



Effectiveness of Trainers Training Programmes in Developing Pedagogical Skills at Secondary Level

**Dr. Rahmat Ullah Khan^a, Nauman Sadiq^b, Muhammad Gufar^c, Amjad Hussain Bhatti^d,
Muhammad Zubair^e**

^aPrincipal College of Education, Peshawar : Constituent College of Air University, Islamabad, Pakistan.

^{b,c,d,e}Education Officers, Faculty of College of Education, Peshawar : Constituent College of Air University, Islamabad

***Email:** rahmat66_marwat@yahoo.com

Abstract: The purpose of this study is to evaluate how the trainers' training programme is effective in developing selected pedagogical abilities of the trainers and suggesting ways and means to get better the training programme at secondary school level. The nature of the research is descriptive. The current study used an ex-post facto research design. The study population for the intended study is the trainers at various training schools of academy located at Karachi. Out of total 475 trainers, a sample size of N = 205 trainers from the schools was selected using stratified random sampling procedure. The Danielson framework for teaching served as the foundation for the pedagogical skills that were taught during the teachers' training programme (Pedagogical Skills Course) in four main areas, namely: planning and preparation, classroom environment, instruction and professional responsibilities. Faculty of College of Education, Peshawar conducted the research and used a non-participatory direct observational approach to look at instructors' performance in classroom settings in order to assess the efficacy of the teachers training course. In addition, a closed-ended questionnaire based on Likert scale (five-point) was employed to gather data for the study both before and after the intervention (trainers training sessions), in addition to the observations by the class teachers. The instruments' dependability is assessed by pilot testing. Data relevant to enhancement of pedagogical skills were collected and analysis was made. The results of the descriptive analysis of the data indicated that the training programme significantly influences the pedagogical skills development of the trainers. So, it was recommended that quality training programs for teachers may be introduced / improved at other training institutions, since this would significantly enhance the pedagogical skills & teaching effectiveness of the trainers in the classroom.

Keywords: Effectiveness, Pedagogical Skills, Training, Trainers, Danielson Framework, Secondary School

1. Introduction

Preparing teachers to be good at teaching requires them to learn pedagogical skills i.e how to teach well and how to connect with their students. Researcher Sharma (2000) believes that teachers can only do their job well if they've been trained properly. He thinks that many teacher training schools are not doing a good job because they use old-fashioned teaching methods. Student-teachers mostly learn theory and don't get much practice using good teaching methods during their training or when they start teaching. Anderson (1989) says that a good teacher training program can help teach these important skills and strategies. In the modern age of 21st century, the field of education is

undergoing a profound transformation, driven by rapid technological advancements, globalization, teaching methodologies and the evolving needs of society. As the demands on education evolve, therefore, the role of teachers is also changing. Today's educators are expected to not only to enhance their pedagogical skills for better teaching process but also impart knowledge and to foster a range of 21st -century skills in their students, including critical thinking, creativity, collaboration, communication, digital literacy and adaptableness in the society for living quality of life. To meet these demands, teacher training programs must adapt and evolve; equipping educators with the tools they need to succeed in the modern classroom. Any training program's overall goal is to alter behaviors, attitudes, or abilities in a way that improves performance outcomes. Since training and development personnel are increasingly held responsible for the outcomes of their programme, assessing a program's efficacy to determine if it achieves its goals is essential. Assessment can be performed to find out if the training meets its objectives. Evaluation can also find areas for development, evaluate the effectiveness of the trainings, and pinpoint pointless training that should be dropped (Luthans, 2002). Measuring the impact of training programme on the organization and enhancing their overall quality are two other crucial aspects of programme evaluation. It's also critical to keep in mind that a thorough review has several facets. The majority of the literature acknowledges the significance of evaluation in terms of economic return and client focus. Subject matter competence has always been regarded as the most valuable attribute in a training centre instructor (Kraiger & Kurt, 1993). However, there have been talks in recent years about the necessity of enhancing the pedagogical ideas and abilities of university instructors as well. As such, university teacher training has recently gained popularity throughout several nations. Nagykaldi & Zsolt (2015).

The teacher is seen as the most important component in putting all instructional changes into practice at the local level, according to the New Education Policy NEP (2020) and the National Professional Standards for Teachers in Pakistan (2009). Researcher lists a number of outcome categories where a teacher training programme may have an impact (López, 2018). These comprise the following: student accomplishment, teacher attitudes and beliefs, school-level practice, teaching practice, and teacher knowledge. There are several important components of teacher preparation that demand careful consideration. Pedagogical and interpersonal teaching abilities are necessary for instructors to be prepared for effective teaching. (Noah and Olusola, 2015). Moreover, Anderson(2012) claims that Teachers Training (TT) improves students' cognitive learning strategies and encourage them to choose a deep learning method. The effect of pedagogical skills training on university instructors' teaching philosophies, techniques, and student learning philosophies was investigated by Gibbs and Coffey (2004). Numerous nations, including the UK, Sri Lanka, and Norway and other developed nations, have decided to require university lecturers to complete pedagogical skills training. In order to enhance teachers' pedagogical ideas and abilities, several universities in Finland provide their faculty with pedagogical training. One such programme is the opportunity for new teachers to join an introductory seminar on pedagogical skills in university teaching. (Graham & Gibson, 2014).

