

**EVALUATING THE TEACHERS TRAINING
PROGRAMME FOR IMPLEMENTATION OF SINGLE
NATIONAL CURRICULUM 2021**



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2024

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PROGRAMME FOR IMPLEMENTATION OF SINGLE
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Reg. No. 166-FSS/PHDEDU/F19

A thesis submitted in partial fulfilment of the requirement for the degree
of
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**DEPARTMENT OF EDUCATIONAL LEADERSHIP &
MANAGEMENT, FACULTY OF EDUCATION, INTERNATIONAL
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2024**

Dedicated to

Parents who brought me to Earth from the Heavens,
The Teachers who exalted me to Heavens of Knowledge from Earth,
And
The Children who will carry on the Journey of Knowledge.

SUPERVISOR'S CERTIFICATE

The thesis entitled as "Evaluating the Teachers Training Programme for Implementation of Single National Curriculum 2021" submitted by Mr. Khalid Mahmood Shaheen Reg. No. 166-FSS/PHDEDU/F19 in partial fulfilment of PhD degree in Education, has been completed under my guidance and supervision. I am satisfied with the quality of research work and allow him to submit this thesis for further process as per IIUI rules and regulation.

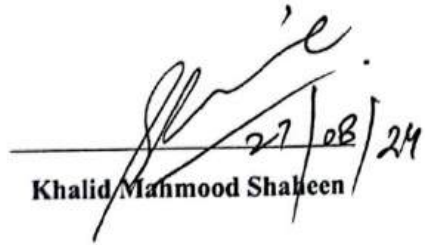
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AUTHOR'S DECLARATION

I, Khalid Mahmood Shaheen, Regd. No. 166-FSS/PHDEDU/F19, as a student of PhD in Education at International Islamic University, Islamabad do hereby declare that the thesis entitled "Evaluating the teachers training programme for implementation of single national curriculum 2021", submitted for the partial fulfilment of PhD in Education is my original work, except where otherwise acknowledged in the text and has not been submitted or published earlier and shall not in future, be submitted by researchers for obtaining any degree from this or any other university or institutions.


27/08/24
Khalid Mahmood Shaheen

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PROGRAMME FOR IMPLEMENTATION OF SINGLE
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BY


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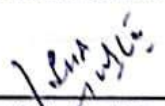
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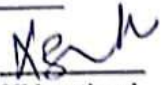
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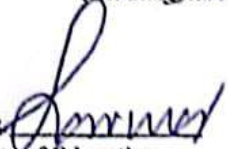
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ABSTRACT

This study was aimed to evaluate the effectiveness of the teacher training program carried out for the implementation of the Single National Curriculum (SNC), 2021, after adoption of the slogan of ‘one nation, one curriculum’, with a particular focus on the success of the online training in imparting suggested pedagogies to the PSTs/ESTs for practicing in the English language classroom. Utilizing a concurrent mixed-method research design (Cresswell, 2011), the study incorporated both qualitative and quantitative data which were collected concurrently and was analyzed simultaneously with triangulation of the results after the analysis, by using Stufflebeam's (2003) CIPP. Success and effectiveness of all four components of CIPP model, Context, Input, Process and Output were evaluated analyzing quantitative and qualitative data to determine how the content of training modules were aligned with the Single National Curriculum (SNC) guidelines, how the new pedagogies, according to competencies, benchmarks, standards and new assessment techniques were transferred to the teachers, how these newly learned knowledge and skills were practiced in the English classroom and how the students were perceiving these new pedagogies and assessment techniques from their English language teachers. To achieve these objectives of the study, this research sample involved 900 English language Primary School Teachers, 15 Master Trainers, and 135 Grade-V students, utilizing survey questionnaires for teachers and students, classroom observation, and interviews of the master trainers for data collection. The content analysis of the training modules revealed that while these modules included material on oral communication, writing skills, and vocabulary development at sufficient level, they lacked content on ethical and social behavior, reading skills, and listening skills compared to the SNC guidelines. Teachers generally agreed on the alignment of SNC with the training modules (M=3.6) and were slightly positive about gaining knowledge and skills related to competencies, benchmarks and standards (M=3.4). However, they were nearly undecided about the general aspects of the training (M=3.3) but agreed on learning new assessment techniques and pedagogies (M=3.7). Students’ feedback indicated that teachers were using new pedagogies (M=3.9) and assessment techniques (M=4.2), and students felt they were receiving citizenship education (M=4.0) and learning to use web sources (M=4.0). Classroom observation showed that teachers were applying newly learned skills and pedagogies (M=2.7). These findings revealed that while training modules were partially aligned with SNC guidelines, they lacked content in areas such as ethical behavior and certain language skills. Teachers generally reported positive outcomes from the training, and students noted the implementation of new pedagogies and assessment techniques in classrooms. Interviews with master trainers highlighted that the online model was suitable given the COVID-19 situation, and despite some misalignment between curriculum guidelines and training modules, the training effectively disseminated knowledge and skills related to SNC to the trainee teachers within three months span throughout Punjab. The study recommended inclusion of new fully aligned content and comprehensive modules to cover all curriculum needs, conducting comprehensive training specifically for English language teachers as proposed in SNC guidelines, and follow up on training to monitor effective curriculum implementation. Future research should investigate students' performance in summative assessments to assess training effectiveness in accordance with SLOs to further enhance the curriculum implementation. Overall, the study concluded that while the training program had some gaps, it was largely successful in achieving its goals within a limited timeframe and resources.

KMS

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LIST OF ABBREVIATIONS

CIPP	Context, Input, Process, Product
EST	Elementary School Teacher
ICT	Information Communication Technology
LMS	Learning Management System
LTEM	Learning Transfer Evaluation Model
MOFEPT	Ministry of Federal Education and Professional Training
NCC	National Curriculum Committee
PST	Primary School Teacher
PTI	Pakistan Tehreek e Insaf
QAED	Quaid-e-Azam Academy of Educational Development
ROI	Return of Investment
RSS	Really simple syndication
SDGs	Sustainable Development Goals
SLOs	Student Learning Outcomes
SNC	Single National Curriculum
TPD	Teacher Professional Development

CHAPTER I

Introduction

It can be persuasively argued that teachers occupy a position of paramount importance in the educational system, serving as the linchpin in numerous critical aspects of student development and educational efficacy. This assertion is substantiated by a robust body of recent empirical research spanning diverse domains of educational inquiry. For instance, Alsubaie (2016) underscores the indispensable role of teachers in curriculum development and implementation, while Özgenel and Mert (2019) elucidate their pivotal contribution to overall school effectiveness. Furthermore, the influence of educators extends to shaping students' career trajectories (Wong, et al., 2021) and facilitating the successful implementation of inclusive education practices (Ginja & Chen, 2023). The multifaceted impact of teachers is further evidenced by their instrumental role in fostering students' emotional intelligence (Parinussa, et al., 2023; Valiente, et al., 2020) and enhancing academic achievement across various disciplines (Fauth, et al., 2019; Szumski & Karwowski, 2019; Toropov, et al., 2019). Moreover, teachers are at the forefront of implementing innovative pedagogies and teaching strategies (Teig, et al., 2019), improving student behaviors (Teig, et al., 2019), advancing education for sustainable development (Kalsoom & Qureshi, 2019; Timm & Barth, 2021), integrating technology in educational settings (Konstantinidou & Scherer, 2022), and motivating students (Vermote, et al., 2020).

Through their pedagogical expertise, teachers play a crucial role in imparting a diverse array of skills, knowledge, and creativity to students. A comprehensive body of evidence unequivocally supports the contention that teachers are indeed the cornerstone of educational success and student development. Teachers are also key players in process of

curriculum implementation as reported by Anif, et al., 2020; Arif, & Sulistianah, 2019; Duong, 2021; Florence, n.d.; Pak, et al. 2020; Shafie, et al., 2021; Yue, & Shao, 2020. In this perspective, after adoption of textbooks as teaching and learning material, success in curriculum implementation directly relates to the teachers' competence to teach newly adopted material (Yue, & Shao, 2020).

The pivotal role of teachers in education and society cannot be overstated, as evidenced by a substantial body of recent research. Teachers serve as the primary conduits for knowledge transfer and skill development, while simultaneously nurturing curiosity, fostering creativity, and shaping informed citizenship in students (Fauth, et al., 2019; Szumski & Karwowski, 2019; Toropova, et al., 2019). Their significance lies in their unique capacity to empower youth through education, thereby laying the foundation for future accomplishments across various domains of human endeavor (Wong, et al., 2021). While the fundamental responsibility of educators centers on the transmission of knowledge, their role extends far beyond mere information dissemination.

Indeed, it can be argued that the most critical function of teachers is to design and implement meaningful educational experiences that enable students to tackle real-world challenges effectively (Parinussa, et al., 2023; Valiente, et al., 2020). This multifaceted approach to education not only equips students with essential knowledge but also cultivates critical thinking skills and problem-solving abilities crucial for navigating an increasingly complex world.

Thus, teachers emerge as indispensable architects of societal progress, molding the intellectual and social landscape through their profound influence on successive generations of learners. It can be compellingly argued that teachers occupy a central and

indispensable position in the process of curriculum development and implementation as well, serving as a fundamental pillar in the teaching-learning environment. Their unique combination of knowledge, skills, and experience renders them crucial to any meaningful curriculum improvement initiative (Yue & Shao, 2020). The multilayered involvement of teachers in curriculum development encompasses a spectrum of critical activities, including development, implementation, assessment, and modification. This comprehensive engagement underscores the educator's pivotal role in shaping educational content and methodologies.

Therefore, teachers engaged in curriculum organization shoulder a diverse array of roles and responsibilities, which include, but are not limited to, the judicious selection and systematic organization of content, the development of effective instructional strategies, and the rigorous evaluation of student learning outcomes. A primary objective of the teacher's role in curriculum development is to ensure that the curriculum remains relevant, engaging, and optimally aligned with student needs. This alignment is crucial for maximizing educational efficacy and student engagement.

Furthermore, it can be posited that teacher involvement in curriculum development not only enhances educational outcomes but also contributes significantly to professional satisfaction. By actively participating in the curriculum development process, teachers can derive greater enjoyment from their profession, finding fulfillment in both the act of teaching and in observing the tangible progress of their students. This symbiotic relationship between teacher engagement in curriculum development and professional satisfaction underscores the importance of empowering educators to play an active role in shaping the educational landscape they navigate daily.

Given the pivotal role of teachers in curriculum development and implementation, it is imperative to recognize the necessity of continually updating their knowledge and skills, particularly in relation to innovations in contemporary curricula. Professional development through targeted teacher training emerges as a critical factor in ensuring the successful implementation of curriculum reforms (Handler, 2010). This assertion is corroborated by the National Institute of Excellence in Teaching (NIET, 2020), which posits that the implementation of high-quality curriculum, facilitated through comprehensive teacher professional development and training, directly correlates with enhanced student learning outcomes.

A substantial body of research has examined various facets of teacher training and its significance in curriculum implementation. Notably, Jadhav and Patnakar (2013) conducted a comprehensive evaluation of teachers' roles in the holistic curriculum development process, including its implementation phase and what they indicated, building on this, Apau (2021) delved into the specific challenges faced by teachers in curriculum implementation, further underscoring the complexity of this process and the need for targeted support.

The critical importance of teacher effectiveness in fostering optimal learning environments is further emphasized by Bardach, et al. (2021). Their report presents compelling evidence indicating that teacher effectiveness stands as the principal factor contributing to enhanced student learning outcomes in classroom settings. Crucially, this effectiveness is not an innate quality but one that can be cultivated and refined through systematic professional development and training initiatives.

This collective body of evidence presents a compelling argument for the prioritization of ongoing teacher professional development as a cornerstone of effective curriculum implementation. By investing in the continuous enhancement of teachers' pedagogical skills and content knowledge, educational systems can significantly augment their capacity to translate curricular objectives into tangible learning outcomes, thereby maximizing the educational impact on students.

In this context, evaluation of teacher training programmes is necessary for feedback for policy makers, curriculum experts, teachers, students, and other stakeholders alike. According to Owen (2020), evaluation can be considered as a process of knowledge production, which develops through using rigorous empirical enquiry. Educationists have suggested many models of programme evaluation to evaluate the effectiveness of a programme. Based on the questions for evaluation purposes, a particular model is selected and used to reach the answers. These programme evaluation models have been devised, according to six major categories such as; results models, process models, system models, economic models, actor models and programme theory models (Garboan, 2008).

However, there is no defined boundary for restricting these models into a single category due to their overlapping commonalities. Anh (2017), has described Tyler's Objective Model, Stake's Responsive Model, Scriven's Goal Free Model, and CIPP models as key historical models for educational programme evaluation. Apart from these programme evaluation models, Kirkpatrick (2016), model of programme evaluation is also one of the widely used model. CIPP (Context, Input, Process and Product) model of programme evaluation was developed and upgraded by Stufflebeam (2001) which falls into the category of Programme Theory Models and is considered as one of the most widely

used models of Programme evaluation in the field of Educational Evaluation (Garboan, 2008).

Although, programme evaluation is an essential tool to evaluate effectiveness and efficiency of a programme, research in the field of programme evaluation is limited and needs further research. Garboan (2008) suggested that Kirkpatrick's Four Level Model, CIPP Model or Outcomes-Based Evaluation Model can be adopted for programme evaluation studies.

Keeping the above discussed perspective in view, and the requirement for implementation of Single National Curriculum textbooks in schools in Pakistan, from 2021, there is a need to conduct research on effectiveness on teacher training programme in this regard. Single National Curriculum (SNC) was implemented due to some major events in constitutional history of Pakistan. Before the 18th amendment in the Constitution of Pakistan, 1973, the Concurrent Legislative list included the subject of Education which came under the Provincial control after this amendment in 2010. According to Rana (2020) The 18th Amendment brought several important changes to the Constitution that had a direct bearing on provision of education in Pakistan. Perhaps the most significant was the insertion of Article 25(A), which made education a fundamental right and required the state to provide free and compulsory education to all children between the age of 5–16 years. Implementation of this fundamental right requires the Federal and Provincial Governments to establish the necessary legislative and institutional frameworks for their respective areas of jurisdiction. Accordingly, the Provincial Governments enacted a new law to this effect, but only the Sindh government framed rules to operationalize the right-to-education laws.

Furthermore, the abolition of the Concurrent List brought the two subjects of constitution in the exclusive provincial realm, wherein, curriculum, syllabus, planning, policy, centers of excellence and standards of education and Islamic education were now a subject of provincial governments, whereas, previously, the development of the national curriculum and syllabus was the responsibility of the Curriculum Wing of the (now dissolved) Ministry of Education. The Curriculum Wing was established under the Federal Supervision of Curricula, Textbooks and Maintenance of Standards of Education Act of 1976. To support the federal Curriculum Wing, each province had also established Bureaus of Curriculum. Now, when the Curriculum Wing was dissolved, the responsibility of developing curriculum had fallen upon provinces wholly and squarely. For the time being, although none of the provinces deviated from the curriculum last revised in 2007–2008, but it was a matter of time that provincial bureaus of the curriculum would have to start modifying the same to suit their educational needs.

The dissolution of the Ministry of Education in 2011 was soon followed by the creation of the federal Ministry of Education and Training. The new Ministry was responsible for, inter alia, establishing and managing educational institutions within federal territories, international conventions and agreements regarding education, the achievement of Millennium Development Goals and technical and vocational training (Rana, 2020).

This scenario led to concern that if all the provincial government were to develop and implement an educational curriculum of their own, it could harm the integrity and ideological unity of Pakistan as a Federation that could result into an irreparable loss to Pakistan as a nation. Owing to this threat, the need of devising a Single National Curriculum for the whole nation emerged strongly amongst the policy makers and all other

stake holders as well. Curriculum of 2006 was being taught till 2020. With a slogan and motto of “One Nation, One Curriculum”, the Single National Curriculum was developed after the commencement of current federal Government led by Pakistan Tehreek-e-Insaf (PTI) (Rana, 2020).

After implementation of Single National Curriculum (SNC) in Pakistan in academic session 2021-22, a comprehensive Online Training of Single National Curriculum was carried out in Punjab. In this perspective, there arose a need to evaluate and analyze the effectiveness and suitability of this teacher training programme in the light of Curriculum guidelines provided by National Curriculum Committee (NCC). Although several studies have been conducted to evaluate teacher training programmes in recent past in Pakistan and throughout the world as well, there is non-existent research in this area related to teacher training programmes conducted for carrying out curriculum implementation. Keeping this scenario in view, this study was conducted to cater the research need pertaining to evaluation of teacher training programme for implementation of Single National Curriculum, 2021.

In Pakistan, the Federal Ministry of Federal Education and Professional Training is in-charge of developing and devising the guidelines for proposing and implementing curriculum and subsequent training. Thus, the content and textbook are approved by Federal Ministry of Federal Education and Professional Training before these textbooks are disseminated to be adopted as authentic teaching material to be taught in the schools. In this context, Alsubaie (2016) has emphasized role of teachers in curriculum development and implementation.

Curriculum implementation can be perceived as a process of curriculum change resulted by innovative ideas incorporated in revised curriculum. The most important and guiding principal and the central goal of implementing a curriculum tends to gain improved and enhanced teachers' pedagogies and student learning. Teachers remain unable to focus on better student learning if they do not possess knowledge and competencies of new material to be taught, methods of teaching the content according to students learning outcomes Guo (2018).

Enhancing teachers' knowledge and their capacity building is necessary for effective curriculum implementation as less competent and untrained teachers remain unable to transfer new knowledge and skills that need to be taught for achieving curriculum goals and SLOs. Teachers can only educate their students effectively when they are well equipped and trained about the new learning content (Kabaday, 2016). In this context, teacher training is quite beneficial in curriculum implementation (Mandukwini, 2016; Robinson, 2019).

Some experts like Kabaday (2016) described models of teacher training under specific categories, however, Online Teacher Training of SNC was a blend of Web-Based Interactive Model and Web 2.0 LMS Model (Reid, 2017). Four modules of Teaching English were included in this training focusing on teaching of four language skills. Therefore, Content analysis of these modules was completed keeping in view the alignment and clarity of Objectives of Modules with SNC, and alignment of Training Modules with competencies, standards, benchmarks, and students learning outcomes set in the SNC.

Stufflebeam (2003), updated CIPP model of programme evaluation was adopted which involves context, input, process, and product of a programme focusing mainly on

effectiveness and sustainability, meta-evaluation, and synthesis of different components of a programme. This model seeks the answer to the success or failure of a programme and whether a programme reached the target group or not. Moreover, it also determines what were the needs that have been satisfied by the programme. In this model, the evaluation criteria are derived from the aim and the objectives of the programme.

Teacher training is imparted for curriculum implementation after induction of teaching content and textbooks in the schools. As teacher training is directly related to enhancement in teachers' pedagogical competencies which ultimately lead to better student learning and achievement, educationists have conducted several research studies in this area. For example, Raja and Wei (2014) evaluated the effectiveness of teacher training programmes in Islamabad Model Colleges. Shin (2006) described detail of the evaluation of teacher training programmes in the United States of America in terms of Student-Centered practices used in the lessons. Vicky (2016) investigated teacher factors influencing implementation of integrated English curriculum in public secondary schools. Mandukwini (2016) investigated challenges faced in curriculum implementation in high schools. (Alsubaie, 2016) and (Patnagar, 2013) conducted a study on the role of teachers in curriculum development.

1.1 Rational of the Study

The evaluation of teacher training programmes is a critical component in the continuous improvement of educational systems, particularly when implementing significant curricular reforms such as Pakistan's Single National Curriculum (SNC) of 2021. This evaluation process serves multiple crucial functions that extend beyond mere assessment of programme efficacy. This approach leads to the rationale for pursuing a PhD

in education, particularly focusing on the role of teachers in curriculum development and implementation, is grounded in the critical importance of educators within the educational system. Teachers are not merely transmitters of knowledge; they are pivotal players in shaping student development, enhancing educational efficacy, and fostering a conducive learning environment. However, it can be argued that recent empirical research highlights the multifaceted contributions of teachers, such as their involvement in curriculum development, which is essential for ensuring that educational content meets the needs of students and aligns with contemporary pedagogical standards. For instance, Alsubaie (2016) emphasizes the indispensable role of teachers in curriculum design and implementation, while studies by Özgenel and Mert (2019) illustrate teachers' significant impact on overall school effectiveness.

Moreover, teachers are instrumental in guiding students' career paths and implementing inclusive education practices, as noted by Wong et al. (2021) and Ginja & Chen (2023). Their influence extends to fostering emotional intelligence and enhancing academic achievement across various disciplines, further solidifying their position as the cornerstone of educational success (Fauth et al., 2019; Szumski & Karwowski, 2019).

Despite the recognized importance of teachers, there remains a critical gap in research regarding the effectiveness of teacher training programs, particularly in the context of implementing the Single National Curriculum (SNC) in Pakistan. The introduction of the SNC aimed to unify educational standards across provinces, necessitating a thorough evaluation of teacher training initiatives designed to support this curriculum. The need for such research is underscored by the complexities involved in

curriculum implementation, as highlighted by Jadhav and Patnakar (2013) and Apau (2021).

In this pretext, firstly, a rigorous evaluation helps identify areas for improvement in training content, delivery methods, and assessment techniques, ensuring that the programme remains responsive to evolving educational needs. Secondly, it provides a quantifiable measure of the programme's Rate of Improvement, offering valuable insights into its performance trajectory. Thirdly, such evaluations play a pivotal role in justifying training expenditures and securing future budgets, a critical consideration in resource-constrained educational environments.

Moreover, the evaluation process is instrumental in enhancing teacher performance by pinpointing specific areas where additional support or training may be required. This targeted approach not only improves individual teacher competencies but also contributes to overall educational quality. Additionally, by ensuring that training programmes align with teachers' needs and expectations, evaluations can significantly boost teacher satisfaction, potentially improving retention rates and job performance.

In the context of the Single National Curriculum 2021, which aims to develop five key language competencies in English, including Oral Communication Skills, Reading and Critical Thinking Skills, Formal and Lexical Aspects of Language, Writing Skills, and Appropriate Ethical and Social Development, the importance of effective teacher training cannot be overstated. The online training programme organized by the Qaid-e-Azam Academy of Educational Development (QAED) for approximately 30,798 Primary School Teachers (PSTs) represents a significant investment in human capital aimed at realizing the Single National Curriculum objectives.

By evaluating this training programme, this study seeks to provide valuable insights that can inform future iterations of teacher training initiatives. It aims to assess the alignment between the training content and the Single National Curriculum pedagogical and instructional strategies, examine the effectiveness of the online delivery format, and gauge the programme's success in equipping teachers with the necessary skills to implement the new curriculum effectively.

Furthermore, this evaluation is crucial for achieving the broader educational goals set forth by the Single National Curriculum and enhancing the reputation of Pakistan's educational system. By demonstrating a commitment to evidence-based improvement and teacher development, this study contributes to the ongoing discourse on educational reform and quality enhancement in Pakistan.

