



TECHNICAL SKILLS AMONG THE TEACHER TRAINEES

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Abstract

Technical skills are the skills that are required to use technology. Technology is referred to as the combination of art and science, which also may concern the ability to use scientific knowledge in an artistic way. In the field of education, the presentation of knowledge/information is much more important than having the concepts or content within and nowadays technology has enormously changed the concept of presenting knowledge. It actually increases the efficiency of presentation, especially in the field of education. Since the 19th century, we are using technology in the field of education to make it easier, more interesting, and more effective. Several theories and concepts of psychology and technology are being used for better results. So, it becomes necessary for the students of teacher education that they should have the skills which may help them to present their knowledge or information in an effective manner and technology may be a concern as the only path by which they can do it. Therefore, the present study was conducted on 150 teacher trainees from different colleges/institutes affiliated with HNB Garhwal University, Srinagar Uttarakhand. In this descriptive research, a self-made questionnaire was used to identify the technical skill level of teacher trainees through a google form. In this paper, we have discussed the level of technical skills among the teacher trainees in the context of gender, subject stream, habitation, and educational institutions.

Keywords: *Technical skills, Teacher trainees*



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Introduction

The new education policy 2020, which is an inclusive framework mainly focused on the interplay of education and technology from basic pre-primary to higher education. The policy emphasizes training teachers to become online content creators, developing and

implementing the online test, and developing technological and pedagogical standards for online teaching-learning. To achieve these objectives, it is very important that teachers should have the technical skills to prepare themselves for the future plan of digital education. In this direction, the development of technical skills is the main issue for Indian educational policies. Policies always emphasize having the opportunity to build and develop technical skills among the students in their learning environment. During the covid-19 pandemic, technology has enormously impacted the education sector which important role played by technology in fulfilling the teaching-learning objectives in online mode. For online teaching, technology provided teachers with various tools and platforms like google meet, zoom, google classroom, Edmodo, etc to support students' learning. These tools help students' active participation in the learning process. If teachers had not effectively integrated technology into the teaching-learning process, it was not easy to conduct online classes, develop content, organize online activities, etc. If teachers are skilled in technology, students' learning will be more meaningful and enjoyable. Students also collaborate with their classmates through technological applications. Technical skills also include the ability to analyze data, operate computers, create content, navigate working platforms and applications, and use devices properly. Dreyfus's model of skill acquisition given by Zeeman (2019), focused on assessing the learner's level of skills development from direct practice and instructions who are learning something new. This model assumes the level of skills competency of an individual. There are five different phases mentioned in this model novice, advanced beginner, competent, proficient, and expert.

In this study, these model phases have been used to describe the level of technical skills among pupil-teachers. Out of these five phases of the model, the study explains technical skills level in three phases namely novice, proficient, and expert level. The first phase called a novice, explains a low level of technical skills with minimum knowledge in the learner. Learner of this phase has little knowledge of how to deal with technical issues and have very less experience in the technical field. Learner of this level needs more guidance and training to perform specific tasks. The second level namely proficient means those who are able to take full responsibility for their own technical work or according to the need of different tasks. Learners of this level show confidence in dealing with technical problems and have a deep understanding of technical practices but sometimes it remains unclear how to handle a particular task. Proficient-level learners are more advanced than novice-level. The third and more advanced level is the expert level. An expert phase of this model explains the extensive experience of discipline and area

of practice. The individual at this stage does not need guidance and supervision to execute any technical task. This model expects that the individual with expert-level skills has analytic skills to evaluate new situations and explore the situation using their prior knowledge of a particular task. These advanced-level individuals have the character of intuition to find the most appropriate solutions. These levels of skill acquisition show the individual's knowledge, skills, experience, and competency in a particular discipline.

The present study analyses teacher trainees' technical skills using these phases of skills acquisition. The study will help in knowing the level of technical skills among the teacher trainees so that future teacher trainees are prepared for techno-based learning as communicated by the new educational policy. Therefore, the present research was taken in hand to analyze the current level of technical skill among the teacher trainees and to describe the knowledge and experience of the technical skills in teacher education. There are several research available in the literature related to technology uses and impacts on quality of life but no study found focused on the level of technical skills among teacher trainees. The study will be helpful to understand the current level of technical skills among the teacher trainees.