Numerous earlier studies in the literature have stressed and examined the significance of teacher training and other professional development programme for teachers. For instance, it gives educators a chance to discuss how they educate (Ullah, 2017). It provides instructors with updates on pertinent teaching difficulties and solutions as well as current teaching trends (Steadman, 2008). It gives educators the tools they need to help their pupils study (Supriatna, 2015). Additionally, it enhances instructors' credentials (Simon, 2013). However, due to a shortage of competent teacher trainers, there have not been enough high-quality teacher training programmes created in the ASEAN region, despite the fact that these programmes have a good impact on teachers' instructional strategies (Weil, 2013).

1.2 Problem Statement

Despite the recognized importance of teachers' training programs in building pedagogical capabilities, there remains a lack of comprehensive evaluation regarding their effectiveness, especially in the area of this region. While these programs aim to enhance educators' skills and knowledge, but it is unclear whether, they are achieving their intended outcomes or not. On the other hand also sufficient expenditures are incurred on such types of training programmes. So, this gap in existing knowledge hinders the ability to assess the impact of teachers' training on pedagogical practices and student learning outcomes. Therefore, there is a critical need to evaluate the effectiveness of teachers' training programs in building pedagogical capabilities. Assessing teaching skills and behaviours can be done by

observing trainee teachers in real classroom settings. However, there hasn't been much emphasis placed on evaluating how these skills and behaviors evolve over time through such observations. Therefore, it becomes crucial to assess the effectiveness of teacher education programs in terms of how well they help develop specific teaching skills and behaviors. This evaluation is essential for enhancing the quality of teacher education programs in Pakistan.

1.3 Contribution of the paper to the existing Literature

The present research shows that some other related studies have been conducted in the field, particularly from the perspective of our society, the environment, and educational institutions. Additionally, no relevant study is available in this specific area of specialization in the region under study. Moreover, there are gaps in the conducted studies and questions that need to be answered regarding the subject of the study. Therefore, the current research aims to address several gaps and thus make significant contributions to existing knowledge and literature. This research will hopefully be beneficial for readers, trainers, educational planning makers, and curriculum designers. It is truly important for the improvement of educational institutions / system, and community as whole, and for teachers and involve in policy making of the country in particular. It will also be useful in other society across globe. As a result, it would open new vistas and contribute extensively to the available knowledge repository. The researched study has suggested some important ethics for upcoming researches. Therefore, it can serve as a source of guidance and inspiration for future researchers to look at additional aspects of the current study and lay a base for further studies/research.

1.4 Objectives of the Study

Following are the objectives of the current study.

- To determine the parameters of the Teachers' training program
- To assess the effectiveness of teachers' training program in developing teachers' pedagogical skills
- To suggest future recommendations for further improvement of the teachers training programme

1.5 Research Question

What are the effects of training programme on instructors' classroom performance at the training schools at Karachi

1.6 Hypotheses of the Study

H₀: Trainers' training programme has no effect on developing pedagogical skills

H₁: Trainers' training programme has significant impact on developing pedagogical skills

2. Literature Review

Pedagogical and interpersonal teaching abilities are necessary for instructors to be prepared for "effective teaching." According to Sharma (2000), teachers must have proper training in order to carry out their duties. He takes issue with the current teacher education program, which prepare teachers through the use of antiquated instructional techniques. Program for teacher education and training develop educators (Farooq, 2008). Through these initiatives, "teachers gain an understanding of subject matter, curriculum development, student growth, and the application of knowledge." How does a teacher learn what needs to be taught? and how should one instruct? It is believed that educators and escort educators who are paying attention to what we consider to be crucial in effective teaching would find it useful (Allid, 2013). Clear instruction from instructors is ensured via teacher training. It is evident when a teacher avoids using precise and hazy language and instead gives actual, explicit examples of the material being discussed. Programme for teacher education are designed to support accountability and social fairness (Poplin & Rivera, 2005). Pupils taught by qualified educators outperform those taught by unskilled educators. According to Smith (2002), a "class taught by an effective teacher" is full of engaging activities, enthusiastic, and goal-oriented kids who meet high expectations. A global problem has evolved with the inadequate transfer of information, skills, attitudes, and behaviors from the training environment to the workplace. The training of teachers has not been an exception. The literature that is currently available on teacher preparation shows that at least six dimensions quality, access, equality, efficiency, teacher growth, and overall school development can be used to evaluate the effectiveness of training. It is