This study's rationale is grounded in several key considerations, as; critical link between training and implementation by serving as a vital bridge between curriculum design and classroom practice. Evaluating the training programme's effectiveness is essential to ensure that teachers are adequately prepared to translate the Single National Curriculum objectives into tangible learning outcomes. Assessing alignment with curriculum goals by aiming to examine how well the training programme aligns with the Single National Curriculum core competencies and pedagogical approaches. This alignment is crucial for the faithful implementation of the curriculum's vision and objectives. Identifying areas for improvement by critically evaluating the training programme, this research can identify strengths and weaknesses, providing valuable insights for refining and enhancing future training initiatives. This continuous improvement is essential for the long-term success of the Single National Curriculum.

Validating resource allocation by helping justify these expenditures and inform future resource allocation decisions in education. Addressing the challenges of online training by evaluating its effectiveness becomes even more critical. The study will assess whether this modality adequately prepares teachers for the practical challenges of implementing the new curriculum in diverse classroom settings. The findings of this study have the potential to inform educational policy and practice, not only for the ongoing implementation of the Single National Curriculum but also for future curriculum reforms and teacher professional development initiatives. Ultimately, by ensuring the effectiveness of teacher training, this study contributes to the broader goal of enhancing the quality of education in Pakistan. Effective implementation of the Single National Curriculum through well-prepared teachers can lead to improved learning outcomes for students across the nation. This evaluation demonstrates a commitment to accountability in educational reforms, ensuring that the training programme meets its intended objectives and provides value for the invested resources.

Nonetheless, the evaluation of teacher training programs is essential not only for improving educational outcomes but also for enhancing teacher satisfaction and professional development. Engaging teachers in the curriculum development process can lead to greater fulfillment in their roles, as they witness the tangible progress of their students (Yue & Shao, 2020).

Furthermore, pursuing a PhD in this area might contribute to the existing body of knowledge by addressing the urgent need for research on the effectiveness of teacher training programs in the context of the SNC. By focusing on the intersection of teacher effectiveness, curriculum development, and professional development, this research will

provide valuable insights into how educational systems can better support teachers in their critical roles, ultimately leading to improved student learning outcomes and educational success.

In conclusion, this study's rationale is firmly rooted in the critical need to ensure that the ambitious goals of the Single National Curriculum are effectively translated into classroom practice through well-prepared teachers. By evaluating the teacher training programme, this research not only contributes to the immediate success of the SNC implementation but also to the long-term improvement of Pakistan's education system. The insights gained from this study have the potential to shape future educational policies, refine teacher training approaches, and ultimately enhance the quality of education for students across Pakistan. By critically evaluating the Single National Curriculum 2021 teacher training programme, this research aims to contribute to the continuous improvement of Pakistan's educational landscape, ultimately benefiting students, teachers, and the broader society.

1.2 Statement of the Problem

The implementation of Pakistan's Single National Curriculum (SNC) in 2021 represents a watershed moment in the nation's educational landscape, ostensibly addressing the long-standing societal demand for a unified educational framework. However, the mere existence of a standardized curriculum does not guarantee its effective implementation or the realization of its intended outcomes. The crux of the problem lies in the critical gap between curriculum design and its practical execution in classrooms across Punjab.

While the National Curriculum Committee (NCC) has meticulously developed comprehensive guidelines for teaching materials, textbooks, and pedagogical processes,

the effectiveness of these guidelines in practice remains largely unexamined. The dissemination of new textbooks and the initiation of an online Teacher Training Programme in July 2021 mark significant steps towards Single National Curriculum implementation. Nevertheless, the efficacy of this training programme in equipping teachers with the necessary competencies to actualize the Single National Curriculum objectives is yet to be rigorously evaluated.

This research problem is further compounded by the rapid transition to online training modalities, necessitated by contemporary circumstances. The shift raises pertinent questions about the adequacy and effectiveness of virtual professional development in preparing teachers for the nuanced demands of the new curriculum. Moreover, the alignment between the training content and the Single National Curriculum prescribed pedagogies and assessment techniques requires critical scrutiny.

The fundamental issue at stake is whether the current teacher training programme effectively bridges the gap between the theoretical framework of the Single National Curriculum and its practical implementation in diverse classroom settings. This study argues that without a comprehensive evaluation of the training programme's efficacy, there is a significant risk of a disconnect between the curriculum's aspirations and its actual impact on teaching and learning processes.

The existing body of literature reveals a significant research gap concerning the evaluation of teacher training programs specifically designed for the implementation of the Single National Curriculum (SNC) in Pakistan. While previous studies have extensively examined various aspects of teacher training and its impact on educational outcomes, there is a notable scarcity of research focused on the effectiveness of these programs in the context of the SNC, which was introduced to

standardize educational content across the country. The implementation of the SNC in 2021 necessitates a critical assessment of the training initiatives provided to educators, as these initiatives are pivotal for ensuring that teachers possess the necessary competencies to effectively deliver the revised curriculum. Research by Jadhav and Patnagar (2013) and Apau (2021) has highlighted the complexities involved in curriculum implementation, yet there remains a lack of empirical evidence specifically addressing how teacher training influences the successful adoption of the SNC. This gap is particularly concerning given that teacher effectiveness is recognized as a primary determinant of student learning outcomes (Bardach et al., 2021). Therefore, this study aims to systematically evaluate the teacher training programs associated with the SNC, thereby contributing to the understanding of how such initiatives can be optimized to enhance educational practices and outcomes in Pakistan.

Despite the critical role of teachers in curriculum development and implementation, there remains a significant gap in research regarding the effectiveness of teacher training programs, particularly in the context of implementing Pakistan's Single National Curriculum (SNC) of 2021. The SNC aims to unify educational standards across provinces and develop key language competencies in English, necessitating thorough evaluation of the teacher training initiatives designed to support this curriculum. Evaluating the effectiveness of the training program organized by the Qaid-e-Azam Academy of Educational Development (QAED) for Primary School Teachers (PSTs) is essential to ensure that teachers are adequately prepared to translate the SNC objectives into tangible learning outcomes. This study seeks to provide valuable insights that can inform future iterations of teacher training initiatives and contribute to the continuous improvement of Pakistan's education system.

Therefore, this research seeks to critically investigate the Online Teachers Training Programme for Single National Curriculum implementation, focusing on its adherence to Single National Curriculum guidelines, its effectiveness in enhancing teacher competencies, and its potential to facilitate the successful realization of the Single National Curriculum goals. By addressing this crucial research problem, the study aims to contribute vital insights that could inform future iterations of teacher training programmes and, ultimately, the successful implementation of the Single National Curriculum across Pakistan.

1.3 Objectives of the Study

This study was carried out keeping in view the following objectives;

1. To evaluate alignment of Teacher Training modules with pedagogies suggested in Single National Curriculum (SNC), 2021.
2. To assess the effectiveness of Teacher Training Modules in preparing the teachers for implementation of Single National Curriculum (SNC), 2021.
3. To analyze the content of Training Modules in relation to the assessment techniques proposed in SNC 2021.
4. To gauge teachers' perceptions of the training received for implementing SNC 2021 pedagogies and instructional strategies.
5. To investigate Grade V students' experiences with the new classroom pedagogies implemented by English language teachers as per SNC 2021.
6. To examine the extent to which teachers are implementing newly learned SNC 2021 pedagogies in their classrooms.

7. To evaluate Master Trainers' perspectives on the effectiveness of the SNC 2021 teacher training programme

1.4 Research Questions

This study was based on finding out answers to following research questions;

- 1- How well does the content of English Language teacher training modules align with the SNC 2021 guidelines?
- 2- To what extent have English language teachers developed the knowledge and skills required to implement the competencies, benchmarks, and standards outlined in SNC 2021?
- 3- How has the SNC 2021-based training influenced English language teachers' development of critical awareness, self-direction, reflectiveness, analytical skills, and adaptability?
- 4- What discrepancies exist between English language teachers' perceptions of new SNC 2021 pedagogies and assessment techniques and their actual implementation?
- 5- To what degree are English language teachers incorporating SNC 2021 teaching methodologies from their training into their classroom practice?
- 6- How do Grade V students perceive their teachers' implementation of new SNC 2021 pedagogies and instructional strategies in English language classrooms?
- 7- What are the Master Trainers' perspectives on the effectiveness and outcomes of the English language teacher training program for SNC 2021 implementation?

1.5 Delimitations

Due to time, financial and human constraints, this study was delimited to, as follows;

- 1) Online Training on Single National Curriculum, 2021 organized by QAED in Punjab was evaluated.
- 2) Primary School Teachers (PSTs) in Punjab who got Online Training on Single National Curriculum were included in the study.
- 3) Primary School Teachers (PSTs), teaching English in public sector schools were included in the study.
- 4) Primary School students studying in Grade V class in public school in Punjab were included in the study.

1.6 Limitations of the Study

- 1- Conduct longitudinal research to assess the long-term impacts of the teacher training program on teaching practices and student learning outcomes over time.
- 2- Design studies that include control groups of teachers who did not participate in the training to provide a clearer picture of the program's effectiveness and its direct impact on teaching practices.
- 3- Conduct research that examines the contextual factors influencing the implementation of the SNC across different regions.
- 4- Analyze how external factors, such as school leadership, community support, and classroom resources, affect the implementation of the training program and the SNC.

1.7 Conceptual Framework

Based on objectives, research questions and review of literature, conceptual framework of this study was devised as shown in the figure below;

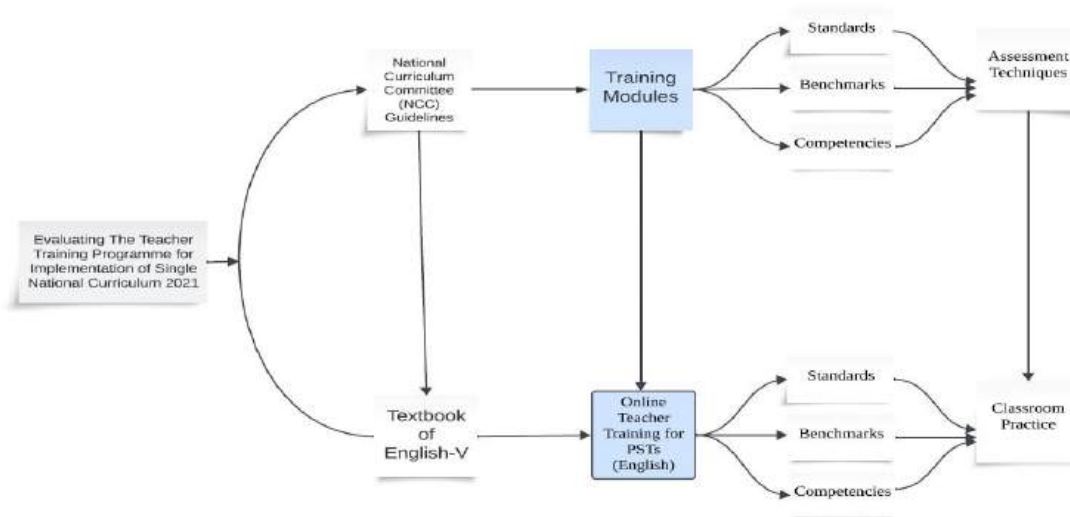


Figure 1.1: Conceptual Framework

In the context of development and implementation of the Single National Curriculum (SNC) 2021 aligned with guidelines provided by the National Curriculum Committee there arose a need for teacher training to implement Single National Curriculum effectively. For this purpose, Training modules and materials were developed for training of Primary School Teachers (PSTs) who were to teach newly adopted English-V textbook to the students of grade-v.

Teachers were trained in the light of competencies, benchmarks and standards described in National Curriculum Committee guidelines and the relevant training modules in an Online teacher training model for one day. Teachers were expected to bring a pedagogical change in their respective classroom practices through Implementation of SNC-aligned teaching strategies and the use of new assessment techniques

Student learning outcomes were investigated by classroom observation and students' opinion regarding teaching practices in their classroom. Evaluation of relevance of training

content to Single National Curriculum, 2021, effectiveness of training delivery, impact on teaching practices and student outcomes in light of their opinion was studied.

Similarly, in depth interviews were conducted with the Master Trainers for validation of the findings of the teachers' and students' opinion and classroom observation. This inclusion of qualitative data helped in better understanding of the results of the study.

This framework provides a structured approach to evaluating the teacher training programme. It considers the various elements involved in the training process, from inputs to long-term impacts to investigate the training programme's success.

1.8 Significance of the study

This study may measure up to be significant for educational policy implementation by providing crucial insights into the effectiveness of teacher training programs in implementing large-scale curriculum reforms. It will help policymakers understand the challenges and successes in translating educational policies into classroom practices, potentially informing future policy decisions and implementation strategies. The findings of this study may be valuable for long-term educational planning in Pakistan. By understanding the effectiveness of current training approaches, educational planners can make more informed decisions about future curriculum reforms and teacher development initiatives.

Similarly, by evaluating the training program, this research may contribute to the understanding of effective teacher professional development practices. It will highlight which aspects of the training are most beneficial in preparing teachers for curriculum

changes, potentially leading to improvements in teacher training methodologies nationwide.

Moreover, this study may shed light on the process of standardizing curriculum implementation across diverse educational settings. This is particularly significant in the context of Pakistan's varied educational landscape, offering insights into how a single national curriculum can be effectively disseminated and applied. Besides this, through its focus on teacher training and curriculum implementation, this research may contribute to the broader goal of enhancing educational quality. It may provide a path way to how well-trained teachers can improve learning outcomes, potentially leading to better educational experiences for students across the country. By identifying strengths and weaknesses in the current training program, this study will pave the way for continuous improvement in teacher preparation for curriculum changes. It will establish a framework for ongoing evaluation and refinement of teacher training programs. In other words, the findings of this study may be valuable for educational administrators and policymakers in making informed decisions about resource allocation for teacher training programs and help identify which aspects of training yield the most significant results, allowing for more efficient use of educational resources.

This research may also contribute to the academic literature on curriculum implementation and teacher training, bridging the gap between theoretical approaches and practical realities in the classroom by provide empirical evidence on the effectiveness of various training components in real-world settings. Moreover, this study may provide insights into how a standardized curriculum and associated teacher training can be made relevant across diverse cultural and socio-economic contexts within Pakistan. This is

crucial for ensuring equitable educational opportunities across the country. While focused on Pakistan, this research could have broader implications for other countries undertaking similar large-scale curriculum reforms. It may contribute to the global discourse on effective strategies for implementing national curricula and preparing teachers for educational change.

This significance statement highlights the multifaceted importance of your research, emphasizing its potential impact on educational policy, practice, and theory by possibly providing valuable feedback regarding effectiveness and suitability of training on Single National Curriculum to policy makers, curriculum experts, content developers, teachers, and parents alike. Based on findings of the proposed study, new modules and themes of teacher training may be proposed for effective teaching learning of Textbooks and better curriculum implementation. The findings of proposed study can be significant in suggesting improvement in the content of training modules to be adopted for teacher training. Findings of this study may provide basis for development and review of teacher training programme for Elementary and Secondary Level curricula to be implemented in 2022 and 2023 respectively.

1.9 Research Methodology

1.9.1 Research Design

To reach an overall perception of the study, and to achieve objectives, this study was conducted using the concurrent parallel design, as one of mixed-methods designs, in descriptive research.

Such research can be denoted as qualitative plus quantitative (Creswell, 2013). This research design involves concurrent conduct of the quantitative and qualitative elements in

the same stage of research process, before weighing both the methods alike, analyzing the qualitative and quantitative components separately, but interpreting the results together (Creswell, 2013). This approach helps to provide a broader and complete vision of a research problem (Almeida, 2018). In this way, more than one data sets were obtained, analyzed separately, and interpreted jointly by triangulation of data.

1.9.2 Population

Keeping in view the research design of this study, all the 303,666 (public 201,005, private 102,661) Elementary School Teacher/Primary School Teachers (ESE/PST) who were teaching in public schools in Punjab were considered as population of the study. Moreover, students enrolled at the primary level were also included in the population of this study (6,656,404). Additionally, 419 master trainers of English for Online Teacher's Training for English Teachers were included in the population.

1.9.3 Sample

The sample size of this study comprised of 900 Teachers, 135 Students of class V and five (05) Master Trainers from Punjab. More over classroom observation of six lessons each (36 lessons) in six (06) schools was also conducted (03 male, 03 female).

1.10 Operational definitions

Benchmarks

An indication of what the students will be able to accomplish at the end of each developmental level in order to meet the standards.

CIPP Model

The Context, Input, Process and Product evaluation model to evaluate implementation and success of teacher training programme.

Competencies

Key learning areas that involve applied learning skills and knowledge related to teaching and learning of English to Class-V.

Content Analysis

Method of analyzing alignment of text of National Curriculum Committee (NCC) guidelines with the training modules for training of teacher of English.

Critical Thinking

A practice of thinking the things through carefully describing and considering significant alternatives.

Curriculum Alignment

A process of ensuring coherence and consistency between intended learning outcomes as specified in formal curriculum guidelines and teaching methods.

Curriculum Implementation

Extant to what teachers deliver instructions and assessment through practicing specific pedagogies.

Programme Evaluation

Systematic method of collecting, analyzing, and using data to evaluate effectiveness and efficiency of an Online Teacher Training Programme for implementation of Single National Curriculum, 2021.

Single National Curriculum

One system for all, in terms of curriculum, medium of instructions and common assessment to ensure equal and fair opportunity of education for all the students.

Standards

A description of a particular competency by specifying broadly the knowledge, skills and attitudes which the students of Grade-V are supposed to acquire through the end of Primary Level of Education.

1.11 Summary

Development and implementation of a Single National Curriculum, under the slogan of ‘One Nation, One Curriculum’ has been a long due demand of all the stakeholders to bring up harmony in educational and learning needs of students in Pakistan. To cater this demand, the Single National Curriculum, 2021 (SNC) was implemented for classes Nursery-V in the academic session 2021-22. The content of this curriculum was designed based on student-centered approach. To update concerned teachers’ knowledge and skills as per pedagogical requirements of the new curriculum, an online training programme was imparted for the teachers teaching English at Primary level. This research study was carried out to evaluate the successfulness of this training programme so that the results of this study may suggest any improvement to the stakeholders including policy makers, curriculum developers, school leaders, teachers, and students alike.

CHAPTER 2

LITERATURE REVIEW

This chapter encompasses theory and concept of programme evaluation, teacher training and curriculum implementation by discussing and critically elaborating these overall concepts considering literature and research, for developing and understanding of these concepts in Pakistani perspective.

2.1 Programme Evaluation

Programme evaluation is a systematic method for collecting, analyzing, and using information to answer questions about projects, policies, and programmes, particularly about their effectiveness and efficiency as indicated by Giancola, 2020, In the words of Linfield, & Posavac. (2018), it is a process that consists of collecting, analyzing, and using information to assess the relevance of a public programme, its design, implementation, improvement, or outcomes. Mertens, & Wilson., 2012, point out that programme evaluation is a process of systematic appraisal used to determine the value, worth, or meaning of something, such as a programme, a method, an approach, or a situation. It can be implied that the goal of programme evaluation is to provide information that contributes to decisions that shape programme goals, strategic plans, and resource allocation. Programme evaluations can serve several functions, including programme improvement, accountability, and communication of programme goals and accomplishments to external audiences). Therefore, programme evaluation is an essential tool for assessing the effectiveness and efficiency of programmes and policies.

The significance of programme evaluation in assessing and enhancing public initiatives cannot be overstated. This systematic approach to collecting, analyzing, and utilizing data serves as a critical tool for scrutinizing the efficacy and efficiency of projects, policies, and programmes (Giancola, 2020). Despite its widespread application, the full potential of programme evaluation remains underexploited in many sectors. This paper contends that a more rigorous and consistent implementation of programme evaluation methodologies is imperative for optimizing public resource allocation and achieving desired outcomes.

The process of programme evaluation encompasses a comprehensive assessment of a public initiative's relevance, design, implementation, and results (Linfield & Posavac, 2018). However, it is not merely a retrospective analysis; rather, it is a dynamic mechanism that should be integrated throughout the lifecycle of any programme. This integration, we argue, is essential for fostering a culture of continuous improvement and evidence-based decision-making in public policy.

Furthermore, the multifaceted nature of programme evaluation extends beyond mere performance measurement. It serves as a catalyst for programme refinement, ensures accountability, and facilitates the communication of programme objectives and achievements to stakeholders (Mertens & Wilson, 2012). These functions, when properly leveraged, can significantly enhance the overall impact and perception of public initiatives. Therefore, this paper posits that a more widespread and sophisticated application of programme evaluation techniques is crucial for advancing the effectiveness and efficiency of programmes and policies in an increasingly complex societal landscape.

2.1.1 Models of Programme Evaluation

An evaluation model formulates question or set of questions that a particular evaluation seeks to answer. It also involves specific methods to predetermine the criteria for evaluation (Hansen, 2005). The literature on programme evaluation and its effectiveness indicates several categories of programme evaluation models.

Earlier, Hansen (2005) suggested some of the most recently appeared and comprehensive categories of programme evaluation. These categories consist of six major categories of models that are commonly used for purpose of programme evaluation, namely; results models, process models, system models, economic models, actor models and programme theory models.

These programme evaluation categories are based on the focus, objectives and field of evaluation (Garboan, 2008; Shakman & Rodriguez., 2015). For instance, results models focus on the outcomes of a programme, while process models focus on the processes involved in implementing a programme (Frye, & Hemmer., 2012). On the other hand, as described by Kim, et.al., 2022, system models focus on the interactions between the different components of a programme, while economic models focus on the costs and benefits of a programme. Similarly, actor models focus on the roles and responsibilities of the different actors involved in a programme, while programme theory models focus on the underlying assumptions and theories that guide a programme (Cresswell, et al., 2010).

Keeping in view the objectives of evaluation, some other categories of programme evaluation models include formative evaluations, summative evaluations, impact evaluations, and outcome evaluations. Formative evaluations are used to gather information during the development of a programme, while summative evaluations are

used to assess the effectiveness of a programme (Allal, 2023). Impact evaluations are used to determine the causal relationship between a programme and its outcomes, while outcome evaluations are used to measure the outcomes of a programme (Patton, 2023). Therefore, from amongst these categories of programme evaluation models, a particular model can be used to evaluate the effectiveness and efficiency of programmes and policies (Patton, 2023). A brief detail of these evaluation models is discussed for understanding their focus, objectives and methods.

2.1.2 Results Models of Programme Evaluation

The exposition on results models in programme evaluation provides a critical foundation for understanding one of the key approaches in the field. However, to elevate this discussion to a more argumentative academic level, we must critically examine the assumptions, limitations, and implications of these models. Let us reframe the content with a more analytical and questioning stance.

Results models, a subset of programme evaluation methodologies, are often lauded for their focus on programme outcomes and their alignment with summative evaluation approaches. While their utility in assessing goal achievement is evident, particularly in educational contexts (Balmer et al., 2019), we must question whether this outcome-centric approach provides a comprehensive understanding of programme efficacy.