Methodology

For the study, the descriptive survey method was used. The study was conducted on the students who are studying in B.Ed. teacher training institutions and colleges affiliated with HNB Garhwal University Srinagar. A sample of 150 students was selected by stratified random sampling techniques from the institutes and colleges of the teacher training program. The data was collected from the hilly and plain areas, government, and private institutions through an online google form. A self-made questionnaire was used to measure the technical skill level of the teacher trainees. It measures three levels of technical skills namely Novice, Proficiency, and Expert. Respondents had to categorize themselves by selecting any one level from the given three levels of technical skill. For analysis and interpretation of the received data, the cross-table calculation was used and categorization of the technical skills was done based on the total score percentage gained at a particular skill level by the respondents. Out of 150 forms, only 123 completely filled forms are considered for analysis.

Results and Discussion

Categorization of Teacher Trainees

Table-1: Classification of Teacher Trainees on the basis of their Technical Skills.

Variable	N	Levels of Technical Skill		
		Novice	Proficient	Expert
Teacher Trainees	123	73	46	4
%	100	59.3	37.4	3.3

Table-1 presents the categorization of teacher trainees on the basis of their level of technical skills as novice, proficient, and expert. The table reveals that the total number of respondents was 123 out of which 73 (59.3%) were found at the novice level, 46 (37.4%) were observed at the proficient level and only 4 (3.3%) were categorized at the expert level of technical skills. The result clearly indicates that the maximum number of teacher trainees was found at the novice level of technical skill followed by the proficient level and very few are obtained at the Expert level (Fig.-1).

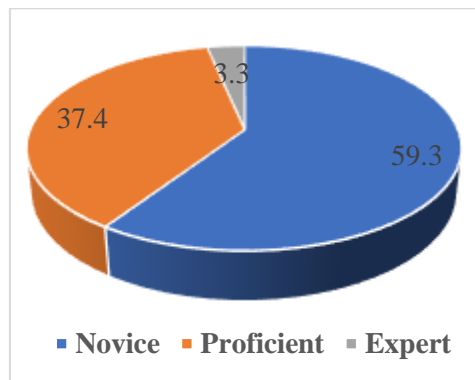


Fig-1: Level of Technical Skills among the Teacher Trainees

Table-2: Categorization of Male and Female Teacher Trainees.

Gender	N	Level of Technical Skills					
		Novice		Proficient		Expert	
		N	%	N	%	N	N %
Male	44	29	65.9%	14	31.8%	1	2.27%
Female	79	44	55.6%	32	40.5%	3	3.79%

Table- 2 reflects the categorization of male and female teacher trainees on the basis of their level of technical skills as novice, proficient, and expert. The table reveals that from the total number of respondents, 44 were males and 79 were females. Out of 44 male teacher trainees, 29 (65.9%) were found at the novice level, 14 (31.8%) were observed at the proficient level

and only 1 (2.27%) was categorized at the expert level of technical skills. In case of female teacher trainees, out of 79 female teacher trainees, 44 (55.6%) were found at the novice level, 32 (40.5%) were observed at the proficient level and only 3(3.79%) were categorized at the expert level of technical skills. The result clearly indicates that the maximum numbers of male and female teacher trainees were found at the novice level of technical skill followed by the proficient level and very few are obtained at the Expert level (Fig.-2 and Fig.-3). Apart from this, the number of male teacher trainees was found to be more than that of females at novice level of technical skill whereas, at the proficient level, the number of female teacher trainees was found more as compared to male trainees. Similarly, females were found to be more in comparison to males at the expert level.

