and presented under this section.
The results of the analysis are presented in the Table 1.

Sl.No:	Technical Media Competence in Social Meda	Category	n	%
		High	124	16.757
	Technical Media Competence	Average	511	69.054
		Low	105	14.189

Table 1: Levels in technical media competence of prospective teachers studying in different training colleges under Calicut University

It is seen from the Table 1 that the majority of the prospective teachers studying in Government, Aided, University teacher education centre and Self financing training colleges under University of Calicut have an average level of technical media competence in the effective usage of social media in teaching. Most of them can effectively use social media platforms for efficient teaching and learning purpose. Analyzing the variable percentage wise it is found out that the Technical Media Competence is possessed by an average of 69.054%, high level of about 16.757% and a low level of about 14.189% prospective teachers.
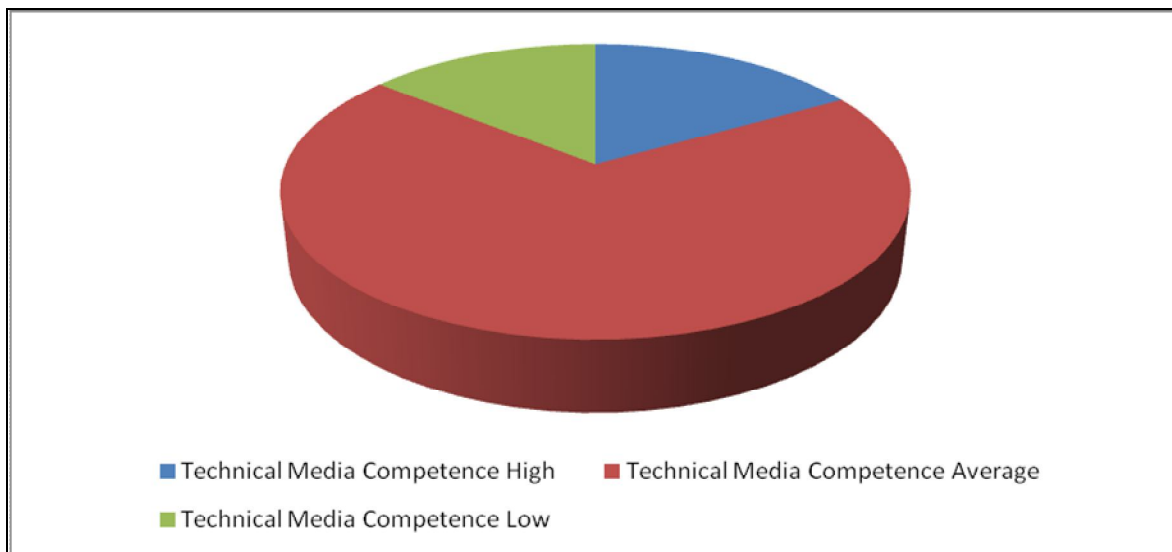The pie diagram of the technical media competence based on the total sample is shown in the below Figure 1

Figure 1: Pie diagram of the technical media competence based on the total sample.

Analysis of the two tailed test of significance of difference between mean scores of technical media competence in social media for the sample based on gender
The result of the analysis of significance of difference in the mean scores of technical media competence in the effective usage of social media in teaching among male and female prospective teachers in government, self financing, university centre and aided training colleges are presented in the Table 2.

Variable	Gender	n	Mean	SD	t
Technical media competence	Male	34	60.06	7.973	3.045*
	Female	706	56.12	7.336	

Table 2: Data and result of the significance of difference in the mean scores of technical media competence in the effective usage of social media in teaching among male and female prospective teachers in government, university centre, self financing and aided training colleges.
* Indicates significance at 0.01 level