clear from studies done in the fields of teacher professional development and training that there is insufficient knowledge and skill transfer from training to the job. The degree of this transfer is either aided or hindered by a number of circumstances. Studies indicate that teacher training has played a significant role in improving educational quality and can continue to do so as long as stakeholders are informed about the value and efficacy of carefully planned and executed interventions for the professional growth of teachers, teacher educators, and trainers (Glover, 2002). Zia Ullah (2008) emphasized that observing student instructors in a classroom setting is a useful tool for assessing teaching habits and competencies. A little amount of work has gone into assessing how trainee teachers' behaviors and skill development in the classroom are observed. Therefore, in order to enhance the teacher education programme, it is essential to assess the program's efficacy in terms of the development of certain teaching abilities and behaviors. Recent literature is assisting us in realizing that prioritizing teacher preparation is essential for educational transformation. Since the previous educational model, which was content-centered, called for highly qualified experts in each subject area taught in schools, teacher preparation programme prioritized teachers' subject-matter and pedagogical content expertise (Rossouw, 2011).

The teaching staff must be ready to embrace a "complex, evolutionary, and responsive approach" to educational changes in the context of a knowledge-based economy (D. Gatlin, 2009). Because integrative learning experiences bound skills, abilities, and knowledge in combinations used for efficient task performing, the expanded access to learning opportunities for potential beneficiaries beyond the traditional way of delivering school instruction sustains an educational approach focused on competencies (Jones et al., 2002). In order to complete tasks efficiently, the subject must deal with the complexity of real-world circumstances, which reinforces the need for transferable, context-free structures that have been referred to in the literature as key competencies, core skills, foundation skills, and important skills (S. Kerka, 1998). Competency-based education became the main focus of an educational movement in the United States throughout the 1970s. According to K. S. Weddel (2006), its distinctive characteristics are outlined in numerous theoretical studies: an approach to education that places an emphasis on learning outcomes related to beneficiaries' shifting needs in a complex structure of knowledge, skills, attitudes, and behaviors that support learners' effective performance in relation to a task or a real-world problem-solving scenario. Several approaches to competency-based education are discussed in the literature, including the behaviorist framework and the integrated approach, which is compatible with the cognitive view of learning and accepts varying levels of competence (novice, experienced, specialist). Competence is used in a variety of contexts and is interpreted as a reflective context that generates a developmental process rather than as trained behavior. (Kerka, S. 1998). Hilty (2015) described that programme that prioritize material are perceived as inferior to competency-based education.

2.1 Conceptual Framework

2.1.1 Effectiveness

Producing a desired impact is the definition of effectiveness. The average time to identify a problem, a teacher's success rate, their overall productivity, ROI (Return on Investment), and teacher satisfaction are all indicators of how effective training and development are (Brown, 2005).

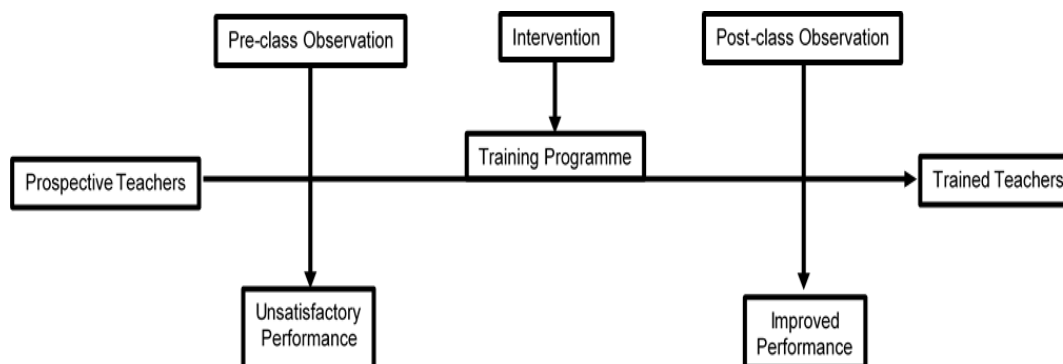
2.1.2 Training

The process of teaching personnel new information, skills, and talents is known as training. Employees' technical skill upgrading programme is known as training. A structured learning experience intended to permanently alter a person's "knowledge, attitudes, or skills" is referred to as training. According to studies, training is more focused on the here and now, with an emphasis on improving individuals' current tasks and the precise skills and abilities they need to carry them out right away. Development, on the other hand, improves behaviors and performance. Contrarily, employee development typically concentrates on potential positions inside the company (Birzer, 2001).

2.1.3 Observations

In its most basic form, observation is the act of 'seeing' things, including relationships, processes, events, and objects, and then officially documenting the information. Different kinds of observation exist. The practice of recording observations against a predetermined checklist is known as structured or direct observation. Expert observation entails the expert observing and documenting data on a subject and is often performed by someone with specialized skill in a particular field of work. It is also possible to conduct observation as a participatory activity. In such a

situation, the projects or programs intended beneficiaries arrange the observation exercise, participate in it, and discuss the results.