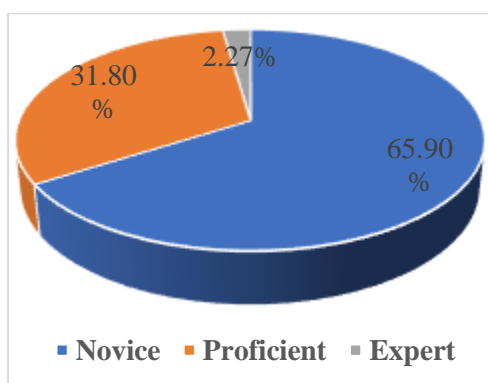


Fig-2: Level of Technical Skills among the Male among the Teacher Trainees

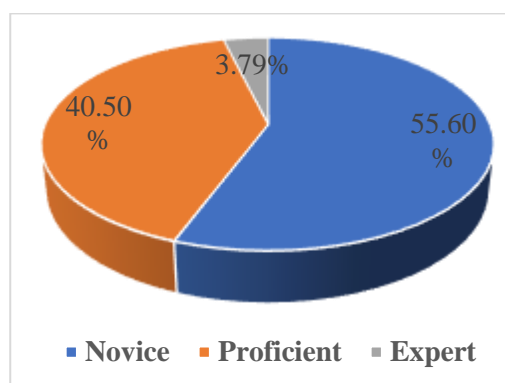


Fig-3: Level of Technical Skills Female Teacher Trainees

Table-3: Categorization of Art, Science, and Commerce Teacher Trainees

Subject Stream	N	Level of Technical Skills					
		Novice		Proficient		Expert	
		N	N %	N	N %	N	N %
Art	54	34	62.9%	20	37.0%	0	0.0%
Science	63	38	60.3%	22	34.9%	3	4.7%
Commerce	6	1	16.6%	4	66.6%	1	16.6%

Table- 3 depicts the categorization of Art, Science, and Commerce teacher trainees on the basis of their level of technical skills. The table reveals that out of total number of respondents, the number of arts, science, and commerce teacher trainees studied were 54, 63, and 6 respectively. Out of 54 Arts teacher trainees, maximum, 34 (62.9%) were found at the novice level, followed by 20 (37.0%), observed at the proficient level and none was found at the expert level. In case of science teacher trainees, out of 63 Science teacher trainees, 38 (60.3%) were found at the

novice level, 22 (34.9%) were observed at the proficient level and only 3 (3.7%) were categorized at the expert level whereas, out of 6 commerce teacher trainees studied, only 1 (16.6%) was found at the novice and expert levels, and 4 (66.6%) were observed at the proficient level. The result shows that the maximum numbers of Arts and Science, were found at the novice level of technical skill followed by the proficient level, and very few are obtained at the Expert level (Fig.-4 and Fig.-5) whereas, maximum numbers of commerce teacher trainees were found at proficient level. Apart from this, the numbers of Arts teacher trainees were found more as compared to Science and Commerce teacher trainees at novice level. But the numbers of Commerce teacher trainees is found more than Arts and Science teacher trainees (Fig.- 6).