The interrelation between results models and summative evaluation raises a crucial question: Does this focus on end results potentially overlook valuable insights that could be gleaned from the programme's developmental stages? This concern becomes

particularly salient when considering the dynamic nature of many contemporary programmes, where adaptability and continuous improvement are often key to success.

The array of results models, including Tyler's objective model, Stake's responsive model, Scriven's goal-free model, and the CIPP model, offers evaluators a diverse toolkit. However, this diversity also presents challenges in model selection and application. How can evaluators ensure they are selecting the most appropriate model for a given context, and what are the implications of this choice on the evaluation's outcomes and subsequent programme improvements?

The goal-attainment model and the effects model, as subcategories within results models, present distinct approaches to measuring programme success. The goal-attainment model's focus on predetermined objectives offers clarity but may risk overlooking unintended positive outcomes. Conversely, the effects model's broader consideration of programme consequences provides a more holistic view but may lack the specificity needed for targeted improvements. This dichotomy raises a critical question: How can evaluators balance the need for specific, measurable outcomes with the importance of capturing broader, potentially unforeseen programme effects?

While Frye and Hemmer (2012) assert that results models can aid organizations in programme improvement, we must critically examine the mechanisms by which this improvement occurs. Does a focus on results alone provide sufficient information for meaningful programme enhancement, or does it risk encouraging a 'teaching to the test' mentality where programmes are designed to meet evaluation criteria rather than holistic objectives?

The assertion that results models are "an essential tool for evaluating the effectiveness of programmes and policies" warrants scrutiny. While their value is evident,

labeling them as "essential" potentially undermines the importance of other evaluation approaches, particularly those that focus on process, context, or stakeholder perspectives. Furthermore, the brief mention of process models as explanatory frameworks focusing on implementation (Balmer et al., 2019) hints at a potential limitation of results models. How can evaluators effectively integrate insights from both results and process models to provide a more comprehensive understanding of programme effectiveness?

In conclusion, while results models offer valuable insights into programme outcomes, their application must be approached with critical awareness of their limitations and potential biases. The field of programme evaluation would benefit from further research into integrated approaches that combine the strengths of results models with other evaluation methodologies, thereby providing a more nuanced and comprehensive understanding of programme effectiveness and pathways for improvement.

2.1.3 Process Models of Programme Evaluation

Contrary to results models, focus of process models is on the processes involved in implementation of a programme rather than results of outcome of a programme, in which process evaluation is conducted which is usually concomitant with the implementation phase of the programme in real time, or by historical analyses (Balmer, et al., 2019). In this way, results models and process models are two categories of programme evaluation models that differ in their focus. If results models focus on the outcomes of a programme, the process models focus on the processes involved in implementing a programme.

Balmer, et al., 2019 indicate another difference between these two models is that results models are interrelated with summative evaluation and focus on the effectiveness of a programme. While Frye, and Hemmer, (2012) are of the opinion that the goal-attainment model and the effects model are subcategories of the results model.

Process evaluation, on the other hand, is conducted usually concomitant with the implementation process and outcome in terms of results. The evaluation consists of comparisons of planned and realized input, structure, process, and results or in benchmarking. Therefore, the main difference between results models and process models is that results models focus on the outcomes of a programme, while process models focus on the processes involved in implementing a programme (Garboan, 2008).

Apart from focusing on results or process, some programme evaluation models are devised to evaluate the system of particular programme, which are denoted as system models of evaluation.

2.1.4 System Model

In this model of evaluation, system perspective is used to evaluate a programme in a model which involves, input, structure, process, and outcome in terms of results. The evaluation consists of comparisons of planned and realized input, structure, process, and results or in benchmarking. Resultantly, the system model of programme evaluation is a comprehensive model that evaluates the effectiveness of a programme in terms of its inputs, processes, outputs, and outcomes (Sankaran, & Saad., 2022). The system model is a type of evaluation model that takes a holistic approach to programme evaluation. The system model is a complex model generated by the selection, analysis, and synthesis of simple evaluation models. The system model is used to evaluate a programme overall effectiveness and efficiency. The system model is useful for evaluating complex programmes that involve multiple components and stakeholders (Sankaran, & Saad., 2022). Therefore, this model is used in evaluating complex programmes.

As evaluation of a programme may also involve evaluation of finance and budget as the input and economic gain as output, some programme evaluation models focus on economic aspects of a programme.

2.1.5 Economic Model

In contrast to the result, process or system evaluation, the economic model of programme evaluation is a type of programme evaluation that assesses the economic efficiency of a programme. The economic model evaluates the costs and benefits of a programme to determine whether the programme is worth the investment (Turner, et al., 2021). The economic model is used to determine the return on investment of a programme. The economic model is widely applied in economics to assess the effects of policy interventions and other treatments of interest (Turner, et al., 2021). It implies that if an educational programme is evaluated in terms of its economic returns, rather than its educational output, the economic model of evaluation might be used to this purpose. Furthermore, every programme involves certain stakeholders whose involvement and effect on the programme may also need to be evaluated. For this purpose, actor model of programme evaluation is used.

2.1.6 Actor Model

Another aspect of programme valuation can be to assess it by focusing as an actor model or Client-oriented model, Stakeholder model, Peer review model, is based on the actors, stakeholder, or client's perspective. The actor model of programme evaluation is a type of programme evaluation that focuses on the stakeholders involved in a programme. The actor model evaluates the programme effectiveness in meeting the needs and expectations of the stakeholders. The actor model is useful for evaluating programmes that

involve multiple stakeholders with different interests and needs. It is also a systems approach to programme evaluation model for evaluating quality in education includes five systems divided into three groups namely, social, technical, and educational. The systems approach-based programme-evaluation model for quality implementation in education is an innovative evaluation model integrating the systems approach into quality tools by involving the stakeholders (Stern, et al., 2012). Moreover, programme evaluation may focus on the underlying theory based on which a particular programmed is carried out, this leads to formulate a programme theory model of evaluation.

2.1.7 Programme Theory Model

This model focuses on assessing the validity of the programme theory on which the given intervention occurs. The target of the programme theory model is to continually improve programme theory according to the changing context (Shakman & Rodriguez., 2015). Shakman and Rodriguez (2015) highlight the model's focus on continually improving programme theory in response to changing contexts.

The programme theory model, also known as the logic model, is a type of programme evaluation model that explains how the activities of an intervention contribute to a chain of results. The programme theory model is a visual representation of the relationships among the inputs, activities, outputs, and outcomes of a programme or intervention. The programme theory model is useful for developing an evaluation design and deciding which participant outcomes are the most important. The programme theory model is a comprehensive model that can be used to evaluate the effectiveness of a programme in achieving its goals and objectives (Shakman & Rodriguez., 2015). Breuer

et al. (2015) and Shakman and Rodriguez (2015) emphasize the importance of stakeholder involvement in developing the theory of change.

For example, theory of change evaluation is an approach to programme evaluation that involves mapping out the underlying assumptions and logic of a programme, and then evaluating how well the programme is achieving its intended outcomes. The theory of change is a systematic representation of the programme goals and the mechanisms by which it is expected to achieve those goals (Shakman & Rodriguez., 2015).

The resource-intensive nature of theory of change evaluations, as highlighted by Blamey and Blamey & Mackenzie (2007) and Reinholz & Andrews (2020), is a significant concern. To conduct a theory of change evaluation, the evaluator first works with programme stakeholders to develop a theory of change that outlines the programme goals, the assumptions underlying the programme, and the intended mechanisms by which the programme will achieve its goals. The evaluator then evaluates the programme against the theory of change, looking at how well the programme is implementing its strategies and whether the outcomes are consistent with the expected mechanisms of change (Breuer, et al., 2015; Shakman & Rodriguez., 2015).

One of the key benefits of theory of change evaluation is that it helps to clarify and make explicit the underlying assumptions of the programme, and the logic by which it is expected to achieve its intended outcomes. This explicitness can help programme stakeholders to identify areas where the programme may not be working as intended, and to make informed decisions about programme improvements or adaptations (Blamey & Mackenzie, 2007).

The explicitness of assumptions in the theory of change model, as noted by Blamey and Mackenzie (2007), is indeed beneficial. However, this approach also has potential

limitations as it can be resource-intensive and may require significant time and effort to develop and evaluate. Additionally, it may be challenging to identify and measure all the expected outcomes of a programme, particularly if the programme has multiple goals or targets that are difficult to quantify or measure (Blamey & Mackenzie., 2007; Reinholz, & Andrews., 2020).

Based on the main categories of programme evaluation models, particular models of programme evaluation have been devised and used according to needs and objectives of evaluation which are discussed ahead. While the programme theory model offers a structured and comprehensive approach to evaluation, it also presents new challenges and areas for critical inquiry.

2.1.8 Constructivist Model

The constructivist model of programme evaluation, proposed by Egon and Yvonna (2001), represents a paradigm shift in evaluation methodologies. Grounded in three fundamental assumptions—ontological, epistemological, and methodological—this model diverges significantly from traditional evaluation approaches. Unlike conventional models that prioritize inputs, activities, outputs, outcomes, and impacts, the constructivist model places paramount importance on the learning process and collective progress of participants (Mensah, 2015). This shift in focus aligns with the constructivist epistemology, which posits that learning is an active, constructive process rather than a passive reception of information.

While the constructivist model offers distinct advantages, particularly in evaluating educational programmes, it is not without limitations. Its strength lies in its capacity to provide a nuanced understanding of programme effectiveness through a focus on collective

learning processes. However, this approach presents challenges in terms of objective measurement and cross-programme comparability. Moreover, the resource-intensive nature of constructivist evaluation may render it impractical for certain contexts (Jack-Waugh, 2023; Mhlango et al., 2023).

It is imperative to note that the constructivist model's applicability is not universal. Its efficacy is most pronounced in learning-centric programmes, potentially limiting its utility in evaluating economic or social interventions that do not explicitly involve learning components (Shah, 2019). This specificity underscores the need for careful consideration when selecting evaluation methodologies, as the chosen approach must align with the programme's nature and objectives to yield meaningful insights.

The constructivist model is used to evaluate programmes that involve learning, such as educational programmes. The constructivist model is different from other programme evaluation models because it focuses on the learning process and the collective progress of the participants, rather than the inputs, activities, outputs, outcomes, and impacts of the programme (Mensah, 2015).

The advantages of using the constructivist model in programme evaluation are that it focuses on the learning process and the collective progress of the participants, which can lead to a deeper understanding of the programme effectiveness. The constructivist model is useful for evaluating programmes that involve learning, such as educational programmes. The disadvantages of using the constructivist model in programme evaluation are that it can be difficult to measure the effectiveness of the programme objectively, and it may be challenging to compare the results of the programme with other programmes. The constructivist model may also require more resources and time to implement than other programme evaluation models. Additionally, the constructivist model may not be suitable

for evaluating programmes that do not involve learning, such as economic or social programmes (Jack-Waugh, 2023; Mhlongo, et al., 2023; Shah, 2019).

2.1.9 Qualitative Model

Patton 's (2002) qualitative model of programme evaluation represents a significant departure from quantitative-centric approaches, emphasizing the utilization of qualitative methods such as observation, individual interviews, focus groups, and the Delphi method. This model is particularly efficacious when seeking to elucidate nuanced details about specific programmes (Patton, 2023). By prioritizing the collection and analysis of qualitative data, this approach offers a profound understanding of programme effectiveness, especially in contexts characterized by complex processes and interactions, such as social and educational interventions.

The qualitative model's strengths lie in its capacity to provide rich, contextual insights and its inherent flexibility in data collection and analysis. However, these advantages are counterbalanced by potential limitations, including resource intensiveness and challenges in generalizability (Busetto et al., 2020). This trade-off between depth of understanding and breadth of applicability underscores the need for careful consideration when selecting evaluation methodologies.

The implementation of the qualitative model follows a structured yet flexible process, comprising five key stages: identification of research questions and objectives, selection of appropriate qualitative data collection methods, data collection and organization, thematic analysis and interpretation, and reporting of findings and conclusions (Busetto et al., 2020). This process demands a high degree of adaptability from

the evaluator, who must tailor methods and techniques to the specific context of the programme and its participants.

While the time and resource investment required for qualitative evaluation can be substantial, the potential for generating in-depth, nuanced understanding of programme effectiveness is significant. This approach offers valuable insights that may be overlooked by more quantitative methods, particularly in complex, socially-embedded programmes. However, the challenge of balancing depth with generalizability remains a critical consideration for researchers and practitioners employing this model (Busetto et al., 2020; Patton, 2023).

The qualitative model of programme evaluation, while not without limitations, offers a powerful tool for uncovering the intricate dynamics and outcomes of complex interventions. Its application requires careful consideration of research objectives, resource availability, and the nature of the programme under evaluation. Future research may benefit from exploring hybrid approaches that leverage the strengths of both qualitative and quantitative methodologies to provide a more comprehensive evaluation framework.

2.1.10 Utilization-focused Evaluation Model

According to this model, the evaluation process starts together with the design of the project, and ends after its implementation. The focus is on the different utilities given to evaluation by the stakeholders. This is a model of programme evaluation that focuses on ensuring that evaluation findings are used and acted upon, by setting primary goal to improve the programme being evaluated, rather than simply providing information about its effectiveness. This approach is intended to ensure that evaluation efforts are useful, practical, and relevant to programme stakeholders (Patton, 2023).

This model involves engaging programme stakeholders in the evaluation process, to ensure that the evaluation is relevant to their needs and concerns. The evaluator works closely with stakeholders to identify evaluation questions that are most relevant and useful to them, and to determine how evaluation findings will be used to improve the programme (Patton, 2023).

Ongoing evaluation is done, with regular feedback provided to programme stakeholders. The evaluator uses a range of data collection methods, including surveys, interviews, and focus groups, to gather data about the programme and its impact (Patton, 2023).

This model is an approach to programme evaluation that emphasizes the use of evaluation findings to improve the programme and its outcomes, based on the idea that evaluation should be useful and used to design, innovate, and adapt initiatives focused on making the world more equitable and sustainable (Patton, 2023).

This model involves stakeholders in the evaluation process and focuses on the needs and interests of the stakeholders. The Utilization-Focused Evaluation Model emphasizes the use of evaluation findings to improve the programme and its outcomes, rather than just measuring the effectiveness of the programme.

One of the key benefits of this model is that it promotes stakeholder engagement and participation in the evaluation process, which can increase buy-in and support for the programme. By focusing on utilization, this model helps to ensure that evaluation findings are acted upon and used to improve the programme (Patton, 2023).

This model is useful for evaluating programmes that involve complex processes and interactions, such as social and educational programmes. The Utilization-Focused Evaluation Model involves a cyclical process of planning, data collection, analysis, and

reporting, with a focus on using the findings to improve the programme and its outcomes (Patton, 2023).

However, one limitation of this model is that it may not provide a comprehensive picture of the effectiveness of the programme, because the evaluation questions and methods are focused on stakeholder needs and concerns, rather than predetermined evaluation criteria. Moreover, this model is resource-intensive, requiring ongoing engagement with stakeholders and regular data collection and feedback (Patton, 2023).

The key principles of this model are to make evaluations useful and relevant to stakeholders, to involve stakeholders in the evaluation process, and to focus on the use of evaluation findings to improve the programme and its outcomes. It emphasizes the importance of making evaluations useful and relevant to stakeholders, which involves identifying the needs and interests of the stakeholders and tailoring the evaluation to meet those needs (Patton, 2023).

This model involves stakeholders in the evaluation process, which can help to ensure that the evaluation is relevant and useful to them. It focuses on the use of evaluation findings to improve the programme and its outcomes, which involves identifying the key questions that need to be answered, collecting, and analyzing data to answer those questions, and using the findings to make informed decisions about the programme. It is a cyclical process that involves planning, data collection, analysis, and reporting, with a focus on using the findings to improve the programme and its outcomes. It is useful for evaluating programmes that involve complex processes and interactions, such as social and educational programmes (Patton, 2023).

Utilization-Focused Evaluation emphasizes the importance of making evaluations useful and relevant to stakeholders, and focuses on the use of evaluation findings to

improve the programme and its outcomes. It involves stakeholders in the evaluation process, which can help to ensure that the evaluation is relevant and useful to them. It is a cyclical process that involves planning, data collection, analysis, and reporting, with a focus on using the findings to improve the programme and its outcomes (Patton, 2023).

It is based on the premise that evaluations should be judged by their utility and actual use, which means that evaluators should facilitate the evaluation process and design any evaluation with careful consideration of how every step that is completed, from beginning to end, will affect use (Patton, 2023).

2.1.11 Experimental and Quasi Experimental Model

Programme evaluation can be completed using different research designs, including experimental and quasi-experimental models. Experimental designs randomly assign participants to treatment and control groups to assess programme impacts (Courtney & Wulcsyn, 2021; Thomas, 2020) Quasi-experimental designs, on the other hand, do not randomly assign participants to groups but still assess whether an intervention can determine programme impacts (Choueiry, 2023; Courtney & Wulcsyn, 2021; Frye & Hammer, 2012).

2.1.12 Logical Model

A logic model is a plan or road map for programme development and delivery that is foundational for programme evaluation (CYFAR, 2023). It provides a critical single document to ensure that a programme stays on course to achieve the identified outcomes. Logic models are a visual representation of a programme, displaying the resources available, the short and long-term goals, and the activities designed to help achieve those goals (Shakman, & Rodriguez., 2015).

These models are used to help write grant proposals. A logic model is also known as a theory of action and is a well-specified conceptual framework that identifies key components of the proposed process, product, strategy, or practice. This model has the characteristics of being short, often only one page. This model may take different forms, and no two are identical. It explains the goals and practices of an organization clearly and simply (Shakman, & Rodriguez., 2015).

2.1.13 Kirkpatrick's Four Level Model

The Kirkpatrick Model, as elucidated by Kirkpatrick & Kirkpatrick (2016), represents a seminal framework in the evaluation of training and educational programmes. Its widespread adoption and enduring relevance in both formal and informal learning contexts underscore its significance in the field of programme evaluation.

As described by Kirkpatrick & Kirkpatrick., 2016, this model's four-level structure—Reaction, Learning, Behavior, and Results—provide a comprehensive approach to assessing training effectiveness. This hierarchical framework allows for a nuanced understanding of programme impacts, progressing from immediate learner responses to long-term organizational outcomes.

At the Reaction level, according to Kirkpatrick & Kirkpatrick., 2016, the model addresses the crucial aspect of learner engagement and satisfaction. This initial assessment, while sometimes criticized as superficial, serves as a vital indicator of programme palatability and perceived relevance. It provides valuable insights into the learner experience, which can significantly influence motivation and subsequent learning outcomes.

The Learning level delves deeper, focusing on knowledge acquisition and skill development. This assessment is critical in determining whether the programme has achieved its immediate educational objectives as indicated by Kirkpatrick & Kirkpatrick., 2016. However, it is important to note that positive results at this level do not necessarily translate to behavioral changes or organizational impacts.

The Behavior level represents a significant leap in evaluation complexity, attempting to measure the transfer of learning to real-world contexts. As depicted by Kirkpatrick & Kirkpatrick., 2016, this level is particularly challenging to assess, often requiring longitudinal studies and multi-faceted data collection methods. The ability to demonstrate behavioral change is a key indicator of programme effectiveness, bridging the gap between knowledge acquisition and practical application.

The Results level, focusing on organizational outcomes, represents the ultimate measure of programme value. While this level offers the most compelling evidence of programme impact, it is also the most difficult to assess due to the multitude of variables that can influence organizational performance (Kirkpatrick & Kirkpatrick., 2016).

The model's strength, as indicated by Mahmoodi, et al., 2019, lies in its comprehensive approach and its recognition that training effectiveness must be evaluated at multiple levels. However, it is not without limitations. The linear progression implied by the model may not always reflect the complex, iterative nature of learning and organizational change. Additionally, the model's focus on organizational results may not fully capture the value of personal development or intangible benefits that don't directly translate to measurable outcomes.

Furthermore, Mahmoodi, et al., 2019, point out the practical implementation of the model, particularly at the higher levels, can be resource-intensive and challenging. Organizations may struggle to isolate the effects of specific training programmes from other influencing factors, potentially leading to attribution errors.

Despite these challenges, the Kirkpatrick Model remains a valuable tool in the evaluator's arsenal. Its structured approach provides a clear framework for comprehensive programme assessment, encouraging evaluators to consider multiple dimensions of effectiveness.

Future research might explore ways to adapt the model to more effectively capture the non-linear aspects of learning and organizational change. Additionally, integrating the model with other evaluation approaches, such as participatory or utilization-focused methods, could enhance its applicability in diverse contexts.

It can be concluded that Kirkpatrick Model offers a robust framework for training and educational programme evaluation. Its comprehensive approach, from learner reaction to organizational results, provides valuable insights into programme effectiveness. However, evaluators should be mindful of its limitations and consider supplementing it with other methods to ensure a holistic assessment of programme impacts.

By using the Kirkpatrick model to evaluate curriculum implementation, educators can gain insights into the effectiveness of the programme and identify areas for improvement. Each level of the model builds upon the previous level, and the evaluation should include data collection methods that are appropriate for each level of evaluation (Mahmoodi, et al., 2019).

The Kirkpatrick Model can be used to evaluate either formal or informal learning and can be used with any style of training. The model is globally recognized as one of the most effective evaluations of training. The Kirkpatrick Model is a useful tool for evaluating the effectiveness of training programmes and can help organizations improve their training programmes (Kirkpatrick & Kirkpatrick., 2016).

2.1.14 CIRO Model

The CIRO model is a training evaluation model that evaluates the effectiveness of management training courses (Deller, 2021). It was developed by Warr, Bird, and, Rackman in 1970, and is hierarchical, which means that practitioners must start by studying Context, before moving through Input, Reaction and Output (Deller, 2021).

The four levels of the CIRO model are Context, Input, Reaction, and Output (Deller, 2021; Frye & Hammer, 2012). The model focuses on measurements taken before and after carrying out the training programme. The CIRO model is one of the models commonly applied in evaluation studies today (Frye & Hammer, 2012).

2.1.15 Philip's RIO Model

Philip's RIO model of programme evaluation, also known as a model of learning evaluation, is considered as a complementary model to Kirkpatrick's four-level model by adding a fifth level of evaluation to it, named as Return of Investment (ROI) (Nouraey, et al. 2020). The model focuses on how to collect data, isolate the effect of training from other factors, and calculate the ROI of a learning programme (Downes, 2023). After determining a learning programme business impact at Kirkpatrick's Level four (4), the impact can be translated into monetary terms and compared to the total cost of the programme to calculate the difference of input cost with the output cost (Downes, 2023). On the other hand, the

Phillips ROI Methodology is a simple process that can be used to generate reliable and accurate data to determine return of investment in a programme.