2.2 The Danielson Framework

The Danielson Framework is a tool made by Charlotte Danielson to help teachers get better at their jobs and be evaluated fairly. It talks about different parts of teaching, not just teaching lessons, like how the classroom feels, getting ready for class, what teachers do outside of teaching, and how they work with students. The framework has four main parts: Planning and Preparation, Classroom Environment, Instruction, and Professional Responsibilities. Each part has smaller sections that describe what teachers should do, like setting goals for lessons, making tests, and knowing what they're teaching really well. What's great about the Danielson Framework is that it can be used for all kinds of teachers, no matter what grade they teach or what subjects they cover. It gives everyone the same rules to follow when they're being evaluated, so it's fair. It also helps teachers look at what they're doing well and where they can get better. The framework doesn't just look at what happens in class, but also at how teachers help the whole school and keep getting better at teaching. It's not just about meeting standards; it's about always trying to be better. In the end, the Danielson Framework helps teachers teach better and helps students learn more.

3 Research Methodology & Procedure

The primary objective of this study was to assess how well the secondary school teacher education program in Karachi helps prospective teachers develop specific teaching skills and behaviors. Additionally, the study aimed to gauge the proficiency level of these skills. It was determined that the most suitable way to evaluate the development of these skills and behaviors among graduates was through classroom observation, as this allowed for direct assessment while they were actively teaching and demonstrating these abilities. The current study is descriptive in its nature. The ex-post facto research design was adopted for the study. The research is based on mixed method approach. Stratified random sampling technique was used to carefully select the trainee teachers from different schools of Karachi. To evaluate the effectiveness of teacher training programme, examined the performance of teachers in classroom settings by employing non-participatory direct observational technique. So, to facilitate this evaluation, a continuous observation recording method was employed throughout the study. Moreover, along with observation method, closed ended questionnaire based on five-point Likert scale was used before (pre-observation) and after (post-observation) the intervention (teachers' training programme) for data collection. Through pilot testing, reliability of the instruments was measured. Validity and reliability was ensured and collected data was analysed and interpreted by using descriptive statistics.

3.2 Study Population & Sampling

This study looked at all the teachers who were about to graduate from the College of Education in Peshawar (the entire group being studied is called the population). There are seven schools in Karachi that train their teachers through programs designed by the Peshawar College of Education. These programs focus on teaching skills (pedagogical) and adult learning skills (andragogical). Studying everyone takes a long time, so the researchers picked

a smaller group (sample) to focus on. They figured that most schools have similar programs (based on a source by Akbar, 2015). So, they only looked at teachers from schools in one area of Malir, Karachi. There were a total of N = 475 teachers who impart training to their students in these schools. Out of this group, n = 210 were chosen to be observed and answer questions of the questionnaire. In the end, only 185 teachers were fully observed and answered all the questions.

3.3 Data Collection Method

In this study, data were collected through observations. So, non-participant observation method was used as an evaluation method. Questionnaire was also used as a research instrument for data collection. It comprised of a series of statements and evaluator has chosen an option to show his level of agreement about the trainers' pedagogical skills. During classroom observation process of teachers by their respective trainers', four domains of training programme were under consideration such that:

- (a) Planning and preparation
- (b) Classroom environment
- (c) Instruction
- (d) Professional responsibilities

These four domains are based on the work of Danielson's Framework of teaching. The instrument of the study is a 5-point Likert scale and is based on four domains and took only 14 parameters, such as writing of desired learning objectives (DLO), writing of lesson plan (LP), use of resource material (RP), classroom management skills (CRM), time management skills (TM), maintaining board summary (BS), questioning techniques (QT), use of educational technologies (ICT), activity based teaching (ABT), diversified teaching methodologies (DTM), instructor knowledge base (IKB), communication skills (CS), personal traits (PT), phases of 5E method (5E). the detail domains are given as per Appendix-A.

The relationship between training programme and teacher pedagogical skills is studied through descriptive and inferential statistics. Data was collected through non-participatory direct class observation technique. During observation process, closed ended questionnaire based on 5-points Likert scale was used in classroom setting. The data was analysed and interpreted by using descriptive and inferential statistical techniques included simple percentages, and mean for demographical data. Faculty / experts of college in the same profession evaluated the questionnaire to guarantee its validity and reliability. The surveys were given out. Additionally, instructors completed the questionnaire and were asked to remark on the length, structure, and clarity of the terms. In addition, experts were consulted on the precision and ability to create frameworks for the research's questions and objects. The experts' and students' comments and ideas were taken into consideration while updating and changing the final version of the questionnaire. This guarantees the content's validity for the research. Nonetheless, Cronbach's alpha (α) assessment was employed to assess the measuring scales' internal consistency and dependability.