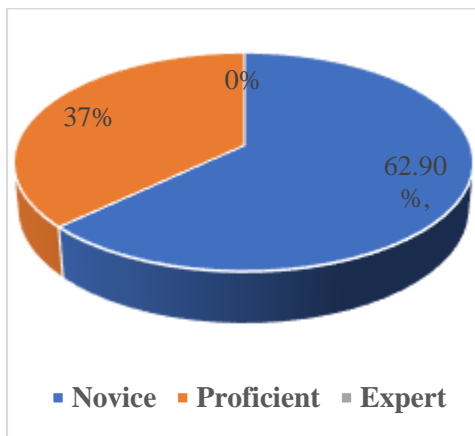


Fig-4: Level of Technical Skill among the Art Stream Teacher Trainees

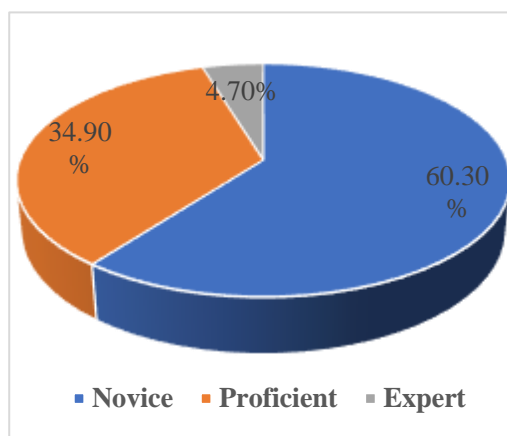


Fig-5: Level of Technical Skill among the Science Stream Teacher Trainees

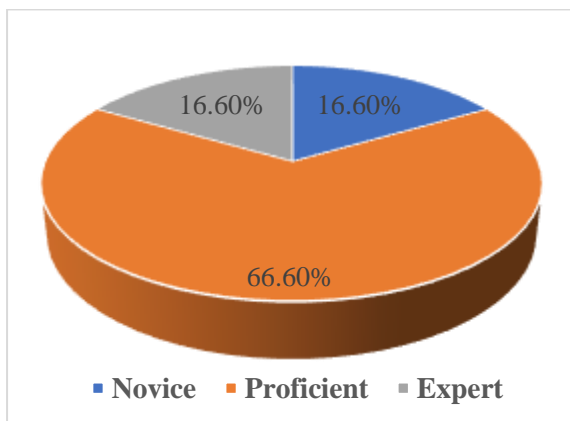


Fig-6: Level of Technical Skill among the Commerce Teacher Trainees

Table-4: Categorization of Teacher Trainees of Hill and Plain Areas

Habitation	N	Level of Technical Skills					
		Novice		Proficient		Expert	
		N	%	N	%	N	%
Hill	61	41	67.2%	19	31.1%	1	1.6%
Plain	62	32	51.6%	27	43.5%	3	4.8%

Table- 4 presents the classification of teacher trainees residing in Hill and Plain areas on the basis of their level of technical skills as novice, proficient, and expert. The table reveals that out of the total number of respondents studied, 61 teacher trainees were from hill area and 62 teacher trainees were from plain area. Out of 61 teacher trainees of hill area, 41 (67.2%) were found at the novice level, 19 (31.1%) were observed at the proficient level and only 1 (1.6%) was categorized at the expert level. Whereas, out of 62 teacher trainees of plain area, 32 (51.6%) were found at the novice level, 27 (43.5%) were observed at the proficient level and only 3 (3.7%) were categorized at the expert level of technical skills. The result depicts that the maximum numbers of teacher trainees of Hill and Plain areas were found at the novice level followed by the proficient level and very few are obtained at the Expert level. The teacher trainees of plain area performed better at all the three levels as compared to teacher trainees of hill area (Fig.-7 and Fig.-8).

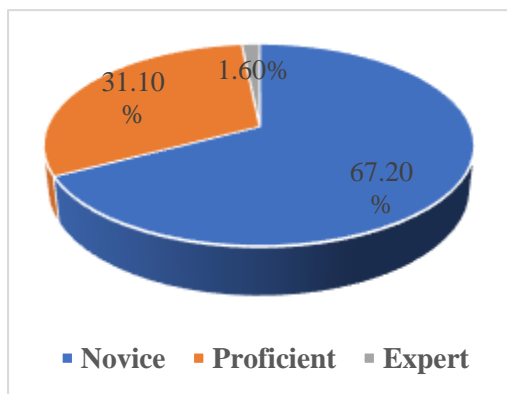


Fig-7: Level of Technical skill among the Hill Area Teacher Trainees

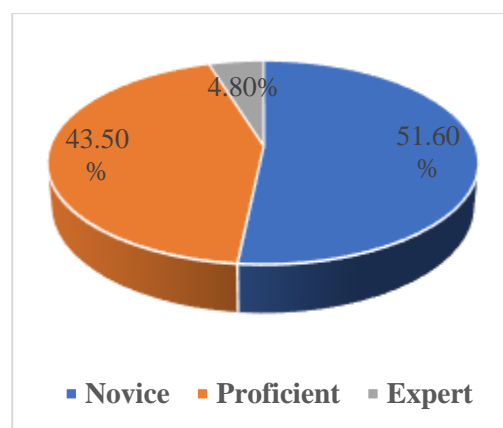


Fig-8: Level of Technical Skill among the Plain Area Teacher Trainees

Table 5. Categorization of Teacher Trainees from Government and Private Institutions

Institution	Total	Level of Technical Skills					
		Novice		Proficient		Expert	
		N	%	N	%	N	%
Government	81	56	69.1%	24	29.6%	1	1.23%
Private	42	17	40.4%	22	52.3%	3	7.14%