2.1.16 Brinkerhoff Model

The Brinkerhoff Model, also known as the Success Case Method (SCM), is a learning evaluation model that involves identifying the most and least successful cases within a learning programme and studying them in detail (Downes, 2023). By comparing the successes to the failures, the model helps to identify what needs to be changed to ensure success in future endeavors. The SCM is a rapid, practical, and actionable impact evaluation method that is relied on by foundations, corporations, government agencies, and non-governmental organizations (NGOs) to quickly tell the story of their success with credible evidence that senior leaders understand, trust, and can act on. The Brinkerhoff Model is considered a worthy alternative to other training evaluation models such as the Kirkpatrick's model and Kaufman's five levels of evaluation (Deller, 2021).

2.1.17 Kaufman's Model

Kaufman's Model of Learning Evaluation, also known as Kaufman's Five Levels of Evaluation, is a programme evaluation model that is like the Kirkpatrick Model (Downes, 2023; Hays, 2021). The first four levels of Kaufman's model are based on the Kirkpatrick Model (Hays, 2021). Kaufman's model has five levels of evaluation, which are Input and Process, Micro Levels, Macro Level, Mega Level, and Results for the Customer and Society in General (Muqorobin, et al., 2022). Kaufman's fifth level evaluates results for both the customer and society in general. Kaufman's model is positioned as “more practical” than Kirkpatrick's model (Deller, 2021).

2.1.18 Anderson's Model

Anderson's Model of Learning Evaluation is a programme evaluation model that is a three-stage cycle that helps an organization determine the best training strategy for their needs (Deller, 2021). The three stages of the model are determining the current alignment of training against strategic priorities for the organization, using a range of methods to assess and evaluate the contribution of learning, and using the results to improve the training strategy. The model aims to address two challenges, the evaluation challenge and the value challenge (Downes, 2023).

2.1.19 Learning Transfer Evaluation Model (LTEM)

The Learning Transfer Evaluation Model (LTEM) is a programme evaluation model that was devised by Thalheimer in 2018 as an alternative to Kirkpatrick's model to help organizations and learning professionals determine the effectiveness of their evaluation methods (Downes, 2023). The LTEM provides an overview of which metrics, quantitative and qualitative evaluation concepts can be used in different phases of the learning process. It helps to obtain well-founded conclusions about the return on learning in terms of the learning effects for employees. The model focuses on the transfer of learning and aims to measure the extent to which learning is transferred to the job. The LTEM is a comprehensive model that includes 15 different evaluation factors, grouped into four categories: Learning Factors, Job Factors, Work Environment Factors, and Support and Reinforcement Factors (Downes, 2023).

There are several programme-evaluation models that are best suited for educational programmes, and the choice of model depends on the specific needs of the programme being evaluated. The CIPP Evaluation Model, the Kirkpatrick Four-Step

Evaluation Framework, Tyler's objective model, Stake's responsive model, and the Outcome-Based Evaluation Model are some of the models that are commonly used to evaluate educational programmes (Mahmoodi, et al., 2019).

2.1.20 CIPP Model

The CIPP (Context, Input, Process, Product) model, originally conceptualized by Stufflebeam in the late 1960s and early 1970s, presents a compelling framework for comprehensive programme evaluation. This model's enduring relevance is evidenced by its continued application in its updated form (Stufflebeam, 2016). The CIPP model's strength lies in its holistic approach to evaluation, encompassing four critical components: Context, Input, Process, and Product. Each of these elements plays a pivotal role in assessing programme effectiveness (Stufflebeam, 2001, 2003, 2016).

It can be argued that the CIPP model's comprehensive nature makes it particularly well-suited for evaluating complex educational initiatives such as curriculum implementation. The model's context component, for instance, facilitates a nuanced understanding of the programme's external environment, including broader societal, economic, and political factors that may influence its success. This contextual analysis is crucial for determining the programme's appropriateness and identifying potential challenges that may need to be addressed (Stufflebeam, 2001, 2003, 2016).

Furthermore, the input component of the CIPP model provides a critical lens through which to evaluate the resources invested in the programme. This includes an assessment of curriculum materials, staff training, and other allocated resources. Such a thorough evaluation of inputs is essential for understanding the foundation upon which the programme is built and its potential for success (Stufflebeam, 2001, 2003, 2016).

The process and product components of the model further strengthen its evaluative power. By examining the implementation process and the outcomes achieved, the CIPP model offers a robust framework for assessing both the execution and the results of educational programmes. This comprehensive approach allows for a more nuanced and complete evaluation than models that focus solely on outcomes (Stufflebeam, 2001, 2003, 2016).

Some of the key features of CIPP educational programme evaluation include its being Comprehensive. The CIPP model evaluates the entire programme cycle, from planning and design through implementation and evaluation. This model considers the programme context, input, process, and product, which provides a comprehensive evaluation of the programme effectiveness (Sopha, & Nanni., 2019).

Overall, the CIPP model provides a comprehensive and systematic approach to programme evaluation that is well-suited to the complex and multifaceted nature of education programmes. By focusing on the entire programme cycle, from planning and design through implementation and evaluation, the CIPP model can help educators and policymakers to identify areas for improvement and make data-driven decisions to improve student outcomes (Hakan, & Seval., 2011; Rooholamini, et al., 2017; Sopha, & Nanni., 2019).

It can be contended that the CIPP model's multifaceted approach to evaluation makes it an invaluable tool for educational researchers and policymakers. Its ability to provide insights into all aspects of a programme, from planning to outcomes, positions it as a powerful framework for informing data-driven decisions aimed at improving educational quality and student outcomes. This view is supported by several researchers

who have applied the CIPP model in various educational contexts (Hakan & Seval, 2011; Rooholamini et al., 2017; Sopha & Nanni, 2019).

2.2 Comparison of Programme Evaluation Models

Each of the programme evaluation models have its own strengths and weaknesses and can be used to evaluate different aspects of a curriculum implementation. The choice of which model to use depends on the specific goals and objectives of the evaluation and the context of the programme being evaluated (Gandomkar, 2018; Wang, 2006).

By using these training evaluation models, it is possible to assess the effectiveness of a training programme and identify areas for improvement to ensure that the desired learning outcomes are achieved. Each model has its unique approach to evaluating the effectiveness of a training programme, and organizations can choose the model that best suits their needs (Toosi, et al., 2021).

The CIPP Evaluation Model is a comprehensive model that evaluates the context, input, process, and product of a programme. The Kirkpatrick Four-Step Evaluation Framework is a popular model that evaluates the effectiveness of a programme by measuring the reaction of learners, the knowledge, and skills they acquire, the behavior changes they exhibit, and the results of the training programme. Tyler's objective model evaluates the extent to which a programme meets its objectives, while Stake's responsive model evaluates the programme responsiveness to the needs of its stakeholders. The Outcome-Based Evaluation Model evaluates the outcomes of a programme and measures the extent to which the programme has achieved its goals (Toosi, et al., 2021).

Each of the programme evaluation models discussed above has advantages and disadvantages and is used with respect to objectives, nature of data and evaluation purposes (Muqorobin, 2022). The evaluator must decide which evaluation model will best suit to achieve the objectives (Andang, et al., 2020; Aziz, et al., 2018). However, experts opine that CIPP and Kirkpatrick models of programme evaluation are among the most comprehensive programme evaluation models (Dean, 2008; McDavid, et al., 2012). Kirkpatrick model of evaluation is suitable for management evaluation while CIPP model is better to evaluation training programmes (Akinci, et al., 2022; Darma, 2019; Lippe & Carter, 2018; Pertiwi et al., 2018). However, the CIPP evaluation model has advantages that make it appropriate for educational programme evaluation, particularly, a teacher training programme.

2.3 Rationale of using CIPP model for programme evaluation

By using the CIPP model to evaluate curriculum implementation, educators gain a comprehensive understanding of the programme and its impact on students, teachers, and the overall school community. Each component of the model is important for understanding the effectiveness of the programme, and the evaluation should include data collection methods that are appropriate for each component. The CIPP model can help educators identify areas for improvement in the curriculum implementation and make data-driven decisions about programme implementation and resource allocation (Stufflebeam, 2001, 2003, 2016).

The CIPP model is widely used in programme evaluation over the past several decades, and it has been praised for its flexibility and adaptability to a wide range of programmes and contexts. The model's focus on the entire programme cycle, from planning

and design through implementation and evaluation, has made it a valuable tool for programme managers, policymakers, and other stakeholders (Hakan, & Seval., 2011; Rooholamini, et al., 2017; Sopha, & Nanni., 2019).

The CIPP (Context, Input, Process, Product) is used in education to evaluate and improve programmes at all levels, from individual classroom interventions to large-scale education initiatives. Some examples of the use of the CIPP model in education include, curriculum evaluation, as the CIPP model can be used to evaluate the effectiveness of curricula and instructional programmes. By focusing on the context, input, process, and product of the curriculum, evaluators can identify strengths and weaknesses and make recommendations for improvement (Hakan, & Seval., 2011; Rooholamini, et al., 2017; Sopha, & Nanni., 2019).

The CIPP model is used to evaluate the effectiveness of professional development programmes for teachers and administrators. By evaluating the context, input, process, and product of the programme, evaluators can determine whether the programme is meeting its goals and identify areas for improvement (Hakan, & Seval., 2011; Rooholamini, et al., 2017; Sopha, & Nanni., 2019). The CIPP model is used to evaluate the effectiveness of school improvement initiatives, such as school turnaround programmes or efforts to improve student achievement. By examining the context, input, process, and product of the initiative, evaluators can determine whether the initiative is having the intended impact and identify areas for improvement (Hakan, & Seval., 2011; Rooholamini, et al., 2017; Sopha, & Nanni., 2019). In other words, the CIPP model is used to evaluate the effectiveness of a wide range of education programmes, including after-school programmes, mentoring programmes, and college access programmes. By assessing the context, input, process, and

product of the programme. The CIPP model provides a structured approach to evaluation, which ensures that all aspects of the programme are considered in a systematic way. This approach helps evaluators to identify strengths and weaknesses and make recommendations for improvement (Sopha, & Nanni., 2019).

The CIPP model recognizes that educational programmes operate within a broader context, which can influence their effectiveness. By considering the programme context, evaluators can assess the impact of external factors on the programme success. The CIPP model can be adapted to different types of educational programmes and contexts, making it a versatile approach to evaluation. This flexibility allows evaluators to tailor the evaluation to the specific needs of the programme. It is focused on the programme goals and objectives, which provides a clear framework for evaluation. By assessing the programme effectiveness in meeting its goals, evaluators can determine whether the programme is successful and identify areas for improvement (Sopha, & Nanni., 2019).

CIPP model provides a comprehensive and systematic approach to educational programme evaluation that is well-suited to the complex and multifaceted nature of education programmes. By providing a structured framework for evaluation, the CIPP model can help evaluators to identify areas for improvement and make data-driven decisions to improve student outcomes (Rooholamini, et al., 2017).

Each component of the CIPP model is important for evaluating the effectiveness of educational programmes. By examining the programme context, input, process, and product, evaluators can determine whether the programme is appropriate for its intended audience, whether it is being implemented effectively, and whether it is achieving its desired outcomes. The CIPP model provides a comprehensive and structured approach to

programme evaluation that can help evaluators to identify areas for improvement and make data-driven decisions to improve student outcomes. (Rooholamini, et al., 2017)

The CIPP (Context, Input, Process, Product) model of educational programme evaluation involves several factors that are important for conducting a thorough and effective evaluation. The goals and objectives of the educational programme should be clearly defined and measurable. The evaluation should focus on how well the programme is achieving these goals and whether they are appropriate for the intended audience. The external factors that can affect the programme, such as the political, social, and economic environment, should be considered. The evaluation should consider the broader context in which the programme operates to understand the factors that may influence its success (Rooholamini, et al., 2017).

The implementation of the programme should be evaluated to determine whether it is being carried out as intended. The evaluation should examine the effectiveness and efficiency of the programme implementation. The evaluation should assess the programme results and impacts to determine whether it is achieving its goals and objectives. The evaluation should examine the programme outputs, such as the number of students served, as well as its outcomes, such as improvements in student achievement. The input and feedback of stakeholders, such as students, parents, and teachers, should be considered. The evaluation should consider the perspectives of these stakeholders and incorporate their feedback into the evaluation process (Stufflebeam, 2001, 2003, 2016).

The evaluation should use appropriate data collection and analysis methods to ensure that the results are accurate and reliable. The evaluation should use a variety of data

sources, such as surveys, interviews, and student performance data, to provide a comprehensive and accurate assessment of the program (Stufflebeam, 2001, 2003, 2016).

In the light of above highlighted points, CIPP model can arguably be considered as the best model for a training programme evaluation for having a comprehensive approach, contextual sensitivity, consideration for resource evaluation and implementation analysis, including outcome assessment. Moreover, as indicated by Sopha & Nanni, 2019, the CIPP model's structure allows for flexibility in its application. It can be adapted to various types of educational programmes and can be used at different stages of programme implementation, from planning to post-implementation review having a decision-oriented approach through continuous improvement focus by identifying strengths and weaknesses across all aspects of the programme, it provides a foundation for continuous refinement and enhancement of educational initiatives as indicated by Rooholamini et al., 2017. The CIPP model's multifaceted approach aligns well with this complexity, allowing for a nuanced evaluation that captures the intricacies of educational initiatives as pointed out by Stufflebeam, 2017. This model's enduring relevance and effectiveness are supported by its continued application and refinement over several decades. Numerous studies have demonstrated its utility in evaluating educational programmes across various contexts as derived by Hakan & Seval, 2011; Rooholamini et al., 2017, and Sopha & Nanni, 2019.

It can be concluded by adding that after comparing the three models –the outcome-based evaluation model, the Kirkpatric model, and the CIPP model discussed in a systematic review, Iqbal, et al. (2021) found that all these models of programme evaluation have some strengths and weaknesses, but, among the compared models, the CIPP model seems more appropriate for its implantation in evaluating educational programs because it

is broader, comprehensive, flexible, cost-effective, and feasible. The model can be implemented at different stages of educational programs. The review concludes that employment of the CIPP model for evaluating educational programs can achieve plausible results about the overall progress of the educational programs. In other words, the CIPP model addresses all phases of an educational programme: planning, implementation, and a summative or final perspective assessment of desired outcomes, as indicated by Frye & Hemmer, 2012.

2.4 Use of CIPP Model in Education

Research conducted by educationists and programmes evaluators have shown effectiveness of using CIPP model for educational programme evaluation (Darma, 2019; Nyoman, 2021; Nyoman, and Darma, 2019; Sopha, & Nanni, 2019). CIPP model have been in used for evaluating different aspects of evaluation of English Language Teaching and Learning Programme (Abdul, et al. 2020; Agustina, & Mukhtaruddin, 2019; Ahmet, et al., 2020; Cici, 2021; Endang, 2021; Görkem, & Enisa, 2021; Mustangin, & Riswanto, 2020; Sopha & Nani, 2019; Shih, & Yuan, 2019; Ulum, 2016; Yu-Chih, & Yun-Pi, 2019). Evaluation of Early Childhood Education Programmes (Basaran, et al., 2021; Kim, 2019; Mehmet, et al. 2021; Utsman, et al, 2020). Programme, curriculum, and teaching evaluation of Distance education (Prayogo, 2021; Prayogo, et al., 2022). Evaluation of Online Learning Programmes (Damayanti, at al., 2022; Hasanah, at al., 2021; Irawan, & Prasetyo, 2020; Irzan, at al., 2021; Prisuna, 2022; Purwaningsih & Dardjito, 2021; Tokmak, at al., 2013). Educational programme evaluation (Warju, 2016). Curriculum evaluation (Bashri, at al., 2020; Keskin & Yazar, 2021; Özdemir, & Başaran, 2021; Priantini, et.al. 2021; Tuna, et al, 2021; Uğur, at al., 2016). Evaluation of Madrissah education programme (Ummah,

& Ariyanto, 2019). CIPP model is used for quality evaluation at school level (Aziz, et al., 2018). This model is also used for Professional development programme evaluation (Molope & Oduaran, 2020).

2.5 Evaluation of Teacher Training Programmes

Evaluation of Teachers Training programmes can be conducted to find out the appropriateness of the training model adopted, training materials used and the extent to which goals of such training are achieved. Moreover, such evaluation provides useful feedback related to trainees' perception of successfulness of the programme and its effect on curriculum implementation (Kesici, & Çavuş., 2018).

Programme evaluation in Pakistan is a relatively new field, and there is limited research on the topic. The evaluation of teacher education programmes in Pakistan is a new field that requires further research and reforms. Educational evaluation in Pakistani higher education context is also a new field that requires further research and development. However, programme evaluation is an essential tool for assessing the effectiveness and efficiency of programmes and policies in Pakistan. The CIPP Evaluation Model, the Kirkpatrick Four-Step Evaluation Framework, and the Outcome-Based Evaluation Model are some of the models that can be used to evaluate educational programmes in Pakistan. These models can help assess the relevance, effectiveness, and efficiency of educational programmes in Pakistan and can help improve the quality of education in the country (Ahmad, et al., 2012).

Therefore, programme evaluation is an important area of research and development in Pakistan, and there is a need for further research and reforms in this field. There are several challenges of programme evaluation in Pakistan. One of the main challenges is the lack of research and reforms in the field of programme evaluation. Programme evaluation

is a new field in Pakistan, and there is a need for further research and development in this area (Ahmad, et al., 2012; Fatima, & Din., 2011; Tahira, et al., 2020).

Another challenge is the lack of resources and expertise in programme evaluation. There is a shortage of trained evaluators in Pakistan, and this limits the capacity of organizations to conduct programme evaluations. Additionally, there is a lack of awareness and understanding of the importance of programme evaluation among policymakers and stakeholders. This limits the demand for programme evaluation and reduces the impact of evaluation findings on policy decisions (Tahira, et al., 2020).

Finally, there is a need for culturally appropriate programme evaluation models that are tailored to the Pakistani context. The models used in other countries may not be suitable for the Pakistani context, and there is a need for models that are sensitive to the cultural, social, and economic context of Pakistan. Therefore, there are several challenges of programme evaluation in Pakistan, and there is a need for further research, resources, and expertise to overcome these challenges (Tahira, et al., 2020).

2.5.1 Measuring the Effectiveness of Teacher Training

Measuring the effectiveness of training is crucial to ensure that the desired learning outcomes are achieved. Firstly, training's goals and objectives should be clearly defined before implementation to ensure

that the desired learning outcomes are achieved. Secondly, a reasonable number of key performance indicators be selected before making a choice. The best suitable method to measure training effectiveness depending on the type of training and the organization's unique needs to be determined. Furthermore, a mixture of quantitative and qualitative measures to evaluate training effectiveness and data collection on measurable outcomes to quantify the company's return on investment should be used (Zahawi & Al Bajalani, 2019).

Apart from these measures, scientifically validated techniques to evaluate the effectiveness of training programmes, comparison of pre- and post-training data to measure how much training has improved trainee performance should be used. Some other steps can be used to plan factors to be measured and how to collect the data before training begins, a variety of methods to measure training effectiveness, such as post-training quizzes, one-to-one discussions, employee surveys, participant case studies, and official certification exams should be applied to continuously evaluate and improve the training programme based on the results of the effectiveness measures (Darma, 2019; Nisar, 2017; Pang, & Nicholas, 2022).

2.5.2 Process of Evaluating Teacher Training Programme

The process of training evaluation is a systematic approach to analyzing the effects of a training programme and assessing its effectiveness. The steps involved in the process of training evaluation may include defining the purpose of the evaluation: The first step is to define the purpose of the evaluation, such as identifying areas for improvement, measuring the effectiveness of the training programme, or calculating the ROI, selecting the evaluation method: The next step is to select the evaluation method, such as questionnaires, surveys, interviews, or observation, collecting data using the selected evaluation method (Yelpaze & Yakar, 2020).

After this, analyzing the data collected to identify patterns and trends and then interpret the results of the analysis to determine the effectiveness of the training programme and identify areas for improvement. Lastly, reporting the findings of the evaluation to stakeholders, such as management, trainers, and employees and acting based on the findings of the evaluation, such as making changes to the training programme, providing additional support to employees, or justifying training spending (Kesici & Kavus, 2019).

2.5.3 Methods of Teacher Training Evaluation

There are several common training evaluation methods that can be used to assess the effectiveness of a training programme. Some of the most used training evaluation methods include surveys and questionnaires are the most used training evaluation methods.

They consist of a set of questions that aim to obtain useful information about the training programme, interviews as a method of collecting qualitative data from participants to gain a deeper understanding of their experiences with the training programme, observation that may involve observing participants during the training programme to assess their engagement, participation, and learning outcomes (Taylor, 2023; Yelpeze & Yakar, 2020).

Some other methods include pre- and post-training assessments are used to measure the knowledge and skills of participants before and after the training programme. Similarly, focus groups are also used to collect qualitative data from participants in a group setting to gain a deeper understanding of their experiences with the training programme (Taylor, 2023).

Another method is performance evaluations are used to assess the impact of the training programme on employee performance. Moreover, return on investment analysis is also used to calculate the financial return on investment from the training programme. Case studies are used to assess the impact of the training programme on real-world situations (Taylor, 2023).

2.5.4 Selecting the Most Appropriate Model of Teacher Training Programme Evaluation

To choose the most appropriate evaluation model for a specific programme, one should consider the evaluation objectives, the project development stage, the available data, and the theoretical basis of the model. The evaluation models used must fit the evaluation objectives and the project development stage. The selection of the evaluation model should be based on the type of programme, the evaluation questions, and the data available. Researcher can be more confident when choosing an appropriate evaluation model if they first consider the model's theoretical basis against their programme evaluation (Fronz, 2023; Yelpaze & Yakar, 2020).

Stufflebeam, & Coryn (2014) CIPP is a model that can be used to perform programme evaluation comprehensively from context of the programme to its product. Using CIPP model can guide programme and curriculum designers through the process of identifying, classifying, and clearly communicating specific outcome indicators by which to evaluate their programmes (Alsalamah & Callinan, 2021; Cook, 2010; Mertens & Wilson, 2018).

2.6 Curriculum Development in Pakistan

In Pakistan, the Federal Ministry of Federal Education and Professional Training is in-charge of developing and devising the guidelines of proposing and implementing curriculum and subsequent training. Thus, the content and textbook are approved by Federal Ministry of Federal Education and Professional Training before these steps are disseminated to be adopted as authentic teaching material to be taught in the schools (Mahmood, 2011).

Curriculum and textbook advancement and endorsement procedure is regulated by National Curriculum Committee (NCC), for maintenance of curriculum standards at all the school levels including primary to higher secondary levels. Although, the Ministry of Federal Education and Professional Training in Pakistan is responsible for the national cohesion, integration, and preservation of the ideological foundation of the state. The ministry formulates policies and implement them for the development of the education system in Pakistan. The ministry is responsible for informing all stakeholders in education publishing and the general public about the new policy, the stages of curriculum reform, and the estimated time schedule for new textbooks to be developed based on revised National Curriculum. The ministry plays a vital role in the curriculum development process in Pakistan by providing guidelines and policies for the development of the curriculum (Thira, et al., 2020).