Results from the Table 2 shows that the calculated value of critical ratio in technical media competence is significant. Analyzing the result, it can be found out that the technical media competence has a calculated value of critical ratio 3.045 and is greater than 1.96 and 2.58 at the 0.05 and 0.01 levels of significance respectively. The average performance of male prospective teachers (M= 60.06, SD= 7.973) are greater than the average performance of the female prospective teachers (M= 56.12, SD= 7.336). The results are presented in the bar diagram as shown below:
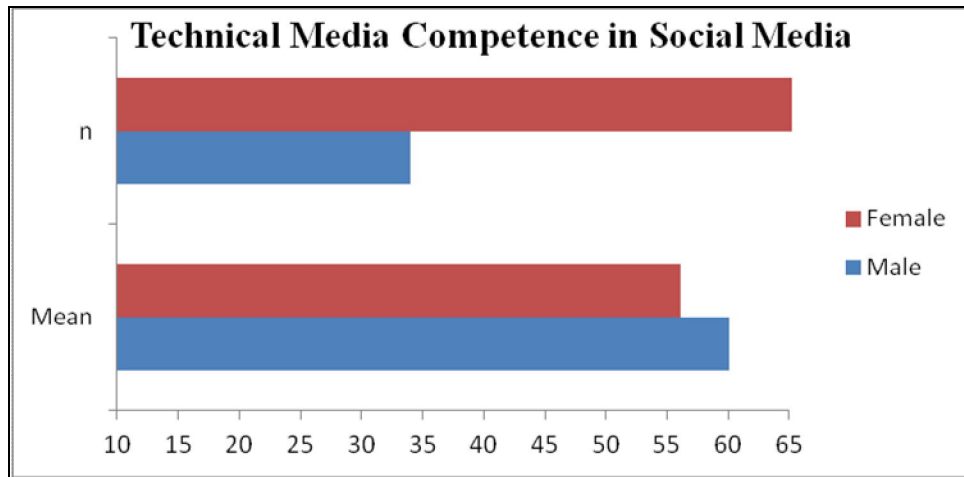

Figure 2

n denotes the number of prospective teachers

Figure 2 Bar diagram of technical media competence based on the total sample.

Analysis of the test of significance of difference between mean scores of each of the dimension of social media competence of the sample based on the subject of specialization.

Data and results of the test of significance of difference between the mean scores of technical media competence of prospective teachers in the usage of social media foe effective teaching based on the subsample subject of specialization is represented in the Table 3.

Variable	Groups	Sum of squares	df	Mean squares	F	p
Technical media competence	Between groups	552.25	5	110.45		
	Within groups	39989.54	734	54.48	2.02	NS
	Total	40541.79	739			

Table 3: Data and results of the test of significance of difference between mean scores of technical media competence of prospective teachers based on the subsample subject of specialization.

NS indicates not significant

Above table shows that the calculated value of F namely, 2.027 of technical media competence is lesser than the table value 3.05 at the 0.01 level of significance. It means that there exists no significant difference in the technical media competence of prospective teachers studying in aided, government, university centre and self financing training colleges under Calicut University with respect to subject of specialization in the effective usage of social media for teaching purposes.

Analysis of the test of significance of difference between mean scores of technical media competence of the sample in the effective usage of social media for teaching based on the type of management of the respective colleges.

Data and result of test of significance of difference between mean scores of technical media competence of the prospective teachers studying in the aided, university teacher education centre, government and self financing training colleges of Calicut University based on the subsample type of management in the effective usage of social media for teaching purposes is represented in the Table 4.

Variable	Groups	Sum of squares	df	Mean squares	F	p
Technical media competence	Between groups	847.94	3	282.64		
	Within groups	39693.85	736	53.93	5.24	p< .05
	Total	40541.79	739			

Table 4: Data and result of test of significance of difference between mean scores of technical media competence of the prospective teachers in the effective usage of social media for teaching based on the subsample type of management.

The Table 4 shows that the calculated value of F in technical media competence is 5.241 which is greater than the table value 2.62 at 0.05 level of significance. It means that there exists significant difference in technical media competence of prospective teachers studying in the aided, centre, government and self financing training colleges of Calicut University with respect to the type of management of their colleges in the effective usage of social media for teaching purposes. For knowing the difference in the technical media competence of prospective teachers for the subsamples based on their institution's type of management, Scheffie post-hoc analysis was used.