4 Analysis of the Data

For analysis of the collected data, software MS-Excel, and SPSS for writing, organizing data and data analysis was used. The study's proposed hypotheses have been tested using a statistical technique. The analysis of the data is about to find if the existing training end in effective outcome. The trainee teachers were being observed and assessed prior to exposing them to the training programme designed by College of Education Peshawar faculty. The trainee teachers already knew about the modules they were taught. They had some prior knowledge about it and used to practice it in their respective schools. After, that the students were trained for 02 weeks (consists of 30 periods) in the above-mentioned modules and their performance was then judged by using the same assessment tool by employing observational technique and closed ended questionnaire. The observed data was skillfully recorded and associated with their prior performance. Prior to the instruction, the trainee teachers' performance was evaluated using a specially designed evaluation form by College of Education, Peshawar. Total 185 trainee instructors' combined performance was calculated for averaged & percentages. To describe the essential features of the collected data, descriptive statistics were employed. It, along with basic graphical analysis, is regarded as the cornerstone of all quantitative data analysis. The results of the data analysis showed that each module worked properly. Additionally,

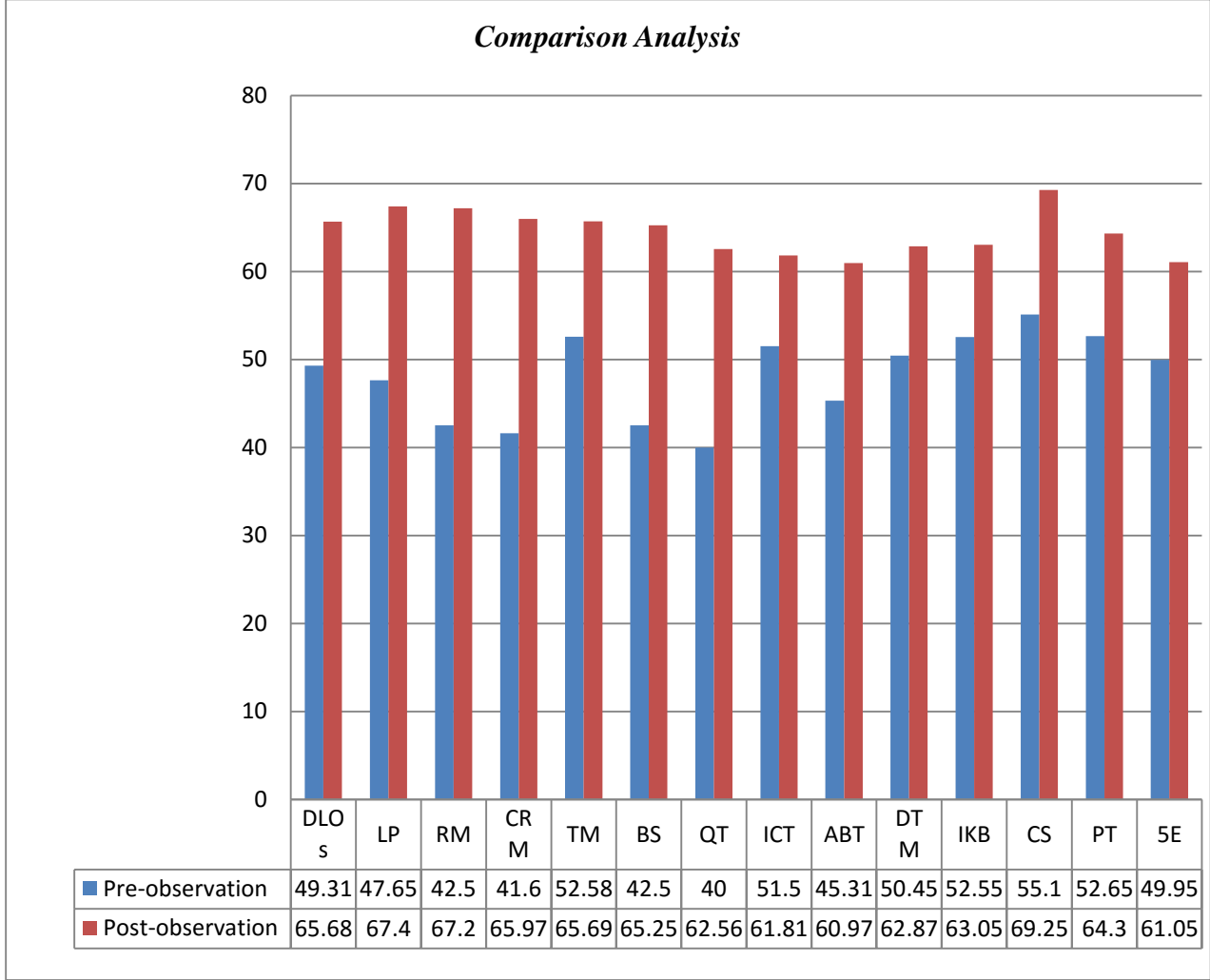
the module objectives were relevant, attainable, transparent, and in line with the content of the modules. They also addressed the diverse needs of teachers. It was also thought that the module material was engaging and fascinating. The following tabulated statistics reflects the received responses in favour of effectiveness of training:

4.1 Data Collected through Direct Observations

Table No.1: Comparison of Percentages of Effectiveness of Training Programme (Pre and post observations) in terms of enhancement of pedagogical skills of trainers:

S. No	Parameters (Skills / variables)	Pre-observation %	Post-observation %
1	DLOs	49.31	65.68
2	LP	47.65	67.40
3	RM	42.50	67.20
4	CRM	41.60	65.97
5	TM	52.58	65.69
6	BS	42.50	65.25
7	QT	40.00	62.56
8	ICT	51.50	61.81
9	ABT	45.31	60.97
10	DTM	50.45	62.87
11	IKB	52.55	63.05
12	CS	55.10	69.25
13	PT	52.65	64.30
14	5Es	49.95	61.05

Figure 1: Comparison / Graphic Analysis of study variables (Effectiveness of Training and development of pedagogical skills of trainers)



4.2 Data Collected through Likert’s Scale (Closes Ended Questionnaire) of Trainers Performance in Pedagogical Skills Development

The following items in divisions of performance were used:
All the indicators of each parameter measured against numerical or categories as shown in the following table:-

1	2	3	4	5
Unsatisfactory	Below Average Performance	Average Performance	Above Average Performance	Good Performance

Table 2: Analysis of effectiveness of Teachers' Training Programme & Development of Trainers Pedagogical Skills

S NO	Parameters (Skills / variables)	SCALE	5	4	3	2	1
1	DLOs	Performance	50	70	20	30	15
		% age	27	38	11	16	08
2	LP	Performance	47	70	24	25	19
		% age	26	38	13	14	11
3	RM	Performance	45	68	22	35	15
		% age	24	37	12	19	08
4	CRM	Performance	45	70	25	25	20
		% age	24	38	14	14	11
5	TM	Performance	51	69	35	23	17
		% age	28	37	19	12	9
6	BS	Performance	40	80	18	30	17
		% age	22	43	10	16	9
7	QT	Performance	50	65	20	38	13
		% age	27	35	11	21	7
8	ICT	Performance	40	80	18	30	17
		% age	22	43	10	16	9
9	ABT	Performance	54	61	21	29	20
		% age	30	32	11	16	11
10	DTM	Performance	40	45	20	45	35
		% Age	22	24	11	24	19
11	IKB	Performance	51	64	29	31	15
		% age	27	35	16	16	8
12	CS	Performance	51	64	29	31	15
		% age	27	35	16	16	8
13	PT	Performance	56	65	23	22	20
		% age	30	35	14	11	11
14	5Es	Performance	45	75	18	28	21
		% age	24	41	10	15	11

4.3 Findings of the Study

On the basis of the research study for “evaluating the effectiveness of teachers’ training programme on improving pedagogical skills at secondary level”, after statistical analysis and findings of the research, the following conclusions were drawn from the findings were drawn:

Table No.1 of Comparison & Analysis of study variables shows that in terms of enhancement of trainers pedagogical skills, post observations of the class teachers outperformed the pre-observations of class teachers. So it reveals that there is a positive relationship between Teacher training programme and teachers’ pedagogical skills development. Therefore, the relationships between teachers / trainers have improved as a result of teacher training programmes regarding pedagogical skills enhancement.

Table No. 2, (Assessment of performance) Effectiveness of Teachers Trg Programme & Development of Trainers Pedagogical Skills depicts that majority of the trainers awarded and declared as having good performance or above average performance in the development of their pedagogical skills of the teaching at secondary level. These skills which were enhanced due to training were included writing of desired learning objectives (DLO), writing of good lesson plan (LP), use of resource material (RP) in a proper way, classroom management skills (CRM), time management skills (TM), maintaining board summary (BS), questioning techniques (QT), use of educational technologies (ICT), activity based teaching (ABT), diversified teaching methodologies (DTM), instructor knowledge base (IKB), communication skills (CS), personal traits (PT), phases of 5E model of teaching (with 5Es).

4.5 Hypotheses Validation

The following table illustrates the precise summary of results for the proposed hypotheses under this study.

Table: 4: Hypothesis Validation

Hypothesis	Statement	Result/ Validation
H_0	Teacher's training program has no effect in developing pedagogical skills	Rejected
H_1	Teacher's training program is positively related to teacher's pedagogical skills	Approved

4.6 Discussion

This research aimed to evaluate the effectiveness of trainers training programs in developing pedagogical skills of teachers specifically for secondary school education. A descriptive approach was employed, involving data collection and analysis. The findings revealed a positive correlation between trainers training and the development of their pedagogical skills. Consequently, the H_1 , (alternative hypothesis), which likely predicted a positive effect of training, was supported. Furthermore, existing literature and studies within the field lend credence to the notion that professional development for teachers has a positive impact on the professional development / pedagogical enhancement of trainers themselves. It is important to acknowledge the limitations of this study. Conducted within a single city with a limited sample size, the research focused solely on trainers working with secondary education. Despite these constraints, the study offers valuable insights for educators, parents, school administrators, and policymakers. The research highlights the potential benefits of implementing teacher training programs and enhancing professional development for secondary school teachers. This approach challenges the traditional methods employed in our schools. The study recommends further exploration and implementation of innovative teaching practices. This will enhance the professional competency of teachers and raise their awareness of new trends and advancements in education. Ultimately, these measures will equip teachers to effectively address the emerging challenges of teaching and learning in the contemporary educational landscape.