Keeping in view the importance of curriculum, UNESCO recommends that the study of curriculum development, implementation, and evaluation should be a part of teacher education in Pakistan (2006). For publishing and distributing the learning content and textbooks, four Provincial Curriculum and Textbook Boards (PCTB), one in every province of Pakistan, is responsible for developing, publishing, and distribution of all school levels textbooks (UNESCO, 2006). For the development of textbooks, Provincial Textbook Boards comply with the guidelines highlighted in national curriculum, which are presented before the concerned review committees appointed by NCC for review and approval before final drafts for publishing and dissemination of textbooks to the schools (Ali, & Baig, 2012; Mahmood, 2010; Safdar, 2014).

The steps involved in curriculum development in Pakistan include requesting the provincial centers to prepare draft curriculum for each subject taught in various classes up

to Class XII, preparing a curriculum plan by the provincial curriculum committees, and submitting the plan to the National Curriculum Committee for approval (Ali, & Baig, 2012; Mahmood, 2016; Safdar, 2014). The Provincial Bureaus of Curriculum, Directorates, or authorities are responsible for the preparation of the curriculum, and they follow scientific methods for the preparation of the curriculum. Committees of teachers and subject specialists are called in by the Provincial centers to prepare the initial draft of curricula for various subjects. Thus, the curriculum development process in Pakistan is an ongoing, assessment, planning, and design process. (Ali, & Baig, 2012; Mahmood, 2016; Safdar, 2014). The National Curriculum Committee in Pakistan is responsible for preparing the initial draft of curricula for various subjects taught in various classes up to Class XII. The Provincial Curriculum and Textbook Boards prepare the curriculum plan, which is then submitted to the National Curriculum Committee for approval. The curriculum committee is responsible for the development, implementation, and evaluation of the curriculum (Aziz & Mahmood, 2018; Thira, et al., 2020).

The committee is also responsible for ensuring that the curriculum is relevant, up-to-date, and meets the needs of the students. The curriculum committee plays a vital role in ensuring that the curriculum is designed to meet the needs of the students and is relevant to the current educational environment in Pakistan (Aziz & Mahmood, 2018; Thira, et al., 2020).

2.7 Single National Curriculum 2021

The Single National Curriculum (SNC) is a recently introduced curriculum in Pakistan that aims to unite the students of the country under the umbrella of a single curriculum (Zeshan, 2021). The Single National Curriculum is designed to provide uniform

educational attainment for all children across the country and reduce educational disparities among different regions and social classes (Federal Ministry of Federal Education and Professional Training, 2020).

The Single National Curriculum includes mandatory subjects such as English, Urdu, mathematics, science, social studies, and Islamic studies for all grades. The Single National Curriculum also includes a focus on critical thinking, problem-solving, and creativity (Zaman, et al., 2022; Federal Ministry of Federal Education and Professional Training, 2020; Kazmi & Sohail, 2020).

However, the implementation of the Single National Curriculum is facing challenges, including technical challenges of using Urdu as the medium of instruction in certain subjects, concerns about the level of understanding of private school students, and the need for a comprehensive think tank to develop the curriculum. The Single National Curriculum is also not being implemented in Madrassas, which follow their own curricula (Federal Ministry of Federal Education and Professional Training, 2020; Kazmi & Sohail, 2020).

2.7.1 Goals and Aims of Single National Curriculum

The aim of the Single National Curriculum is to provide equal access to quality education for all students, irrespective of their gender, religion, or geographic location. The Single National Curriculum is a standards, benchmarks, and outcomes-based curriculum that focuses on building a common understanding of basic knowledge and values among all students (Kazmi & Sohail, 2020; Nazeer & Asad, 2021).

Furthermore, another aim of The Single National Curriculum is to create a standardized and inclusive curriculum that focuses on the development of analytical, critical, and creative thinking, and the use of Information Communication Technology is integrated into the curriculum for the first time (Ministry of Federal Education and Professional Training, 2020). The formulation of Single National Curriculum is intended to bring all the school going youth of the country under one curriculum and to promote social equality by providing all students with an equal and fair chance of receiving a good education making it a comprehensive curriculum that covers all tiers of education in Pakistan, from primary to higher education (Kazmi & Sohail, 2020; Nazeer & Asad, 2021).

2.7.2 Key Features of Single National Curriculum

The Single National Curriculum (SNC) is a standards, benchmarks, and outcomes-based curriculum that focuses on the development of analytical, critical, and creative thinking, and the use of ICT is integrated into the curriculum for the first time, that covers all tiers of education in Pakistan, from primary to higher education. The Single National Curriculum is a move towards standardizing education across Pakistan and improving the educational attainment of students across the country (Kazmi & Sohail, 2020; Nazeer & Asad, 2021).

2.7.3 Potential Benefits of Single National Curriculum

Implementing Single National Curriculum may bring uniform educational attainment, bringing unity and harmony in the nation, by reducing educational disparities among different regions and social classes (Kazmi & Riaz, 2023; Nazeer & Asad, 2021). A single national curriculum can provide a comprehensive document covering the needs of the country, including rural areas. It can also provide a structure for teachers to map out

the rationale systematically and transparently for the use of teaching, learning, and assessment approaches in the classroom (Kazmi & Sohail, 2020; Nazeer & Asad, 2021).

A national curriculum can ensure that all students have access to the same quality of education, regardless of their location or social class. This curriculum can also provide a framework for the development of textbooks and other educational materials, which can help to improve the quality of education in the country (Kazmi & Sohail, 2020; Nazeer & Asad, 2021).

However, the implementation of a national curriculum in Pakistan may also face challenges, including technical challenges of using Urdu as the medium of instruction in certain subjects, concerns about the level of understanding of private school students, and the need for a comprehensive think tank to develop the curriculum (Kazmi & Sohail, 2020; Nazeer & Asad, 2021).

2.7.4 Views of Teachers and Parents on Single National Curriculum

Teachers and parents have expressed concerns regarding the implementation of Single National Curriculum (SNC). Especially, private school teachers have raised concerns about implementing the Single National Curriculum in private schools because, in their opinion, students' level of understanding is more advanced than the SNC assumes (The Economist, 2021).

Teachers working in rural areas, where Urdu is not their students' mother tongue, have shown concern about the technical challenges of using Urdu as the medium of instruction in certain subjects, especially science. Parents and teachers have concern about the lack of trained teachers and teaching environment, especially in public sector schools (Kazmi & Sohail, 2020; Nazeer & Asad, 2021).

Some parents and teachers have expressed worries that the Single National Curriculum is introducing a lot of religious/Islamic stuff in Urdu, English, Social Studies, and even in History books, that may result in making this curriculum more religious oriented rather than skill oriented. Madrassas are not implementing the Single National Curriculum and will keep following their own curricula (Kazmi & Sohail, 2020). The success of the National Curriculum will depend on the quality of its implementation, the availability of resources, and the level of support from the government and other stakeholders (Kazmi & Sohail, 2020; Nazeer & Asad, 2021).

2.7.5 Expected Impact of Single National Curriculum

What impact the implementation of the Single National Curriculum will have on overall educational scenario of Pakistan, is yet to be determined and bears uncertainty, as the curriculum is relatively new and has not been fully implemented yet (Kazmi & Sohail, 2020; Nazeer & Asad, 2021). However, the implementation of the Single National Curriculum is facing challenges, including technical difficulties of using Urdu as the medium of instruction in certain subjects, concerns about the level of understanding of private school students, and the need for a comprehensive think tank to develop the curriculum.

The lack of trained teachers and teaching environment, especially in public sector schools, is also a challenge. Therefore, the success of the Single National Curriculum will depend on the quality of its implementation, the availability of resources, and the level of support from the government and other stakeholders (Kazmi & Sohail, 2020; Nazeer & Asad, 2021).

2.7.6 Challenges of Implementing Single National Curriculum

One of the challenges is the level of understanding of private school students, who are more advanced than the Single National Curriculum assumes. The lack of trained teachers and teaching environment, especially in public sector schools, is also a challenge (Kazmi & Sohail, 2020; Nazeer & Asad, 2021).

The Single National Curriculum is not being implemented in Madrassas. The development of the Single National Curriculum is also facing challenges, including the lack of a comprehensive think tank to develop the curriculum. The curriculum development process in Pakistan needs a think tank to develop a comprehensive document that covers the needs of the country, especially in rural areas (Kazmi & Sohail, 2020; Nazeer & Asad, 2021).

The Single National Curriculum is implemented in only two provinces, and the other provinces have either rejected it or accepted it half-heartedly. The implementation of the Single National Curriculum requires a multi-pronged, composite strategy to overcome Pakistan's complex problems in the education sector (Kazmi & Sohail, 2020; Nazeer & Asad, 2021).

2.7.7 Timeline for Implementation of Single National Curriculum

The process of implementation of the Single National Curriculum has already begun. The Single National Curriculum was officially launched by the Prime Minister of Pakistan in August 2021. It was implemented in Federal and Punjab schools from Nursery to Grade Five for academic session 2022-23, while Single National Curriculum for grades Six to Eight is implemented for academic session 2023-24. It will be fully implemented in

phase three during academic session 2024-25 from Nursery to XII (Kazmi & Sohail, 2020; Nazeer & Asad, 2021).

The Single National Curriculum is a comprehensive curriculum that covers all tiers of education in Pakistan, from primary to higher education. The Single National Curriculum will be applied across the country, and all existing tiers of education in Pakistan will be mainstreamed in the uniform curriculum once it is implemented. Single National Curriculum will be implemented in phases, starting with primary education, and gradually moving up to higher education (Kazmi & Sohail, 2020; Nazeer & Asad, 2021).

2.8 Curriculum Implementation

Curriculum implementation can be perceived as a process of curriculum change resulted by innovative ideas incorporated in revised curriculum. The most important and guiding principal and the central goal of implementing a curriculum tends to gain improved and enhanced teachers' pedagogies and student learning. Teachers remain unable to focus on better student learning if they do not possess knowledge and competencies of new material to be taught, methods of teaching the content and according to students learning outcomes (Kazmi & Sohail, 2020; Nazeer & Asad, 2021). Teacher training provides the appropriate platform for developing such knowledge and competencies to the concerned teachers that lead to effective curriculum implementation. Interactive, continuous, and reflective professional development of teachers through training is an important component of curriculum implementation because it results in enhanced student learning (Benett, 2007)).

Curriculum implementation is the process of translating a written curriculum into classroom practices. It involves the delivery of instruction and assessment using specified

resources provided in a curriculum (Nevenglosky, et al, 1995). Curriculum implementation involves selecting appropriate teaching methods, materials, and resources, and adapting the curriculum to meet the needs of the learners (Button, 2021). Curriculum implementation is an interaction among those experts who have created the programme and those teachers who deliver it. The success of the curriculum depends on the effective implementation of the curriculum in the classroom (Button, 2021).

Curriculum implementation is a continuous process of renewal and planning of the curriculum. It involves putting into effect what has been planned and ensuring that the new curriculum and curriculum revisions are implemented effectively (Button, 2021). Therefore, curriculum implementation is an essential component of the curriculum design process, and it is critical to the success of the curriculum in achieving its intended outcomes (Kazmi & Sohail, 2020; Nazeer & Asad, 2021).

2.8.1 Components of Curriculum Implementation

The components of curriculum implementation include the intended outcomes, what is taught, and the manner of implementation. The intended outcomes refer to the goals and objectives of the curriculum, which should be clear, measurable, and aligned with the needs of the learners and the goals of the programme. What is taught refers to the content or subject matter that the learners are expected to acquire through the curriculum (Hoover, 1990).

What is taught refers to the content or subject matter that the learners are expected to acquire through the curriculum. The content or subject matter should be relevant, engaging, and aligned with the needs of the learners and the goals of the programme. The content or subject matter should be relevant, engaging, and aligned with the needs of the

learners and the goals of the programme. The manner of implementation refers to the teaching methods, materials, and resources that are used to facilitate the acquisition of the content or subject matter (Wang, 2019). The manner of implementation should be appropriate for the learners and the content or subject matter, and should be adapted to meet the needs of the learners. Curriculum implementation is an interaction between the experts who have created the curriculum and the teachers who deliver it, and it requires educators to shift from the current curriculum which they are familiar with to the new or revised pedagogies. Curriculum implementation is a continuous process of renewal and planning of the curriculum, and it involves putting into effect what has been planned and ensuring that the new curriculum and curriculum revisions are implemented effectively (Wang, 2019).

The key components of curriculum implementation and evaluation include objectives, content, or subject matter, learning experiences, and evaluation. Objectives are the intended outcomes of the curriculum, and they should be clear, measurable, and aligned with the needs of the learners and the goals of the programme. Content or subject matter refers to the knowledge, skills, and attitudes that the learners are expected to acquire through the curriculum. Learning experiences are the activities, materials, and resources that are used to facilitate the acquisition of the content or subject matter. Evaluation is a continuous process that provides feedback on the effectiveness of the curriculum and classroom instruction (Wang, 2019). Evaluation involves collecting and analyzing data to assess the extent to which the objectives of the curriculum have been achieved, and to identify areas for improvement. Evaluation is an integral part of the curriculum development process and should be used to provide continuous feedback on the effectiveness of the curriculum and classroom instruction. All these key components of

curriculum implementation and evaluation are interrelated and should be aligned to ensure that the curriculum is effective in achieving its intended outcomes (Wang, 2019).

2.8.2 Difference Between Curriculum Development and Curriculum Implementation

Curriculum implementation and curriculum development are two different but interrelated processes in the curriculum design process. Curriculum development is the process of creating a new curriculum, which involves identifying the needs of the learners, setting goals and objectives, selecting content or subject matter, and designing learning experiences. Curriculum implementation, on the other hand, is the process of putting the written curriculum into practice in the classroom (Wang, 2019).

Curriculum implementation involves translating the written curriculum into classroom practices, which includes selecting appropriate teaching methods, materials, and resources, and adapting the curriculum to meet the needs of the learners. Curriculum implementation is an interaction between those who have created the curriculum and those who deliver it. Curriculum development and curriculum implementation are interdependent processes, and the success of the curriculum depends on the effective implementation of the curriculum in the classroom (Wang, 2019). Curriculum development is the first stage of the curriculum design process, while curriculum implementation is the second stage of the curriculum design process (Wang, 2019).

2.8.3 Steps of Curriculum Implementation

The steps of curriculum implementation can vary depending on the specific context, but generally include developing a clear plan for the curriculum implementation, including the goals and objectives, learning outcomes, instructional strategies, and assessment

methods. Determining the resources needed for the implementation, including materials, funding, and personnel, establishing open communication channels among stakeholders, including teachers, administrators, students, and families. Building teams and creating a collaborative environment that fosters innovation and quality in curriculum development, providing professional development opportunities for teachers to ensure they have the knowledge and skills needed to effectively deliver the new curriculum, rolling out the curriculum to classrooms, with continuous monitoring, assessment, and evaluation of progress (Wang, 2019).

Implementation is done step-by-step, systematically, and carefully, collecting and analyzing data on the effectiveness of the curriculum, including student achievement, teacher feedback, and impact on the overall education system, and adjusting the curriculum as needed based on the evaluation results and feedback from stakeholders. This step is important to keep the curriculum updated and responsive to the changing needs of students and the education system (Wang, 2019).

2.8.4 Factors Influencing Curriculum Implementation

Curriculum implementation is influenced by a variety of factors, including the design and content of the curriculum itself, including its alignment with learning standards, appropriateness for students' developmental levels, and its relevance to their lives. The knowledge, skills, and attitudes of teachers, including their familiarity with the curriculum, their ability to integrate technology, and their overall level of professional development. The readiness and receptiveness of students to the new curriculum, including their prior knowledge and skills, motivation, and engagement in the learning process. The school culture and context, including the resources available, the support from administration and

leadership, and the overall climate for teaching and learning. The level of community involvement and support for the curriculum, including the involvement of families, community organizations, and local businesses (Kazmi & Sohail, 2020; Nazeer & Asad, 2021). Government policies and funding initiatives that support or hinder the implementation of the curriculum. The availability and effectiveness of evaluation and feedback mechanisms for assessing the success of the curriculum implementation and adjusting as necessary (Kazmi & Sohail, 2020; Nazeer & Asad, 2021).

There are several factors that can affect curriculum implementation. One factor is the characteristics of the curriculum, such as its relevance, clarity, and coherence (Rudhumbu & Plessis, 2021). Another factor is the external environment, such as the political, social, and economic context in which the curriculum is being implemented. The availability of resources, such as textbooks, teaching materials, and facilities, is another factor that can affect curriculum implementation (Button, 2021; Kazmi & Sohail, 2020; Nazeer & Asad, 2021).

The teacher is also a critical factor in curriculum implementation, as their knowledge, skills, and attitudes can influence how the curriculum is taught and learned. The learners' characteristics, such as their age, gender, cultural background, interests, and aspirations, can also affect curriculum implementation (Rudhumbu & Plessis, 2021).

The school environment, including the school culture, leadership, and support systems, can also impact curriculum implementation. The level of community involvement and support, including parental involvement, can also affect curriculum implementation. The success of curriculum implementation depends on addressing these factors and

ensuring that the curriculum meets the needs of students and achieves the desired outcomes (Button, 2021; Kazmi & Sohail, 2020; Kwarteng, 2019; Nazeer & Asad, 2021).

2.8.5 Effectiveness of Curriculum Implementation

Effective curriculum implementation requires careful consideration of these and other factors, and a commitment to ongoing assessment and improvement. Curriculum implementation can be evaluated in a variety of ways, including, evaluating student achievement through assessment data such as tests, projects, and performance tasks can help determine if the curriculum is effectively meeting learning goals and objectives. Collecting feedback from teachers on the effectiveness of the curriculum, including the quality of the instructional materials and strategies, can provide insights into areas for improvement (Kazmi & Sohail, 2020; Nazeer & Asad, 2021).

Collecting feedback from students on their experiences with the curriculum, including their engagement and interest, can help identify strengths and areas for improvement. Observing teachers and students in the classroom to evaluate the quality of instruction and the extent to which the curriculum is being implemented as intended. Gathering feedback from parents and community members on their perceptions of the curriculum and its impact on students can provide valuable insights into the effectiveness of the implementation. Conducting a comprehensive programme evaluation that examines the overall effectiveness of the curriculum, including its impact on student learning, teacher practices, and the overall school community (Kazmi & Sohail, 2020; Nazeer & Asad, 2021).

2.8.6 Evaluation of Effectiveness of Curriculum Implementation

By using a combination of these evaluation methods, schools and educational organizations can gain a comprehensive understanding of the effectiveness of the curriculum implementation and make informed decisions about ongoing improvements and refinements. Programme evaluation is a comprehensive approach to assessing the effectiveness of a curriculum implementation. It involves systematically collecting and analyzing data on the programme to determine its impact on student learning, teacher practices, and overall school community. Some key steps in a programme evaluation for curriculum implementation include, clearly defining the goals and objectives of the curriculum implementation and how they align with the overall goals of the school or district (Button, 2021; Kazmi & Sohail, 2020; Nazeer & Asad, 2021).

Developing specific questions that the evaluation will seek to answer, such as whether the curriculum is improving student achievement or increasing teacher engagement. Collecting and analyzing a variety of data sources, including student achievement data, teacher and student feedback, classroom observations, and other relevant data, analyzing the data to identify patterns and trends, and to identify strengths and areas for improvement in the curriculum implementation (Button, 2021; Kazmi & Sohail, 2020; Nazeer & Asad, 2021).

After analysis of data, preparing a report that summarizes the findings of the programme evaluation and provides recommendations for improving the curriculum implementation and using the results of the evaluation to inform ongoing improvements to the curriculum implementation and to make data-driven decisions about programme

implementation and resource allocation (Button, 2021; Kazmi & Sohail, 2020; Nazeer & Asad, 2021).

2.8.7 Curriculum Implementation in Pakistan

The implementation of the curriculum in Pakistan is the carried out by the Provincial Curriculum and Textbook Boards. The curriculum is implemented by them in schools and colleges across the concerned Province, which is then delivered by subject teacher to the students (Kazmi & Sohail, 2020). However, there are problems with the implementation of the curriculum in Pakistan, including a lack of research on the effectiveness of curriculum changes, a top-down approach to curriculum change, and a lack of field research (Kazmi & Sohail, 2020; Nazeer & Asad, 2021).

2.8.8 Challenges of Curriculum Implementation in Pakistan

The challenges in implementing the curriculum including a lack of resources, lack of trained teachers, and lack of infrastructure. The lack of resources and infrastructure makes it difficult to implement the curriculum effectively, and the lack of trained teachers makes it difficult to deliver the curriculum to the students (Kazmi & Sohail, 2020; Nazeer & Asad, 2021).

2.8.9 Models of Curriculum Implementation

The implementation of curriculum in education can be approached through various models, each offering unique perspectives on the process. The Overcoming-Resistance-to-Change (ORC) Model recognizes that people naturally resist change and focuses on addressing this resistance for successful implementation (Hall & Hord, 2006). This model

outlines stages including unrelated concerns, personal matters, task-related concerns, and impact-related concerns that teachers may experience during curriculum changes.

Another approach is the Fundamental Questions in Curriculum Planning, which involves asking critical questions about the curriculum's purpose, content, and methods. The Components of Curriculum Plan model focuses on different elements such as objectives, content, and assessment. Effective curriculum implementation relies on several key factors. Community support, both theoretical and financial, is crucial for successful implementation of new curriculum designs (Fullan, 2007). Additionally, the classroom teacher plays a vital role in translating the planned curriculum into actual teaching and learning experiences (Ornstein & Hunkins, 2018).

The success of curriculum implementation is dependent on adequate research, experimentation, and formative evaluation (Marsh & Willis, 2007). These models provide frameworks for planning, implementing, and evaluating curricula to ensure they meet student needs and achieve desired outcomes. It's important to note that curriculum implementation is a complex process that requires careful planning, effective communication, and collaboration among stakeholders. Different models highlight various aspects of the change process and the roles of different actors in supporting successful implementation (Fullan, 2016).

2.8.10 Role of School in Curriculum Implementation

Schools can ensure effective curriculum implementation through various means. Providing ongoing professional development opportunities that focus on curriculum content, teaching methods, and assessment strategies is crucial, as it helps teachers acquire necessary skills and competencies (Alsubaie, 2016; Professional Development and

Materials to Support Implementation, n.d.). Schools can also offer coaching and mentoring support, allowing teachers to receive feedback and guidance on their teaching practices (How can professional development support creating and implementing high-quality open educational resources, n.d.). Additionally, classroom observations and evaluations can be used to monitor teacher performance and provide feedback on areas for improvement (Nevenglosky et al., 1995; Professional learning – curriculum K–12, n.d.).

Establishing a culture of collaboration and continuous improvement encourages teachers to work together, sharing best practices and enhancing their teaching methods (Curriculum Implementation - Professional Learning & Support, n.d.). Involving parents and other stakeholders in the curriculum implementation process by providing opportunities for feedback and input is also beneficial (Kwarteng, 2019). The success of curriculum implementation depends on the effective support and monitoring of teachers by schools and other stakeholders.