Sl.No:	Management types	Mean difference
1	Aided(M=57.75)/Centre	1.636*
2	Aided/Government(M=55.40)	2.352*
3	Aided/Self financing(M=55.20)	2.552*
4	Centre(M=56.12)/Government	0.716
5	Centre/Self financing	0.985
6	Government/Self financing	0.200

Table 5: Data and results of multiple comparison of Scheffie post-hoc test Technical Media Competence
* indicates the significance at 0.05 level

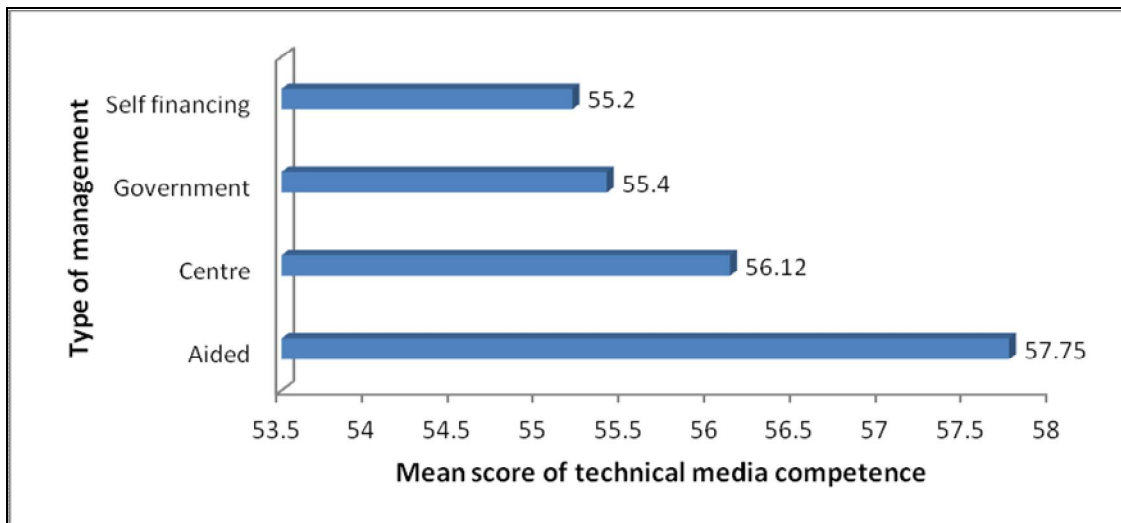This can be interpreted graphically as shown in the Figure below

Figure 3: Bar diagram showing the technical media competence of the prospective teachers in the effective usage of social media for teaching based on the subsample type of management.

From the Table 5, It can be seen that the technical media competence of prospective teachers in the effective usage of social media for teaching purposes have a significant difference between aided/government aided/centre and aided/self financing management types with a value of 2.352, 1.636 and 2.552 respectively. This result indicates that these management types are having a significant difference in this competence for the effective usage of social media for teaching and educational purposes. Also the mean difference of the different groups viz; centre/government, centre/self financing and government/self financing are respectively 0.716, 0.916 and 0.200. This suggests that there exists no significant difference between these groups. It is evident from the table 5, that the aided management is having the highest mean of 57.75.

7. Conclusions and Major Findings
Since the found result showed that there exist different levels in technical media competence in the usage of social media for effective transaction of teaching and training, the hypothesis 1 was fully substantiated.
Since the results proved that there exists significant difference in the mean scores of technical media competence in the effective usage of social media for teaching and training, with respect to the chosen subsamples viz, Gender, Subject of specialization and Type of management, the hypothesis 2 was partially substantiated.

7.1. Major Findings
The different statistical analysis enabled the investigator to summarize the major findings of the study as follows.

i. It was seen that the majority of the prospective teachers studying in Government, Aided, University Centre and Self financing training colleges under University of Calicut have an average level of 69.054% technical media competence in using the social media effectively for teaching and training purposes, high level of about 16.757% and low level of about 14.189%.

ii. It was seen that there exist a significant difference in technical media competence in the effective usage of social media for teaching purposes between male and female prospective teachers. The average performance of male prospective teachers (M= 60.06, SD= 7.973) are greater than the average performance of the female prospective teachers (M= 56.12, SD= 7.336).

iii. It was seen that there exist no significant difference in the technical media competence of prospective teachers studying in aided, government, university centre and self financing training colleges under Calicut University with respect to subject of specialization in the effective usage of social media for teaching purposes.

iv. It was seen that the technical media competence of prospective teachers in the effective usage of social media for teaching purposes have a significant difference between aided/government aided/centre and aided/self financing management types with a value of 2.352, 1.636 and 2.552 respectively. This result indicates that these management types are having a significant difference in this competence for the effective usage of social media for teaching and educational purposes. It is evident from the table 5, that the aided management is having the highest mean of 57.75

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