5 Conclusion

In our modern era, marked by rapid advancements and innovative educational approaches, measuring training effectiveness often relies heavily on students' outcomes across various disciplines. Among these factors, the performance of teachers trained in development of pedagogical skills holds particular significance for educational policymakers. This is due to the crucial role such teachers play in imparting foundational concepts, rules, and principles, essential for an effective teachers required in the era of 21st century skills. This research provides compelling evidence that underscores the importance of professional development for teachers, particularly in the area of pedagogical skills at the secondary level. These findings hold valuable implications for all educators who seek to refine their teaching and learning practices, ultimately better preparing them for the noble profession of educating young minds.

5.1 Study Recommendations

Based on this study, here are some recommendations to improve teachers training and enhance their pedagogical skills:

1. More professional development: Teachers should have more chances to learn new teaching skills at special colleges. Experienced teachers can even be involved in training new teachers at these colleges.
2. Better training environment: Both trainers and trainees should have a comfortable and well-equipped space to learn. This could include things like up-to-date teaching learning resources and materials.
3. Focus on teaching: Teachers shouldn't be given extra tasks that aren't related to teaching and students overall grooming. This allows them to focus on their main job: educating future generation of students.
4. Rewards for good teaching: Teachers who do a great job in the classroom should be recognized and rewarded.
5. More training opportunities: Each training school could hold workshops, seminars, and sessions to help teachers improve their pedagogical / andragogical skills.

6. Improved evaluation process: The way teachers are evaluated and how their training programs are designed should be kept up-to-date. This might involve research and development (R&D) efforts. Teachers being evaluated should get help beforehand from experienced trainers.
7. Collaboration: Different organizations involved in teachers training should work together to improve the quality of training.
8. Further research: This study focused on secondary school teachers. So, more research could be done on other grade levels and subjects to see if the findings apply there too.

References

- Akbar, R. A. (2001). A study of practice teaching of prospective secondary school teachers and development of practice teaching model. Rawalpindi: University of Arid Agriculture.
- Allday, R. Allan, Shelley Neilsen-Gatti, and Tina M. Hudson(2013). Preparation for inclusion in teacher education pre-service curricula. *Teacher education and special education* 36, no. 4 (2013): 298-311.
- Anderson, L. W. (1989). *The effective teachers, study guide and readings*. New York: McGraw Hill.
- Anderson, Ray C., Ian Spellerberg, and Daniel E. Vasey, Eds(2012). *The future of sustainability*. Vol. 10. Berkshire Publishing Group, 2012.
- Birzer, Michael L., and Ronald Tannehill(2001). A more effective training approach for contemporary policing. *Police Quarterly* 4, no. 2 (2001): 233-252.
- Black, Julia, and Dimity Kingsford Smith(2002). Critical reflections on regulation. *Australasian Journal of Legal Philosophy* 27, no. 2002 (2002): 1-46.
- Brown, Lorna M., Stephen (2005). *A first investigation into the effectiveness of tactons*. In First joint euro haptics conference and symposium on haptic interfaces for virtual environment and tele operator systems. World haptics conference, pp. 167-176. IEEE, 2005.
- Cronbach, Lee J., and Willard G. Warrington(1991). *Time-limit tests: estimating their reliability and degree of speeding*. *Psychometrika* 16, no. 2 (1991): 167-188.
- Farah, Martha J., Katherine M. Hammond, David N. Levine(1998). Visual and spatial mental imagery: Dissociable systems of representation. *Cognitive psychology* 20, no. 4 (1988): 439-462.
- Farooq, M. S., & Shahzadi, N. (2006). Effect of teachers' professional education on students' achievement in mathematics . *Bulletin of Education and Research*. 28(1). pp. 47-55.
- Gibbs, Graham, and Martin Coffey(2004). The impact of training of university teachers on their teaching skills, their approach to teaching and the approach to learning of their students. *Active Learning in Higher Education* 5, no. 1 (2004): 87-100.
- Glover, Jerry, Harris Friedman, and Gordon Jones(2002). Adaptive leadership: When change is not enough (part one). *Organization Development Journal* 20, no. 2 (2002): 15.
- Hilty, Donald M., Allison Crawford, John Teshima, Greg Kramer et al(2015). A framework for telepsychiatric training and e-health: competency-based education, evaluation and implications. *International Review of Psychiatry* 27, no. 6 (2015): 569-592.
- Kerka, Sandra (1998). *Volunteering and adult learning*. ERIC Clearinghouse on Adult, Career, and Vocational Education, Center on Education and Training for Employment, College of Education, the Ohio State University.
- Kraiger, Kurt, J. Kevin Ford, and Eduardo Salas(1993). Application of cognitive, skill-based, and affective theories of learning outcomes to new methods of training evaluation. *Journal of applied psychology* 78, no. 2 (1993): 311.
- López, Francesca, and Lucrecia Santibañez(2018). Teacher Preparation for Emergent Bilingual Students: Implications of Evidence for Policy. *Education Policy Analysis Archives* 26, no. 36 (2018).
- Luthans, F. (2002). Positive organizational behavior: Developing and managing psychological strengths. *Academy of Management Perspectives*, 16(1), 57-72.
- Nagykaldi, Zsolt, James W. Mold, and Cheryl B. Aspy (2005). *Practice facilitators: a review of the literature*. *Family Medicine-Kansas City*- 37, no. 8 (2005): 581.
- R.U. Khan & Irshad M Hafiz (2018). *Effects of E-Learning Media on Cognitive Skills Enhancement of Students*. *Journal of Global Social Sciences Review (GSSR)*: Vol. III, No. I (Winter 2018) Page: 176 - 193