School administration can provide various resources to support teachers in implementing the curriculum effectively. These resources include professional development opportunities focusing on curriculum content, teaching methods, and assessment strategies (Alsubaie, 2016; Professional Development and Materials to Support Implementation, n.d.). Schools can also provide access to high-quality curriculum materials that articulate coherent trajectories of learning and development (High-Quality Curriculum Implementation, n.d.). Establishing a culture of collaboration and continuous improvement, providing access to technology and other resources, and involving parents and other stakeholders in the curriculum implementation process are also crucial steps (Curriculum Implementation - Professional Learning & Support, n.d.). The provision of

these resources can help teachers implement the curriculum effectively and ensure that it meets the needs of students and achieves the desired outcomes.

2.8.11 Role of Teacher in Curriculum Implementation

The teacher plays a crucial role in curriculum implementation. Teachers are responsible for translating the planned or formally designed course of study into actual teaching and learning experiences. Teachers are expected to have the knowledge, skills, and attitudes necessary to implement the curriculum effectively. Teachers are also expected to be involved in the curriculum development process, providing feedback and suggestions to improve the curriculum. Teachers are expected to be advisors, facilitators, and curriculum developers. Teachers are responsible for selecting appropriate teaching methods, materials, and assessment strategies to achieve the desired learning outcomes (Alsubaie, 2016).

Teachers are also responsible for creating a positive learning environment that fosters student engagement, motivation, and achievement. Teachers are expected to be reflective practitioners, continuously evaluating, and improving their teaching practices to ensure that they meet the needs of students and achieve the desired outcomes. The success of curriculum implementation depends on the teacher's knowledge, skills, and attitudes, as well as their involvement in the curriculum development process and their ability to create a positive learning environment (Alsubaie, 2016) .

Teachers require specific competencies to effectively implement the curriculum. Competencies are the knowledge, skills, and values that a teacher must demonstrate to be effective in their role (Alsubaie, 2016; Nessipbayeva, 2012). Teachers need to have a deep understanding of the curriculum content, including the learning objectives, subject matter,

and assessment strategies. They also need to have knowledge of different teaching methods, learning styles, and classroom management techniques. Teachers need to be able to adapt their teaching to meet the needs of diverse learners, including those with special needs, cultural differences, and different learning styles (Tarmo & Kimaro, 2021). They need to be able to use technology effectively to enhance teaching and learning (Rudhumbu & Plessis, 2021).

Teachers also need to have strong communication skills, including the ability to communicate with students, parents, and other stakeholders. They need to be able to work collaboratively with other teachers, administrators, and community members to ensure that the curriculum meets the needs of students and achieves the desired outcomes. Teachers need to be reflective practitioners, continuously evaluating and improving their teaching practices to ensure that they meet the needs of students and achieve the desired outcomes. The competencies required for teachers in curriculum implementation are essential for ensuring that the curriculum meets the needs of students and achieves the desired outcomes (Rudhumbu & Plessis, 2021; Tarmo & Kimaro, 2021).

2.9 Teacher Training and Curriculum Implementation

Teacher training plays a pivotal role in curriculum implementation. When curriculum change takes place in education, teachers as instructors and implementers should be prepared to be competent in their work (Ngeno, 2023). Teachers need to have the necessary knowledge, skills, and competencies to implement the curriculum effectively. Teacher training programmes can provide teachers with the necessary knowledge and skills to implement the curriculum effectively. Professional development opportunities, such as workshops, seminars, and conferences, can also help teachers

acquire the necessary skills and competencies for curriculum implementation. Collaborative learning opportunities, such as peer coaching and mentoring, can also help teachers develop their skills in curriculum implementation. Teachers need to be provided with appropriate knowledge and skills that help them to effectively contribute to the curriculum development operation. The success of curriculum implementation depends on the effective training and support of teachers by schools and other stakeholders (Ngeno, 2023; Rudhumbu & Plessis, 2021; Tarmo & Kimaro, 2021).

The relationship between teachers and curriculum is very important. Teachers play an essential role in developing, implementing, assessing, and modifying the curriculum. They are central to any curriculum improvement effort, and their knowledge, skills, and experience are essential pillars in the teaching process. Educators must be included in the curriculum development process to ensure that students have enriching learning experiences (Gomez-Cambron, 2021; Rudhumbu & Plessis, 2021; Tarmo & Kimaro, 2021).

Teachers' role in the process is to help students develop an engaged relationship with the content, and they can do this by building lessons that include simulations, discussions, and other interactive activities. Teachers' involvement in curriculum development is crucial to ensure that the curriculum is relevant, engaging, and meets the needs of the students. Therefore, teachers' role in curriculum development is critical to the success of the educational system (Rudhumbu & Plessis, 2021; Tarmo & Kimaro, 2021).

Teachers play an important role in the successful implementation of the curriculum. They are essential pillars in the teaching process, and with their knowledge, skills, and experience, they are central to any curriculum improvement effort. The teacher involved

in curriculum organization has many roles and responsibilities, including understanding the traditions, roles, and responsibilities of individuals in the school system. Successful implementation requires the involvement of teachers in the curriculum development process. Teachers can provide insight into the types of materials, activities, and specific skills that will help students learn effectively (Gomez-Camborn, 2021; Rudhumbu & Plessis, 2021; Tarmo & Kimaro, 2021). These skills can be achieved through effective teacher training (Tarmo & Kimaro, 2021).

During the process of curriculum implementation, teachers may face obstacles that vary with the curriculum itself, location, political situation, economic situation, and other factors. Professional development of teachers is an important factor contributing to the success of the curriculum. Therefore, it is essential to address these challenges to ensure that teachers can effectively develop and implement the curriculum. Teachers can acquire the necessary competencies for curriculum implementation through various measures. One way is through teacher education programmes that provide training in curriculum development, teaching methods, and assessment strategies (Tarmo & Kimaro, 2021). These programmes can equip student teachers with the competencies needed to implement the curriculum effectively. Professional development opportunities, such as workshops, seminars, and conferences, can also help teachers acquire the necessary competencies for curriculum implementation. Collaborative learning opportunities, such as peer coaching and mentoring, can also help teachers develop their competencies in curriculum implementation (Alsubaie, 2016; Kazmi & Sohail, 2020; Nazeer & Asad, 2021).

Teachers can also acquire competencies through self-directed learning, such as reading professional literature, participating in online communities of practice, and engaging in reflective practice. Teachers can also learn from their own experiences and the

experiences of their colleagues, continuously evaluating and improving their teaching practices to ensure that they meet the needs of students and achieve the desired outcomes. The acquisition of necessary competencies for curriculum implementation is essential for ensuring that the curriculum meets the needs of students and achieves the desired outcomes (Alsubaie, 2016; Kazmi & Sohail, 2020; Nazeer & Asad, 2021).

Teachers can also learn from their own experiences and the experiences of their colleagues, continuously evaluating and improving their teaching practices to ensure that they meet the needs of students and achieve the desired outcomes. The acquisition of necessary skills for curriculum implementation is essential for ensuring that the curriculum meets the needs of students and achieves the desired outcomes. Enhancing teachers' knowledge and their capacity building is necessary for effective curriculum implementation as less competent and untrained teachers remain unable to transfer new knowledge and skills that need to be taught for achieving curriculum goals and SLOs. Teachers can only educate their students effectively when they are well equipped and trained about the new learning content (Nazeer & Asad, 2021).

Due to importance of teacher training, teachers should be engaged in continuous professional development. Inappropriate training may result in low achievement from learners negatively. To cope with this issue, teachers need to be kept updated in their pedagogical and professional skills. In this context, teacher training is quite beneficial in curriculum implementation (Nazeer & Asad, 2021) .

2.9.1 Impact of Teacher Training on Curriculum Implementation

Teacher training has a significant impact on the success of curriculum implementation. Teachers need to have the necessary knowledge, skills, and competencies to implement the curriculum effectively. Teacher training programmes can provide

teachers with the necessary knowledge and skills to implement the curriculum effectively. Professional development opportunities, such as workshops, seminars, and conferences, can also help teachers acquire the necessary skills and competencies for curriculum implementation (Alsubaie, 2016; Kazmi & Sohail, 2020; Nazeer & Asad, 2021). Collaborative learning opportunities, such as peer coaching and mentoring, can also help teachers develop their skills in curriculum implementation. Teachers who receive adequate training are more likely to implement the curriculum effectively, resulting in improved student outcomes. On the other hand, inadequate teacher training can lead to poor curriculum implementation, resulting in negative student outcomes (Nevenglosky, et al., 1995). Therefore, teacher training is essential for ensuring the success of curriculum implementation.

Collaborative learning opportunities, such as peer coaching and mentoring, can also help teachers develop their skills in curriculum implementation. Schools can also provide access to high-quality curriculum materials that articulate coherent trajectories of learning and development. Schools can also establish a culture of collaboration and continuous improvement, encouraging teachers to work together to share best practices and improve their teaching practices. Schools can also involve parents and other stakeholders in the curriculum implementation process, providing opportunities for feedback and input on the curriculum. Additionally, teacher training programmes can be designed to provide teachers with the necessary knowledge and skills to implement the curriculum effectively (Alsubaie, 2016; Kazmi & Sohail, 2023; Nazeer & Asad, 2021; Sabar & Sharifi, 1999). Schools can also provide access to high-quality curriculum materials that articulate coherent trajectories of learning and development.

Teacher manuals that include supports for pedagogical strategies needed to enact these lessons can also be provided. An implementation team can establish a data collection plan and train data collectors to monitor teacher performance and provide feedback on areas for improvement. Schools can also involve parents and other stakeholders in the curriculum implementation process, providing opportunities for feedback and input on the curriculum. Effective teacher training methods are essential for ensuring the success of curriculum implementation (Alsubaie, 2016; Kazmi & Sohail, 2020; Nazeer & Asad, 2021; Sabar & Sharifi, 1999).

2.10 Models of Teacher Training

Effective teacher training models for curriculum implementation includes ongoing professional development opportunities that focus on the curriculum content, teaching methods, and assessment strategies (Darling-Hammond, et al., 2017). Professional development can help teachers acquire the necessary skills and competencies for effective curriculum implementation. Collaborative learning opportunities, such as peer coaching and mentoring, can also help teachers develop their skills in curriculum implementation. Schools can also provide access to high-quality curriculum materials that articulate coherent trajectories of learning and development. Teacher manuals that include supports for pedagogical strategies needed to enact these lessons can also be provided (Darling-Hammond, et al., 2017).

An implementation team can establish a data collection plan and train data collectors to monitor teacher performance and provide feedback on areas for improvement. Effective teacher training practices include ongoing support and coaching, opportunities for collaboration and feedback, and access to high-quality curriculum materials and

resources. These practices are essential for ensuring the success of curriculum implementation (Darling-Hammond, et al., 2017). There are various models of teacher training. One model is the 4-year university training, which is a traditional model of teacher preparation that involves a four-year undergraduate degree in education. Another model is postgraduate training, which involves a master's degree in education or a related field. Alternative certification programmes, such as Teach for America, are also a model of teacher training that provides an alternative pathway to certification for individuals who have not completed a traditional teacher preparation programme. Simulation models for teacher training are also used, which involve the use of simulations to provide teachers with opportunities to practice and develop their skills in a safe and controlled environment (Darling-Hammond, et al., 2017; Matos, et al., 2021; Sharma, 2015).

Another model is the principle of modeling in teacher training, which involves learning from direct experience and observing the practices of experienced teachers (Ellman, 2021). The craft model, applied science model, and reflective model are also models of teacher education that have been discussed in the literature (Matos, et al., 2021).

These models provide different approaches to teacher training, each with its own strengths and weaknesses. There are different models of teacher training, including the modeling model, which involves demonstrating teaching techniques to trainees by treating them as students. The craft model, applied science model, and reflective model are also models of teacher education that have been discussed in the literature. The craft model emphasizes the development of practical skills and knowledge through apprenticeship-style learning. The applied science model emphasizes the use of scientific principles and research-based practices to inform teaching (Matos, et al., 2021).

The reflective model emphasizes the development of critical thinking and self-reflection skills to improve teaching practices. Teacher preparation programmes also include a variety of models, such as 4-year university training, postgraduate training, and alternative certification programmes. Simulation models for teacher training are also used, which involve the use of simulations to provide teachers with opportunities to practice and develop their skills in a safe and controlled environment. These different models provide different approaches to teacher training, each with its own strengths and weaknesses (Matos, et al., 2021).

There are various models of teacher training, including, traditional model which involves attending in-person training sessions, workshops, or conferences, induction model that provides new teachers with ongoing support and mentorship during their first few years of teaching. Some models include, online model that allows teachers to engage in professional development through online courses, webinars, and virtual coaching. One variation of online model is blended model. This model combines online learning with in-person training, allowing teachers to engage in both online coursework and face-to-face instruction (Matos, et al., 2021).

On the other hand, a peer-to-peer model involves teachers sharing their knowledge and expertise with their peers through collaborative learning communities, peer coaching, or mentoring programmes. The clinical model provides teachers with opportunities to apply what they have learned in real classroom settings, with feedback and support from experienced coaches or mentors. A reflective model emphasizes reflective practice and self-evaluation, encouraging teachers to continuously reflect on their teaching and seek out opportunities for growth and development (Matos, et al., 2021).

In-service teacher training is imparted in continuous professional development of the teachers to enhance and update their pedagogical skills and competencies and to provide knowledge on newly developed curriculum to be taught and properly implemented (Matos, et al., 2021). Different training models are adopted for these purposes in accordance with the teaching learning needs and curriculum guidelines described by Powell (2016).

2.10.1 Standardized Teacher Professional Development Models

2.10.1.1 Cascade Model

In the Cascade model, one or two teachers from a school receive standardized teachers' professional development through a training-based model and return to their schools to replicate the received training to the teachers at school. This approach is often used to help teachers learn basic pedagogical skills and to integrate them into teaching and learning (Moulakdi & Bouchamma, 2020).

The cascade model of teacher professional development is a model that is used to train many in-service teachers in a short span of time (Ngeze, at al., 2018). This model involves training a group of teachers who then train their colleagues on a particular skill or knowledge. The cascade model is often used when there is a need for teachers' continuing professional development. This model is cost-effective and can be used to reach many teachers in a short amount of time. However, the effectiveness of the cascade model depends on the quality of the initial training and the ability of the trained teachers to effectively train their colleagues (Moulakdi & Bouchamma, 2020). The cascade model can be an effective way to provide professional development to many teachers, but it is important to ensure that the training is of high quality and that the trained teachers are able

to effectively transfer their knowledge and skills to their colleagues (Moulakdi & Bouchamma, 2020).

The cascade model of teacher professional development differs from other models in that it involves training a group of teachers who then train their colleagues on a particular skill or knowledge. This model is often used when there is a need for teachers' continuing professional development on a large scale, as it is cost-effective and can reach many teachers in a short amount of time (Bett, 2015). However, the effectiveness of the cascade model depends on the quality of the initial training and the ability of the trained teachers to effectively train their colleagues.

Other models of teacher professional development include collaborative models, which involve teachers working together to develop their skills and knowledge, and institution-based models, which involve training teachers within their own schools or institutions. These models may be more effective in promoting sustained changes in teaching practices, as they provide ongoing support and opportunities for collaboration and feedback. Ultimately, the choice of model depends on the specific needs and context of the teachers and schools involved (Matos, et al., 2021).

The cascade model of teacher professional development has several advantages, including the use of existing teaching staff, cost-effectiveness, and shorter training time spans. This model can reach many teachers in a short amount of time and can be a cost-effective way to provide professional development on a large scale (Bett, 2015).

However, the cascade model also has several disadvantages, including the risk of dilution of quality, as the quality of the training may decrease as it is passed down from one level to the next. The effectiveness of the model also depends on the quality of the initial training and the ability of the trained teachers to effectively train their colleagues.

Additionally, the cascade model may not be sustainable in the long term, as it may not provide ongoing support and opportunities for collaboration and feedback. Ultimately, the choice of model depends on the specific needs and context of the teachers and schools involved, and effective teacher professional development should be designed to meet those needs in a meaningful and sustainable way (Bett, 2015; Matos, et al., 2021).

2.10.1.2 Reflective Teaching Model

This model is used with a focus on reflection of teachers to help them implement reform teaching strategies. This model is grounded in the theories of constructivism. It recommends consistent, on-going sessions of joint planning, teaching, and reflecting (Matos, et al., 2021).

The reflective teaching model of teacher professional development is a process of self-examination and self-evaluation in which teachers regularly engage to improve their professional practices (Bett, 2015). This model involves teachers reflecting on their teaching practices, identifying areas for improvement, and developing strategies to address those areas. Reflective teaching can take many forms, including journaling, peer observation, and feedback from students and colleagues (Pang, 2022).

The goal of reflective teaching is to promote ongoing learning and growth, and to help teachers become more effective in the classroom. Reflective teaching can be a powerful tool for teacher professional development, as it provides opportunities for self-reflection, feedback, and collaboration with colleagues. However, it requires a commitment to ongoing learning and growth, and may not be as effective for addressing specific skill gaps or providing training on new teaching practices. Ultimately, the reflective teaching model of teacher professional development can be an effective way to promote ongoing

learning and growth among teachers, and can help teachers become more effective in the classroom over time (Bett, 2015; Matos, et al., 2021).

The reflective teaching model of teacher professional development has several benefits. One of the main benefits is that it leads to professional development, as teachers engage in ongoing self-reflection and self-evaluation to improve their teaching practices. Reflective teaching allows teachers to explore their thought processes and understand their strengths and weaknesses, which can help them become more effective in the classroom over time. Reflective teaching can also help teachers become more self-aware and better able to identify areas for improvement, which can lead to more effective teaching practices and improved student learning outcomes. Additionally, reflective teaching can help teachers become more engaged and motivated in their work, as they see the impact of their efforts on student learning and growth (Diasti & Kuswandono, 2020).

Reflective teaching leads to professional development by allowing teachers to engage in ongoing self-reflection and self-evaluation to improve their teaching practices. Reflective teaching involves reviewing personal teaching beliefs and using reflective practices to analyze and deliver information effectively. Through reflective teaching, teachers can develop a deeper understanding of their philosophy, principles, and practices, which can lead to improved teaching methodologies and student learning outcomes. Reflective teaching can also help teachers identify areas for improvement and develop strategies to address those areas, which can lead to ongoing growth and development as a teacher. Additionally, reflective teaching can help teachers become more self-aware and better able to identify their strengths and weaknesses, which can lead to more effective teaching practices and improved student learning outcomes (Matos, et al., 2021).

There are several specific reflective practices that can lead to professional development for teachers. One practice is to regularly review personal teaching beliefs and use reflective practices to analyze and deliver information effectively. Another practice is to collect data about teaching, examine attitudes, beliefs, assumptions, and teaching practices, and use the information obtained as a basis for critical reflection about teaching. Teachers can also engage in peer observation and feedback, which can provide opportunities for collaboration and reflection on teaching practices. Additionally, teachers can use student feedback and self-assessment to identify areas for improvement and develop strategies to address those areas. Reflective teaching can also involve reviewing and analyzing lesson plans, student work, and assessment data to identify areas for improvement and develop strategies to address those areas (Matos, et al., 2021).

Reflective practice can have several benefits for teachers' professional development. One of the primary benefits is that it allows teachers to develop a deeper understanding of their own teaching style and effectiveness, which can lead to greater effectiveness as a teacher. Reflective practice can also help teachers identify areas for improvement and develop strategies to address those areas, which can lead to ongoing growth and development as a teacher. Additionally, reflective practice can help teachers become more self-aware and better able to identify their strengths and weaknesses, which can lead to more effective teaching practices and improved student learning outcomes. Reflective practice can also promote innovation and creativity in teaching, as teachers explore new approaches and strategies to engage students and promote learning (Diasti & Kuswandono, 2020; Matos, et al., 2021).

Reflective practice can help teachers improve their teaching methodologies by providing opportunities for self-reflection and self-evaluation. Through reflective practice, teachers can review their teaching practices, identify areas for improvement, and develop strategies to address those areas. Reflective practice can also help teachers become more self-aware and better able to identify their strengths and weaknesses, which can lead to more effective teaching practices and improved student learning outcomes (Diasti & Kuswandono, 2020; Matos, et al., 2021).

Additionally, reflective practice can promote innovation and creativity in teaching, as teachers explore new approaches and strategies to engage students and promote learning. By engaging in ongoing self-reflection and self-evaluation, teachers can continually improve their teaching methodologies and become more effective in the classroom over time (Diasti & Kuswandono, 2020; Matos, et al., 2021).

2.10.1.3 Split Model

This model consists of six–eight-day training at district/block level, then practicing the inputs received in the professional development programme two or three months in actual classroom situation, and a short follow-up training of two to three days at district/block level wherein the teachers share their experiences through reflective and open discussions. These reflective discussions include integration of theory and practice, integration of context and pedagogy (Matos, et al., 2021). This model is designed to provide teachers with a range of perspectives and expertise, and to promote collaboration and sharing of knowledge and skills. The split model can be effective in promoting sustained changes in teaching practices, as it provides ongoing support and opportunities for collaboration and feedback (Matos, et al., 2021; Vumilia, et al., 2018).

However, the effectiveness of the split model depends on the quality of the training and the ability of the trained teachers to effectively share their knowledge and skills with their colleagues. Other models of teacher professional development include the cascade model, which involves training a group of teachers who then train their colleagues, collaborative models, which involve teachers working together to develop their skills and knowledge, and institution-based models, which involve training teachers within their own schools or institutions (Vumilia, et al., 2018). Ultimately, the choice of model depends on the specific needs and context of the teachers and schools involved, and effective teacher professional development should be designed to meet those needs in a meaningful and sustainable way (Matos, et al., 2021; Vumilia, et al., 2018).

2.10.2 Site-Based Professional Development Models

This model includes intensive learning by groups of teachers in a school or region to promote or found and long-term changes in instructional methods. The site-based teacher training model is a model of teacher professional development that involves training teachers within their own schools or institutions (Lee & Gupta, 2020).

In this model, the school site becomes a learning laboratory for the teachers, and the training is tailored to the specific needs and context of the school. Site-based teacher training can be effective in promoting sustained changes in teaching practices, as it provides ongoing support and opportunities for collaboration and feedback within the school community (Lee & Gupta, 2020).

Additionally, site-based teacher training can help teachers develop a deeper understanding of the specific needs and challenges of their students and schools, which can

lead to more effective teaching practices and improved student learning outcomes (Lee & Gupta, 2020).

However, the effectiveness of the site-based teacher training model depends on the quality of the training and the ability of the trained teachers to effectively share their knowledge and skills with their colleagues. Ultimately, the choice of model depends on the specific needs and context of the teachers and schools involved, and effective teacher professional development should be designed to meet those needs in a meaningful and sustainable way (Lee & Gupta, 2020).