Table- 5 reflects the categorization of teacher trainees on the basis of their level of technical skills as novice, proficient, and expert studying at Government and Private institutions. The table reveals that from the total number of teacher trainees studied, 81 were from Government and 42 teacher trainees were from Private institutions. Out of 81 teacher trainees studying in Government institution, 56 (69.1%) were found at the novice level, 24 (29.6%) were observed at the proficient level and only 1 (1.23%) was found at the expert level. In case of teacher trainees studying in private institution, out of total 42 studied, 17 (40.4%) were found at the novice level, 22 (52.3%) were observed at the proficient level and only 3 (7.14%) were categorized at the expert level of technical skills. The result directs that the maximum numbers of Government teacher trainees was found at the novice level followed by proficient level whereas, maximum numbers of teacher trainees studying in Private institution were obtained at the proficient level followed by novice level. The teacher trainees studying in private institution showed better percentage of technical skills at all the three levels as compared to those studying in Government institutions (Fig.-9 and Fig.-10).

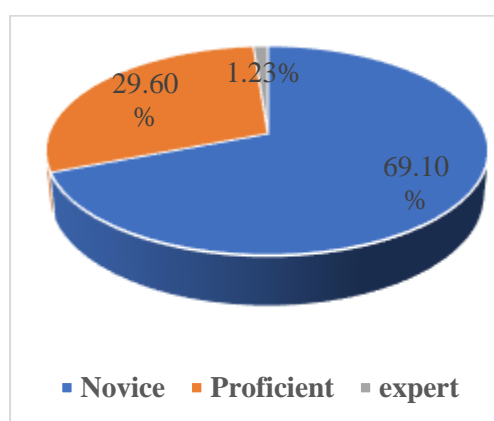


Fig-9: Level of Technical Skills among the Teacher Trainees of Government Institutions

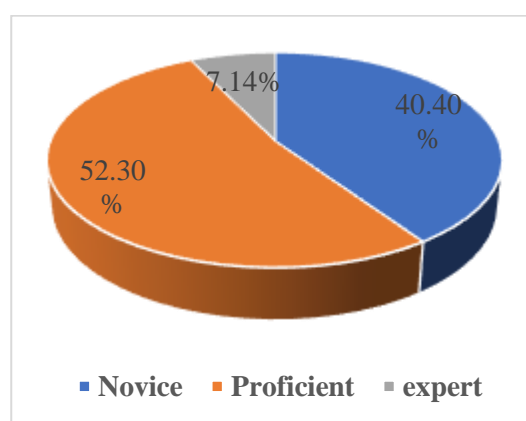


Fig-10: Level of Technical Skill among Teacher Trainees of Private Institutions

Conclusion

In the current education system, the use of technology in the teaching-learning process is an essential skill and challenging ability for teachers for which it is necessary to prepare or train them in advance. In the study, teacher trainees have been categorized into three levels on the basis of their current technical skills. It was found that the maximum number of teacher trainees was found at the novice level of technical skill. Most of them have low levels of technical skills followed by fewer numbers of them are in proficient levels and very few were found in the expert level of technical skills. In this research, the technical skill level in the maximum number of teacher trainees is novice level which shows that they lack technical-related skills and are not ready for technology use in the teaching-learning process. However, female teacher training showed better technical skills than male teacher trainees. Teacher trainees in plain areas have better technical skills than hill areas. Similarly, teacher trainees studying in private institutions showed better technical skills as compared to those studying in government institutions.

The reason for low level of technical skill may be that the technology-related activities and programs are not included in the teachers training program and during the training teaching-learning or technology is being not used properly. Today, we are getting more oriented towards digital education, but the present research findings indicate that the teacher trainees as future teachers are not fully prepared for this purpose. Besides this, it is necessary to provide training in technical skills to the teacher trainees during the teaching training program so that they can develop the required competencies to use these skills properly and can become expert. It is very important for teachers to have technical skills so that they can play a significant role in this era of digital education.

Therefore, on the basis of the research findings, it can be suggested that the effective use of technology at various stages should be made an important part of the teacher training program and emphasis should be given to developing technical among future teachers.

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