Theophile, M. S., faustin, & benjamin,(2020). The effect of unqualified teachers on students ‘academic performance at rusoro secondary school of gakenke district, rwanda. *International journal of all research writings*, 2 (2), 1-10.

Ullah, S. Zia, M. S. Farooq, and R. A. Memon(2008). Effectiveness of Teacher Education Programmes in Developing Teaching Skills for Secondary Level. *Online Submission* 4, no. 1 (2008): 33-38.

Appendix -A

Main parameters of Pedagogical Skills Assessment form. The indicators are shown in the following table against each parameter.

PARAMETERS	INDICATORS
1. Desired Learning Objectives (DLO)	Number of Desired Learning Objectives (DLOs) Logical Sequence Lower/Higher Order Thinking Skills DLOs are Specific, Measurable, Attainable, Relevant and Time bound
2. Lesson Plan (LP)	Topic as per weekly syllabus breakdown Sequential development as per DLOs Detailed /Sketchy Spelling/Grammar/Structure
3. Resource Material (RM)	Sufficient / Insufficient Resource Material Relevant /Irrelevant Resource Material Effective utilization of Resource Material Physical dimension/Infrastructure/Teaching area
4. Classroom Management (CRM)	Classroom Rules/Procedures Student Behavior (Disruptive/Non-disruptive) Self-management Classroom Monitoring/Mobility
5. Time Management (TM)	Overall time management Inter-stage time management
6. Board Summary (BS)	Dividing board space into main and incidental boards Maintaining effective Board summary
7. Questioning Techniques (QT)	Application of questioning technique Cognitive levels of questions Appropriateness of multimedia slides (font size, color combination etc)
8. Use of Educational Technologies (ICT)	Effectiveness of suitable and relevant pictures Effectiveness of suitable and relevant video clip Effectiveness of suitable and relevant animation Multimedia handling Effective use of online resources
9. Activity Based Teaching (ABT)	No of activities Elaboration of activities Suitability of activities Execution of activities Appropriate time allocation to activities Appropriate blend of teaching methods/strategies
10. Diversified Teaching Methodologies (DTM)	Student centered /teacher centered activities Student participation (active/passive) Teacher role (facilitator or lecturer) Teachers talk time Vs student talk time

11. Instructor Knowledge Base (IKB)	Command on subject Knowledge
	Knowledge of cognitive domain of learning
	Knowledge of affective domain of learning
	Knowledge of psychomotor domain of learning
12. Communication Skills (CS)	Knowledge of individual differences
	Spoken fluency and pace
	Spelling and vocabulary
	Pronunciation
13. Personal Traits (PT)	Quality of Voice/intonation
	Ability to convey meaning
	Turn out
	Body language
14. Phases of 5 E Model of Teaching: <i>i Engage phase</i> <i>ii Explore phase</i> <i>iii Explain phase</i> <i>iv Elaborate phase</i> <i>v Evaluate phase</i>	Commitment /Confidence/Composure
	Humor, Maturity and Interpersonal skills
	Behavior towards students
	Arouse interest and grab attention
	Create curiosity and disequilibrium
	Organize students' thinking toward the topic
	Providing concrete activities/Hands-on experiences
	Resolving the disequilibrium of the engagement phase
	Becoming a facilitator
	DLO-wise organization of activities
	Effective explanation of all DLOs through students
	Giving explanations for learners' clarification only
	Going over the main points of the lesson
	Relating the topic with real time situations
	Aligning assessment with DLOs
	Aligning assessment with activities
	Feedback on quizzes/worksheets/questionnaire etc.

All the indicators of each parameter measured against numerical or categories as shown in the following table.

1	2	3	4	5
Unsatisfactory	Below Average Performance	Average Performance	Above Average Performance	Good Performance