Site-based teacher training differs from traditional teacher training in that it involves training teachers within their own schools or institutions, while traditional teacher training typically takes place outside of the school setting. Site-based teacher training is tailored to the specific needs and context of the school, and can provide ongoing support and opportunities for collaboration and feedback within the school community. Traditional teacher training, on the other hand, may be more standardized and may not consider the specific needs and context of individual schools (Lee & Gupta, 2020).

2.10.2.1 Observation/Assessment Model

In this model, a teacher professional development provider, such as a master teacher in a school or a specialist working district-wide, observes teachers in their classrooms, assessing their instructional practices and providing structured feedback. Various observation and assessment models are utilized in teacher training. One model is teacher observation, which involves sitting in on another teacher's class to observe, learn, and reflect (SimpleK12, 2023). Another model is the Step-by-Step Teacher Standards

Observation Form, used as part of a broader teacher evaluation process (Çetin & Bayrakçı, 2019).

Effective professional development includes ongoing support and feedback, which can be achieved through classroom observations and evaluations. These methods help teachers refine their instructional practices and improve their teaching effectiveness (Burns, 2011). Additionally, fostering a culture of collaboration and continuous improvement, where teachers share best practices and work together, is essential for successful professional development (Global Partnership for Education, 2023).

2.10.2.2 Open Lessons

Open lessons can be used to model desired behavior informally, engage with students in activities, and create lesson plans that align with national standards, incorporate active learning methodologies, and include multiple measures for demonstrating competence (Burns, 2011). This model utilizes teachers' collective intelligence to create high-quality lessons and provides a mechanism for exploring complex issues in teachers' professional lives (Shen et al., 2007).

The benefits of open lessons include the opportunity to observe and discuss subject content and pedagogical practices within the immediate context of their own school or classroom. This method can improve teaching and learning for both students and teachers (Shen et al., 2007).

However, implementing open lessons can present challenges. Teachers may feel uncomfortable being observed by peers or fear criticism of their teaching practices. Scheduling and coordination between teachers and trainers can be difficult, and there may be a lack of resources or support, such as time or funding (Orwenjo & Erastus, 2018).

Additionally, there may be challenges in using open educational resources, such as a lack of awareness or understanding of the materials.

Despite these challenges, open lessons can be an effective model for teacher training and professional development. They provide valuable opportunities for observation, learning, and feedback, ultimately contributing to improved teaching practices and student performance (Orwenjo & Erastus, 2018).

2.10.2.3 Lesson Study

In this model, teachers collaboratively plan, develop, or improve a lesson, field test the lesson, observe it, make changes, and collect data to see the impact of the lesson on student learning. This approach focuses on student's actions. The lesson study model of teacher training is a Japanese model of teacher-led research in which a triad of teachers work together to target an identified area for development in their teaching practices (Kanellopoulou & Darra, 2019) .

In a lesson study process, groups of teachers identify an area of need in pupil learning and work together to design, teach, observe, and refine a research lesson. Research lessons are actual classroom lessons, taught to one's own students, that are focused on a specific teacher-generated problem, goal, or vision of (Rock & Wilson, 2005).

The lesson study model allows teachers to collaborate and learn from each other, as well as reflect on their own teaching practices. It brings the intricacies of teaching practice and student learning into focus through a process of collaborative inquiry. The lesson study model is used in the International Quality Education programme and is gaining popularity in the United States (Kanellopoulou & Darra, 2019).

In traditional teacher training, teachers receive professional development through workshops, seminars, and courses that are often led by outside experts. In contrast, the Lesson Study model is a teacher-led research model in which a triad of teachers work together to target an identified area for development in their students' learning. Using existing evidence, participants collaboratively research, plan, teach, and observe a series of lessons, using ongoing discussion, reflection, and expert input to track and refine their interventions (Kanellopoulou & Darra, 2019) .

The Lesson Study model emphasizes collaborative inquiry and reflection on teaching practices, rather than a one-size-fits-all approach to professional development. In Lesson Study, teachers build and refine ideas about "best practice" through careful, collaborative study of actual instruction. Lesson Study involves posing questions and problems of practice, researching possible solutions, trying out ideas, collecting data, and analyzing findings. The Lesson Study model is gaining popularity in the [United States](#) and has been advocated in the UK for some time (Kanellopoulou & Darra, 2019) .

One of the advantages of the Lesson Study model is that it emphasizes collaborative inquiry and reflection on teaching practices, rather than a one-size-fits-all approach to professional development. Lesson Study allows teachers to research, create, try, and evaluate lesson plans to determine if they are helping students learn. It provides a rare and valuable chance for teachers to be in a classroom solely to investigate student learning, unencumbered by the need to manage students or provide instruction. Lesson Study also allows a school to build coherent instruction, bringing to life its vision of student learning across grade levels. Additionally, Lesson Study contributes to the professional development of teachers (Kanellopoulou & Darra, 2019).

Results based on research conducted on this model has shown that Lesson Study can improve instructional practices and student learning outcomes. Lesson Study allows teachers to research, create, try, and evaluate lesson plans to determine if they are helping students learn. It provides a rare and valuable chance for teachers to be in a classroom solely to investigate student learning, unencumbered by the need to manage students or provide instruction. Lesson Study focuses on student learning and development, allowing teachers to build a habit of learning from each other. Lesson Study allows a school to build coherent instruction, bringing to life its vision of student learning across grade levels (Kanellopoulou & Darra, 2019).

By working in iterative cycles, Lesson Study gives instructors a framework for actively investigating how to improve student learning. Lesson Study also contributes to the professional development of teachers, resulting in increased content and pedagogical knowledge, self-efficacy, instructional skills, perceived autonomy, and improved instructional practices (Ozdemir, 2019).

Lesson Study allows teachers to become lifelong learners and create engaging lessons and units. Lesson Study provides teachers with an opportunity to collaborate with their peers and learn from each other. It allows teachers to research, create, try, and evaluate lesson plans to determine if they are helping students learn. Lesson Study also contributes to the professional development of teachers, resulting in increased content and pedagogical knowledge, self-efficacy, instructional skills, perceived autonomy, and improved instructional practices. Lesson Study provides a rare and valuable chance for teachers to be in a classroom solely to investigate student learning, unencumbered by the need to manage students or provide instruction. By working in iterative cycles, Lesson Study gives

instructors a framework for actively investigating how to improve student learning. Lesson Study also allows a school to build coherent instruction, bringing to life its vision of student learning across grade levels (Kanellopoulou & Darra, 2019; Ozdemir, 2019).

2.10.2.4 Study Groups

Within ‘Study Groups’ teachers collaborate as a single large group or in smaller teams, to solve a common problem or create and implement a plan to attain a common goal.

The study group model of teacher training is not a specific model of teacher training, but rather a general term that refers to any approach to professional development that involves teachers working collaboratively in small groups to improve their teaching practices. One example of a study group model is the Lesson Study model, which is a Japanese model of teacher-led research in which a triad of teachers work together to target an identified area for development in their students' learning (Firestone, et al., 2020; Stanley, 2011).

Using existing evidence, participants collaboratively research, plan, teach, and observe a series of lessons, using ongoing discussion, reflection, and expert input to track and refine their interventions (Firestone, et al., 2020; Stanley, 2011). The Lesson Study model emphasizes collaborative inquiry and reflection on teaching practices, rather than a one-size-fits-all approach to professional development. Lesson Study allows teachers to research, create, try, and evaluate lesson plans to determine if they are helping students learn. It provides a rare and valuable chance for teachers to be in a classroom solely to investigate student learning, unencumbered by the need to manage students or provide instruction. Lesson Study also allows a school to build coherent instruction, bringing to life its vision of student learning across grade levels (Firestone, et al., 2020; Matos, 2021; Stanley, 2011).

2.10.2.5 Inquiry/Action Research

In an inquiry/action research approach, teachers form teams based upon a common interest. They select an issue, investigate and research it, plan possible actions to remedy it, act, observe and document results, reflect on outcomes and create an action plan to address this issue (Matos; 2021).

Inquiry/action research is used for teacher training as a tool for teachers to use in problem-solving daily challenges and issues (Aras, 2020). Action research is a form of teacher inquiry that involves educational practitioners carrying out research on educational problems of practice. The value of teacher inquiry and all applications of action research is that the research is being conducted by insiders, those who work directly with the problem being studied (Mertler, 2021).

Action research is teacher-led and school-based, which means that it is grounded in the context of the classroom and the school (Clark, et al., 2015). Action research is a cyclical process that involves identifying a problem, collecting data, analyzing the data, and taking action to address the problem. Through action research, teachers can learn how to improve their teaching practices and student learning outcomes. Action research can also foster a culture of inquiry, encouraging teachers to ask questions, conduct individual research, and share what they learn with colleagues (Matos; 2021).

Teachers can use action research to improve their teaching skills by reflecting on what they would like to change, exploring what others are doing in that field, and experimenting with practice in a systematic way. Action research enables teachers to reflect on their own teaching practices and identify areas for improvement (Matos; 2021).

Through action research, teachers can collect data on their teaching practices and student learning outcomes, analyze the data, and take action to address any issues that arise. Practicing the strategies and skills of teacher action research can help teachers improve their teaching practices and student learning outcomes. Action research allows educators to learn through their actions with the goal of improving their practice (Clark, et al. 2015).

By engaging in action research, teachers can become more reflective practitioners, continually improving their teaching practices and student learning outcomes. Action research can also foster a culture of inquiry, encouraging teachers to ask questions, conduct individual research, and share what they learn with colleagues. Teachers can use action research to develop new teaching strategies, improve student engagement, and enhance student learning outcomes (Aras, 2020). Action research can also help teachers to identify and address any gaps in their knowledge or skills, leading to improved teaching practices and student learning outcomes (Matos; 2021).

Teachers can use action research to identify areas of improvement by reflecting on their teaching practices and collecting data on student learning outcomes. Action research enables teachers to reflect on what they would like to change, explore what others are doing in that field, and experiment with practice in a controlled fashion. Teachers can conduct research within the classroom on anything from effective assessment to managing behavior to identify areas of improvement without disrupting class time (Aras, 2020).

Through action research, teachers can collect data on their teaching practices and student learning outcomes, analyze the data, and take action to address any issues that arise. Action research generates actionable hypotheses about teaching, learning, and curriculum from reflection on and study of teaching, learning, and curriculum to improve teaching,

learning, and curriculum. Action research empowers teachers to own professional knowledge because teachers conceptualize and create knowledge, interact around knowledge, transform knowledge, and apply knowledge. Practicing the strategies and skills of teacher action research can help teachers identify areas of improvement and develop an increased awareness of the discrepancies between goals and practices (Overby, 2019).

Using action research in teaching practices has several benefits for teachers and students. Action research enables teachers to reflect on their teaching practices and identify areas for improvement. It helps teachers to become more reflective practitioners and develop a deeper understanding of their students' learning needs. Action research allows teachers to experiment with new teaching strategies and assess their effectiveness. It also empowers teachers to own professional knowledge because teachers conceptualize and create knowledge, interact around knowledge, transform knowledge, and apply knowledge. Action research can be as informal or formal as needed, and data is collected through observation, questioning, and discussion with students (Aras, 2020; Matos, 2021; Overby, 2019).

By engaging in action research, teachers can become more effective in their teaching practices, leading to improved student learning outcomes. Action research can also foster a culture of inquiry, encouraging teachers to ask questions, conduct individual research, and share what they learn with colleagues (Aras, 2020; Matos, 2021; Overby, 2019).

2.10.2.6 Mentoring

In this model, older or more experienced teachers guide and assist younger or novice teachers in all areas of teaching. Mentoring in teacher training is a process in which

a knowledgeable, experienced, and highly proficient teacher works with and alongside a beginning teacher or a novice teacher to provide guidance, support, and feedback.

The mentor's role includes providing on-site support and assistance to novices during their first years of teaching (Iancu-Haddad & Oplatka, 2009). Mentoring is different from induction, which helps new teachers navigate the practical aspects of the job, such as how to follow field trip protocols or use the school's grading system. The mentor teacher plays a critical role as the student teacher's model and mentor and has great influence over the student teacher's learning experience. Mentoring can help new teachers to develop their teaching skills, build their confidence, and improve their classroom management techniques (Iancu-Haddad & Oplatka, 2009).

Mentoring can also help new teachers to navigate the complexities of the school environment, including school culture, policies, and procedures. Mentoring can provide a supportive environment for new teachers to ask questions, seek advice, and receive feedback on their teaching practices. Overall, mentoring is an important component of teacher training that can help new teachers to develop their teaching skills, build their confidence, and improve their classroom management techniques (Iancu-Haddad & Oplatka, 2009).

Mentoring for novice teachers offers numerous benefits. Trained mentors assist novice teachers in lesson planning, gathering information about best practices, observing their classes, and providing feedback on their teaching practices (Ingersoll & Strong, 2011). Mentoring helps inexperienced teachers learn effective time management, enabling them to fulfill their obligations with less stress and greater efficiency (Smith & Ingersoll, 2004). Additionally, mentoring provides new teachers with a level of consistency that benefits

schools by creating a stable and consistent learning environment for students (Scherer, 2012). High-quality and consistent mentoring for novice teachers leads to significant academic gains for their students (Rockoff, 2008). Mentoring helps new teachers develop their teaching skills, build confidence, and improve classroom management techniques (Hudson, 2013). It also provides a supportive environment where new teachers can ask questions, seek advice, and receive feedback on their teaching practices (Wang et al., 2008). Experienced mentors, who are confident in their classroom management and lesson planning, can articulate the how and why of teaching, thereby connecting theory to practice (Feiman-Nemser, 2001).

Overall, mentoring is an important component of teacher training that can help new teachers to develop their teaching skills, build their confidence, and improve their classroom management techniques, leading to improved student learning outcomes. Mentoring can improve teacher retention rates by providing new teachers with the support and guidance they need to succeed in their new roles. Studies have shown that well-designed mentoring programmes lower the attrition rates of new teachers. Pairing new teachers up with a more experienced mentor can help them to know who to turn to when they have a question, providing them with a sense of support and belonging. Research has shown that the retention rate for first and second-year teachers who have been exposed to a comprehensive mentoring programme can improve by forty percent (Bawani, and Mphahlele, 2021; Hill-Carter, 2010).

A well-designed teacher mentorship programme can lower the rate at which new teachers leave, providing them with the support they need to succeed in their new roles. In fact, 20% of new special education teachers surveyed said they stayed a second year

because of the mentoring they received. Without good mentors, new teachers are likely to fray more easily and more quickly, contributing to the current high rate of new teacher turnover. By providing new teachers with the support and guidance they need to succeed, mentoring can help to improve teacher retention rates, leading to more stable and consistent learning environments for students (Bawani, and Mphahlele, 2021; Hill-Carter, 2010).

2.10.3 Self-Directed Teacher Professional Development Models

Self-directed teacher professional development is a form of teacher training that involves independent learning by teachers either individually or in groups (Alshaikhi, 2020). Self-directed teacher professional development often happens when teachers decide to pursue their own professional development goals, such as learning a new teaching strategy or technology tool. This includes independent learning, sometimes initiated at the learners' discretion, using available resources that may include computers and internet. In this approach, teachers are involved in initiating and designing their own professional (Alshaikhi, 2020).

In contrast to traditional teacher professional development, self-directed teacher professional development emphasizes individualized professional learning and expert content delivery. Self-directed teacher professional development allows teachers to take ownership of their own learning and tailor their professional development to their specific needs and interests. Continuous teacher professional development ensures that teachers have the capacity to continually plan and implement quality teaching (Alshaikhi, 2020; Lim, et al, 2020).

Self-directed teacher professional development can be facilitated through a variety of methods, including online courses, webinars, conferences, and peer-to-peer learning

communities (Lesiak, et al., 2022). Teacher-directed professional learning is an approach that provides teachers with choice, voice, discretion, and autonomy over how they engage in professional learning. Self-directed teacher professional development can help teachers to develop new skills, improve their teaching practices, and stay up-to-date with the latest research and trends in education (Alshaikhi, 2020; Lim & Liang, 2020).

Self-directed teacher professional development has several benefits for both teachers and students. Self-directed teacher professional development allows teachers to take ownership of their own learning and tailor their professional development to their specific needs and interests (Alshaikhi, 2020; Lim & Liang, 2020).

By pursuing their own professional development goals, teachers can become more reflective practitioners, continually improving their teaching practices and student learning outcomes. Self-directed teacher professional development can help teachers to develop new skills, improve their teaching practices, and stay up-to-date with the latest research and trends in education. Self-directed teacher professional development can also lead to increased job satisfaction and motivation among teachers, which can have a positive impact on student learning outcomes. Self-directed teacher professional development can also provide teachers with the flexibility to engage in professional development at their own pace and on their own schedule, which can be especially important for teachers with busy schedules or other commitments. By improving their teaching practices and staying up-to-date with the latest research and trends in education, teachers can provide students with a high-quality education that prepares them for success in the future (Alshaikhi, 2020; Lim & Liang, 2020).

Self-directed teacher professional development benefits teachers' professional growth in several ways. Self-directed teacher professional development allows teachers to take ownership of their own learning and tailor their professional development to their specific needs and interests (Alshaikhi, 2020).

Teachers can become more reflective practitioners, continually improving their teaching practices and student learning outcomes. Self-directed teacher professional development can help teachers to develop new skills, improve their teaching practices, and stay up-to-date with the latest research and trends in education. Self-directed teacher professional development can also lead to increased job satisfaction and motivation among teachers, which can have a positive impact on student learning outcomes (Alshaikhi, 2020; Lim & Liang, 2020).

Self-directed teacher professional development can provide teachers with the flexibility to engage in professional development at their own pace and on their own schedule, which can be especially important for teachers with busy schedules or other commitments (Lim & Linag, 2020). Self-directed teacher professional development can also help teachers to develop a growth mindset, which is essential for ongoing professional growth and development. By improving their teaching practices and staying up-to-date with the latest research and trends in education, teachers can provide students with a high-quality education that prepares them for success in the future (Alshaikhi, 2020; Lim & Liang, 2020).

Self-directed teacher professional development has several advantages over traditional teacher professional development. Self-directed teacher professional development allows teachers to take ownership of their own learning and tailor their

professional development to their specific needs and interests. By pursuing their own professional development goals, teachers can become more reflective practitioners, continually improving their teaching practices and student learning outcomes (Alshaikhi, 2020; Lim & Liang, 2020).

Self-directed teacher professional development can help teachers to develop new skills, improve their teaching practices, and stay up-to-date with the latest research and trends in education. Self-directed teacher professional development can also lead to increased job satisfaction and motivation among teachers, which can have a positive impact on student learning outcomes. Self-directed teacher professional development can provide teachers with the flexibility to engage in professional development at their own pace and on their own schedule, which can be especially important for teachers with busy schedules or other commitments (Gaible & Burns, 2005).

In contrast, traditional teacher professional development often involves a one-size-fits-all approach that may not meet the specific needs and interests of individual teachers. Traditional teacher professional development can also be time-consuming and may not provide teachers with the flexibility they need to engage in professional development on their own schedule (Gaible & Burns, 2005).

2.10.4 Leadership Models for Collaborative Learning

Proposed by Reid (2017), in this model teacher and school environment interact in terms of learning for job, learning about the job and learning on the job. A leadership model for collaborative learning is a management practice in which members of a leadership team work together across sectors to make decisions and keep the focus on student learning outcomes. Collaborative leadership enables educators, students, and families to work

together to define and co-create learning environments that allow for student success (Reid, 2017).

A team approach to school leadership fosters participation, teachers' involvement, open communication, and shared goals. Collaborative leadership means maintaining a process that includes everyone involved in an issue or organization, depending on collaborative decision-making and shared leadership. In determining a collaborative leadership model, practitioners at teacher-powered schools have collective autonomy to make decisions influencing school culture, curriculum, and instruction. Collaborative leadership enables educators, students, and families to work together to define and co-create learning environments that allow for student success. Collaborative leadership can help to build trust and respect among team members, leading to increased job satisfaction and motivation. By working together to make decisions and keep the focus on student learning outcomes, collaborative leadership can help to create a positive and supportive learning environment for students and teachers alike (Reid, 2017).

Implementing a collaborative leadership model in a school involves several key steps. A team approach to school leadership fosters participation, teachers' involvement, open communication, and shared goals. A team leadership approach is imperative for building a collaborative learning environment that leads to an attitudinal shift from the personal 'I' to the collective 'we'. The first step in implementing a collaborative leadership model is to establish a shared vision and goals for the school that are focused on student learning outcomes (Heck & Hallinger, 2010; Reid, 2017).

This shared vision and goals should be developed collaboratively by all members of the leadership team, including teachers, administrators, and other stakeholders. The next step is to establish clear roles and responsibilities for each member of the leadership team,

ensuring that everyone understands their role in achieving the shared vision and goals. Effective communication is also essential for implementing a collaborative leadership model, with regular meetings and open communication channels established to facilitate collaboration and decision-making (Heck & Hallinger, 2010; Reid, 2017).

Finally, it is important to establish a culture of trust and respect among team members, with a focus on shared decision-making and a willingness to listen to and learn from others. By following these steps, schools can implement a collaborative leadership model that fosters participation, open communication, and shared goals, leading to improved student learning outcomes and a positive and supportive learning environment for all (Heck & Hallinger, 2010; Reid, 2017).

2.10.5 Online Teacher Training Models

With the advancement in ICT in education, several online teacher training models have come to surface during the last decade. One model is the pedagogical model, which emphasizes the use of interactive and collaborative learning activities to engage teachers in the learning process (Hertz, et al., 2022). Another model is the distance education model, which uses a variety of technologies, such as video conferencing, online discussion forums, and interactive simulations, to promote active learning and collaboration among teachers (Gaible, & Burns, 2023). A third model is the online professional development model, which offers high-quality online continuing education courses through regionally accredited universities across the country. These courses are designed to provide teachers with the knowledge and skills they need to improve their teaching practices and meet their state continuing education requirements (Hertz, et al., 2022).

A model for teacher training to improve students' 21st-century skills in online and blended learning is another model that focuses on using film education to train teachers (Breddermann, et al., 2018). A pedagogical model for effective online teacher training involves peer exchange and peer review as the cornerstones of the pedagogical model, used for learning and assessment throughout the courses. Other models include blended learning, which combines online and face-to-face instruction, and flipped classroom models, which involve students watching online lectures before coming to class to engage in more interactive activities. These models can be used to deliver a variety of training programmes, including professional development, certification programmes, and degree programmes. Online teacher training models offer several benefits, including flexibility, accessibility, and cost-effectiveness, making them an attractive option for teachers looking to improve their skills and knowledge. Overall, there are several online teacher training models available, each with its own unique features and benefits, providing teachers with a range of options to choose from (Breddermann, et al., 2018; Hertz, et al., 2022).

Teachers can enroll in courses and complete them at their own pace, with access to pre-recorded videos, readings, and assessments. Blended learning approach combines online learning with face-to-face instruction, allowing teachers to engage in both online coursework and in-person coaching and feedback. Teachers can receive one-on-one coaching and feedback from a remote coach, who provides guidance and support through video conferencing. Teachers can participate in online communities or collaborative learning groups, where they can exchange ideas, discuss challenges, and learn from one another. Micro-credentialing approach allows teachers to earn digital badges or certificates for completing specific online courses or training modules, which can help to recognize

and incentivize their professional development (Breddermann, et al., 2018; Hertz, et al., 2022).

2.10.5.1 Synchronous and asynchronous models of online teacher training Models

Synchronous and asynchronous are two common models of online teacher training. Synchronous model involves live online training sessions that occur at a specific time and date, with teachers and trainers interacting in real-time through video conferencing, chat, or other online tools, while asynchronous model allows teachers to complete training modules at their own pace, with pre-recorded videos, readings, and assessments available for access at any time. This model often includes discussion forums, email or messaging platforms, and other tools for teachers to interact with trainers or peers (Khanal, 2021).

Both models have their benefits and drawbacks. Synchronous training allows for real-time interaction and collaboration, which can be useful for discussing complex topics and providing immediate feedback. However, it can be challenging to schedule and may not accommodate the schedules of all participants. Asynchronous training, on the other hand, provides more flexibility and allows for self-paced learning, but may lack the social connection and interaction of synchronous training (Khanal, 2021).

A pedagogical model for effective online teacher professional development is considered one of the most effective online teacher training models. This model emphasizes the importance of peer exchange and peer review as the cornerstones of the pedagogical model, used for learning and assessment throughout the courses. Another effective online teacher training model is the Feedback-Based model, which involves

providing teachers with feedback on their teaching practices and helping them to improve their skills and knowledge (Khanal, 2021).

The Experiential model is another effective model that involves providing teachers with hands-on experience and opportunities to apply their learning in real-world settings. The Activity-Based model is another effective model that involves providing teachers with interactive activities and assignments that help them to apply their learning in practical ways. The Flipped-Classroom model is another effective model that involves providing teachers with online lectures and resources that they can access before coming to class to engage in more interactive activities. These models can be used to deliver a variety of training programmes, including professional development, certification programmes, and degree programmes. Overall, the most effective online teacher training models are those that provide teachers with opportunities to apply their learning in practical ways, receive feedback on their teaching practices, and engage in peer exchange and peer review (Chiaro, 202; Khanal, 2021).

Based on the search results, the pedagogical model for effective online teacher professional development is the most used model for online teacher training. This model emphasizes the importance of peer exchange and peer review as the cornerstones of the pedagogical model, used for learning and assessment throughout the courses. The model focuses on providing teachers with opportunities to apply their learning in practical ways, receive feedback on their teaching practices, and engage in peer exchange and peer review. While other models, such as the Feedback-Based, Experiential, Activity-Based, and Flipped-Classroom models, are also effective for online teacher training, the pedagogical

model for effective online teacher professional development is the most used model based on the search results (Chiaro, 202; Khanal, 2021).

According to Martin, et al., 2021, there are case studies and success stories of the pedagogical model for effective online teacher professional development being implemented. One study found that successful professional development programmes encourage the development of teachers' learning communities and support teachers in applying their learning in practical ways (Chiaro, 202; Khanal, 2021).

Another study examined the Teacher Academy initiative of the European School net, which used the pedagogical model for effective online teacher professional development, and found that the model was effective in improving teachers' skills and knowledge and promoting collaboration and peer exchange among teachers as indicated by Martin, et al., 2021. A literature review of online teacher professional development also found that the pedagogical model for effective online teacher professional development was effective in engaging teachers in meaningful professional learning in online contexts. Additionally, online professional development courses offered by organizations such as Model Teaching have been successful in providing teachers with high-quality, affordable professional development that is designed to improve instructional effectiveness and meet state continuing education requirements (Chiaro, 202; Khanal, 2021).

Overall, there are several case studies and success stories of the pedagogical model for effective online teacher professional development being implemented, demonstrating its effectiveness in improving teachers' skills and knowledge and promoting collaboration and peer exchange among teachers (Mhlongo, et al., 2023). Mhlongo, et al., 2023 further elaborate that a pedagogical model for effective online teacher professional development

is considered one of the most effective online teacher training models (Hertz, et al., 2022). This model emphasizes the importance of peer exchange and peer review as the cornerstones of the pedagogical model, used for learning and assessment throughout the courses. Another effective online teacher training model is the Feedback-Based model, which involves providing teachers with feedback on their teaching practices and helping them to improve their skills and knowledge. The Experiential model is another effective model that involves providing teachers with hands-on experience and opportunities to apply their learning in real-world settings (Kahnal, 2021).

The Activity-Based model is another effective model that involves providing teachers with interactive activities and assignments that help them to apply their learning in practical ways. The Flipped-Classroom model is another effective model that involves providing teachers with online lectures and resources that they can access before coming to class to engage in more interactive activities. These models can be used to deliver a variety of training programmes, including professional development, certification programmes, and degree programmes. Overall, the most effective online teacher training models are those that provide teachers with opportunities to apply their learning in practical ways, receive feedback on their teaching practices, and engage in peer exchange and peer review (Mhlongo, et al.,, 2023).

Based on the search results, the pedagogical model for effective online teacher professional development is the most used model for online teacher training. This model emphasizes the importance of peer exchange and peer review as the cornerstones of the pedagogical model, used for learning and assessment throughout the courses. The model focuses on providing teachers with opportunities to apply their learning in practical ways,

receive feedback on their teaching practices, and engage in peer exchange and peer review. While other models, such as the Feedback-Based, Experiential, Activity-Based, and Flipped-Classroom models, are also effective for online teacher training, the pedagogical model for effective online teacher professional development is the most used model based on the search results (Mhlongo, et al., 2023).

One study found that successful professional development programmes encourage the development of teachers' learning communities and support teachers in applying their learning in practical ways (Hertz, et al., 2022). Another study examined the Teacher Academy initiative of the European School net, which used the pedagogical model for effective online teacher professional development, and found that the model was effective in improving teachers' skills and knowledge and promoting collaboration and peer exchange among teachers. A literature review of online teacher professional development also found that the pedagogical model for effective online teacher professional development was effective in engaging teachers in meaningful professional learning in online contexts (Mhlongo, et al., 2023; Hertz, et al., 2022; Lay, et al., 2020).

Additionally, online professional development courses offered by organizations such as Model Teaching have been successful in providing teachers with high-quality, affordable professional development that is designed to improve instructional effectiveness and meet state continuing education requirements. Overall, there are several case studies and success stories of the pedagogical model for effective online teacher professional development being implemented, demonstrating its effectiveness in improving teachers' skills and knowledge and promoting collaboration and peer exchange among teachers (Mhlongo, et al., 2023; Hertz, et al., 2022; Lay, et al., 2020).

The pedagogical model for effective online teacher professional development works by emphasizing the importance of peer exchange and peer review as the cornerstones of the pedagogical model, used for learning and assessment throughout the courses. The model focuses on providing teachers with opportunities to apply their learning in practical ways, receive feedback on their teaching practices, and engage in peer exchange and peer review. The model also emphasizes the importance of collaboration and the development of learning communities among teachers, which can help to promote ongoing professional growth and development. The model typically involves a combination of online lectures, interactive activities, and assignments, as well as opportunities for peer exchange and peer review.

The model may also include face-to-face professional development opportunities, such as workshops or conferences, to supplement the online learning experience. The pedagogical model for effective online teacher professional development has been found to be effective in engaging teachers in meaningful professional learning in online contexts and improving their skills and knowledge (Lay, et al., 2020). Overall, the model works by providing teachers with opportunities to apply their learning in practical ways, receive feedback on their teaching practices, and engage in peer exchange and peer review, promoting ongoing professional growth and development (Mhlongo, et al., 2023; Hertz, et al., 2022; Lay, et al., 2020).

2.10.5.2 Web-Based Interactive Model

A web-based interactive teacher training model is a type of online teacher training that emphasizes the use of interactive technologies to engage teachers in the learning process. This model typically involves a combination of online lectures, interactive

activities, and assignments, as well as opportunities for peer exchange and peer review. The model may also include face-to-face professional development opportunities, such as workshops or conferences, to supplement the online learning experience (Hertz, et al., 2022).

The web-based interactive teacher training model is designed to be flexible and accessible, allowing teachers to engage in professional development at their own pace and on their own schedule (Hertz, et al., 2022). This model is also designed to be interactive and engaging, using a variety of technologies, such as video conferencing, online discussion forums, and interactive simulations, to promote active learning and collaboration among teachers (Burns, 2023). The web-based interactive teacher training model has been found to be effective in engaging teachers in meaningful professional learning in online contexts and improving their skills and knowledge. Overall, the web-based interactive teacher training model is an effective and flexible approach to online teacher training that emphasizes the use of interactive technologies to engage teachers in the learning process (Hertz, et al., 2022).

Compared to traditional teacher training methods, the web-based interactive teacher training model offers several advantages. One advantage is that it provides teachers with a flexible and accessible learning environment, allowing them to engage in professional development at their own pace and on their own schedule (Breddermann, et al., 2018).

Another advantage is that it promotes active learning and collaboration among teachers, using a variety of technologies to engage teachers in the learning process (Jin, et al., 2021). The also provides teachers with opportunities to apply their learning in practical

ways, receive feedback on their teaching practices, and engage in peer exchange and peer review, promoting ongoing professional growth and development (Tseng & Chen, 2020).

Additionally, it can be cost-effective, as it eliminates the need for travel and other expenses associated with traditional face-to-face professional development opportunities. Traditional teacher training methods, on the other hand, often involve face-to-face instruction, which can be time-consuming and expensive (Tseng & Chen, 2020). Traditional methods may also be less flexible and accessible, as they may require teachers to attend training sessions at specific times and locations (Tseng & Chen, 2020). Overall, it offers several advantages over traditional teacher training methods, including flexibility, accessibility, cost-effectiveness, and opportunities for active learning and collaboration among teachers (Breddermann, et al., 2018).

2.10.5.3 Benefits of Web-Based Interactive Model

Web-based interactive teacher training model provides teachers with a flexible and accessible learning environment, allowing them to engage in professional development at their own pace and on their own schedule (Hertz, et al., 2022). A benefit of this model is that it promotes active learning and collaboration among teachers, using a variety of technologies, such as video conferencing, online discussion forums, and interactive simulations, to engage teachers in the learning process (Hertz, et al., 2022).

It provides teachers with opportunities to apply their learning in practical ways, receive feedback on their teaching practices, and engage in peer exchange and peer review, promoting ongoing professional growth and development (Hertz, et al., 2022). It has been found to be effective in engaging teachers in meaningful professional learning in online contexts and improving their skills and knowledge. Additionally, it can be cost-effective,

as it eliminates the need for travel and other expenses associated with traditional face-to-face professional development opportunities. It provides teachers with a flexible, accessible, and engaging approach to professional development that promotes ongoing professional growth and development, making it an effective and attractive option for teachers looking to improve their skills and knowledge (Hertz, et al., 2022).

2.10.5.4 Web 2.0 LMS Model

The Web 2.0 LMS model of teacher training is a type of online teacher training that combines the use of a learning management system (LMS) with Web 2.0 tools and technologies to engage teachers in the learning process (Shihab, 2008). The model typically involves a combination of online lectures, interactive activities, and assignments, as well as opportunities for peer exchange and peer review, all of which are facilitated through the LMS (Shihab, 2008). The Web 2.0 LMS model also incorporates the use of Web 2.0 tools and technologies, such as social media, blogs, wikis, and podcasts, to promote active learning and collaboration among teachers. The model is designed to be flexible and accessible, allowing teachers to engage in professional development at their own pace and on their own schedule, while also providing opportunities for social interaction and support (Hertz, et al., 2022).

The Web 2.0 LMS model has been found to be effective in engaging teachers in meaningful professional learning in online contexts and improving their skills and knowledge. Overall, the Web 2.0 LMS model of teacher training is an effective and engaging approach to online teacher training that combines the use of a learning management system with Web 2.0 tools and technologies to promote active learning and collaboration among teachers (Hertz, et al., 2022).

Web 2.0 LMS tools that are used in this model, may include blogs, wikis, podcasts, social media, and RSS feeds (Scot, et al., 2015; Shihab, 2008). Blogs are online journals that allow teachers to share their thoughts and ideas with others, while wikis are collaborative websites that allow teachers to work together on projects and share information. Podcasts are audio or video recordings that can be downloaded and listened to at any time, while social media platforms such as Twitter and Facebook can be used to connect with other teachers and share resources (Scot, et al., 2015; Shihab, 2008).

RSS feeds are used to deliver content from websites directly to users, allowing teachers to stay up-to-date on the latest news and information in their field (Scot, et al., 2015; Shihab, 2008). These Web 2.0 tools can be integrated into an LMS to provide teachers with a flexible and engaging learning environment that promotes active learning and collaboration among teachers (Scot, et al., 2015).

The use of Web 2.0 tools in LMS for teacher training provides teachers with a variety of tools and resources to engage in meaningful professional learning and collaborate with other teachers, making it an effective and attractive option for teachers looking to improve their skills and knowledge (Scot, et al., 2015; Shihab, 2008). Web 2.0 tools can improve teaching and collaboration in high schools in several ways. Firstly, these tools promote interaction, communication, and collaboration among teachers and students, allowing them to work together on projects and share information (An, et al., 2010).

Secondly, Web 2.0 tools can help to create a more engaging and interactive learning environment, which can improve student engagement and achievement (Lage, 2014). Thirdly, these tools can help to develop students' technology skills, which are increasingly important in today's digital world. Fourthly, Web 2.0 tools can help to save time and

increase efficiency, allowing teachers to focus on teaching and learning rather than administrative tasks (Scot, et al., 2015; Shihab, 2008).

Finally, these tools can help to foster a sense of community and collaboration among teachers and students, which can improve morale and create a more positive learning environment. The use of Web 2.0 tools in high schools can improve teaching and collaboration by promoting interaction, communication, and collaboration among teachers and students, creating a more engaging and interactive learning environment, developing students' technology skills, saving time, and increasing efficiency, and fostering a sense of community and collaboration among teachers and students (Scot, et al., 2015; Shihab, 2008).

2.11 Challenges Faced in Using Online Teacher Training Models

Applying different teaching models in an online setting can present several challenges. One challenge is the lack of face-to-face interaction, which can make it difficult to establish a sense of community and collaboration among learners (Hertz, et al., 2022).

Another challenge is the need for learners to have access to reliable internet and technology, which may not be available in all areas (Hertz, et al., 2022). Additionally, some learners may struggle with self-motivation and discipline, as they may need to manage their own learning and stay on track with their coursework. Another challenge is the need for teachers to have the skills and knowledge necessary to effectively teach in an online setting, which may require additional training and professional development. Finally, the rapid pace of technological change can make it difficult to keep up with the latest tools and technologies, and to ensure that teaching models are up-to-date and effective (Hertz, et al., 2022).

Overall, applying different teaching models in an online setting can present several challenges, including the lack of face-to-face interaction, the need for reliable internet and technology, the need for self-motivation and discipline, the need for additional training and professional development, and the rapid pace of technological change (Hertz, et al., 2022).

2.12 Summary

There are several effective online teacher training models available. One effective model is the pedagogical model, which emphasizes the use of interactive and collaborative learning activities to engage teachers in the learning process (Hertz, et al., 2022). Another effective model is the training for online teachers' model, which includes mentoring, viewing models of effective online teaching, and engaging in professional development opportunities (Zweig & Stafford, 2016).

A third effective model is the model for teacher training to improve students' 21st-century skills in online and blended learning, which emphasizes the use of audiovisual content and film education to develop new skills in students (Breddermann, et al., 2018). This model is useful for K-12 education and can be implemented through an online and blended learning approach. Additionally, the model that combines different teaching models in an online setting can be effective in achieving the highest impact and ensuring that learners retain knowledge. Overall, the most effective online teacher training models are those that emphasize active learning, collaboration, and engagement, and that provide teachers with opportunities to develop new skills and knowledge in a flexible and accessible learning environment (Zweig & Stafford, 2016).

Different teaching models can be applied in an online setting in several ways. One way is to use a pedagogical model that emphasizes the use of interactive and collaborative

learning activities to engage learners in the learning process. Another way is to use a feedback-based model, which provides learners with feedback on their performance and encourages them to reflect on their learning. An experiential model can also be used, which emphasizes the use of real-life situations and hands-on activities to promote active learning and engagement (Afonso, et al., 2022).

. Additionally, an activity-based model can be used, which emphasizes the use of interactive activities and simulations to engage learners in the learning process. A flipped classroom model can also be used, which involves learners watching pre-recorded lectures or reading materials before class, and then engaging in interactive activities and discussions during class time (Afonso, et al., 2022). To develop a unique teaching model, teachers can prepare a teaching structure that considers the diverse experiences, backgrounds, and roles of their learners, and organize various activities that promote active learning and engagement. Overall, different teaching models can be applied in an online setting by emphasizing active learning, collaboration, and engagement, and by providing learners with opportunities to develop new skills and knowledge in a flexible and accessible learning environment (Afonso, et al., 2022; Zweig & Stafford, 2016).

There is no one-size-fits-all answer to which model of teacher training is most effective, as different models have their own strengths and weaknesses. The modeling model, which involves demonstrating teaching techniques to trainees by treating them as students, has been found to be effective in some studies (Zweig & Stafford, 2016). However, other studies have found that the substance and content of a teacher's programme, regardless of model, seems to be the most important aspect in determining how training translates to classroom success (Zweig & Stafford, 2016).

Effective teacher professional development has been found to incorporate most or all the following: sustained training, model lesson observation, teacher collaboration, and opportunities for feedback and reflection (Darling-Hammond, et al., 2017). The Train the Trainer model, which is like peer-to-peer instruction, has also been recognized as an effective strategy for all learners in all contexts. Ultimately, the effectiveness of a teacher training model depends on various factors, such as the context, the content, and the quality of the training (Darling-Hammond, et al., 2017).

2.13 Aspects of Teacher Training

The most important aspects of teacher training include a focus on content knowledge, active learning, coherence, duration, and modeling (Mathews, 2014). Effective teacher training should provide teachers with the necessary content knowledge and skills to teach their subject matter effectively (Mathews, 2014).

Active learning opportunities, such as hands-on activities and collaborative learning, can help teachers develop their skills and competencies in a meaningful way. Coherence refers to the alignment between the training content and the actual teaching practices that teachers are expected to implement in the classroom. Duration refers to the length of the training programme, with longer programmes generally being more effective than shorter ones. Modeling involves demonstrating teaching techniques to trainees by treating them as students, and has been found to be an effective aspect of teacher training (Ellman, 2021).

Effective teacher training should also provide opportunities for feedback and reflection, as well as ongoing support and coaching to help teachers improve their teaching practices over time. Ultimately, the most important aspect of teacher training is to provide

teachers with the necessary knowledge, skills, and competencies to be effective in the classroom (Afonso, et al., 2022; Aguilar, 2013).

2.13.1 Features of Effective Teacher Training

According to a survey conducted by Brigham Young University, the five features of effective teacher training are content focus, active learning, coherence, duration, and modeling. Content focus refers to the training's emphasis on the subject matter that teachers will be teaching in the classroom. Active learning opportunities, such as hands-on activities and collaborative learning, can help teachers develop their skills and competencies in a meaningful way (Mathews, 2014).

Coherence refers to the alignment between the training content and the actual teaching practices that teachers are expected to implement in the classroom. Duration refers to the length of the training programme, with longer programmes generally being more effective than shorter ones. Modeling involves demonstrating teaching techniques to trainees by treating them as students, and has been found to be an effective aspect of teacher training. Effective teacher training should also provide opportunities for feedback and reflection, as well as ongoing support and coaching to help teachers improve their teaching practices over time (Mathews, 2014).

2.13.2 Strategies of Effective Teacher Training

Strategies for implementing effective teacher training include providing ongoing professional development opportunities that focus on the curriculum content, teaching methods, and assessment strategies. Professional development can help teachers acquire the necessary skills and competencies for effective curriculum implementation. Collaborative learning opportunities, such as peer coaching and mentoring, can also help

teachers develop their skills in curriculum implementation. Schools can also provide access to high-quality curriculum materials that articulate coherent trajectories of learning and development (Mathews, 2014).

Teacher manuals that include supports for pedagogical strategies needed to enact these lessons can also be provided. An implementation team can establish a data collection plan and train data collectors to monitor teacher performance and provide feedback on areas for improvement. Effective teacher training practices include ongoing support and coaching, opportunities for collaboration and feedback, and access to high-quality curriculum materials and resources. It is also important to understand individual needs and use evidence-based training and development resources (Mathews, 2014).

Making the training practical and easy to implement can also help ensure that teachers are able to apply what they have learned in the classroom. Ultimately, effective teacher training requires a comprehensive and sustained approach that provides teachers with the necessary knowledge, skills, and competencies to be effective in the classroom (Mathews, 2014).

2.13.3 Measuring the Effects of Teacher Training

The effectiveness of teacher training can be measured in various ways. One way is to use value-added models and classroom observations to measure the impact of teacher training on student achievement. Another way is to use surveys and questionnaires to gather feedback from teachers about the training and its impact on their teaching practices. It is also important to consider the frequency and duration of the training, as well as the level of participation and engagement among teachers. Additionally, the use of pre- and post-training assessments can help measure the effectiveness of teacher training by

comparing teachers' knowledge and skills before and after the training (Poproski & Greene, 2018). Ultimately, the effectiveness of teacher training should be measured based on its impact on student learning outcomes and the quality of teaching practices in the classroom.

The most used metrics for measuring teacher effectiveness include value-added models and classroom observations (Proposki & Greene, 2018). Value-added models measure the impact of a teacher on student achievement by comparing students' test scores before and after being taught by the teacher. Classroom observations involve trained observers visiting classrooms to assess the quality of teaching practices and provide feedback to teachers (Proposki & Greene, 2018).

Other metrics that are sometimes used include student surveys, peer evaluations, and self-assessments (Proposki & Greene, 2018). However, there is ongoing debate about the most effective metrics for measuring teacher effectiveness, and some argue that a combination of metrics is necessary to provide a comprehensive picture of a teacher's effectiveness. Ultimately, the most important metric for measuring teacher effectiveness is the impact that a teacher has on student learning outcomes and the quality of teaching practices in the classroom (Proposki & Greene, 2018).

2.14 Teacher Training Programmes in Pakistan

Teacher training has a rich history dating back to ancient civilizations like Greece and China, where mentorship and apprenticeship were primary methods for transmitting knowledge and skills to future educators (Labaree, 2008). The 19th century saw the emergence of formal teacher training institutions, such as normal schools in the United States and teacher training colleges in the United Kingdom (Ogren, 2005).

Throughout the 20th century, teacher training evolved to incorporate more specialized programs and diverse pedagogical approaches (Cochran-Smith & Villegas, 2015). There was also an increased emphasis on ongoing professional development for practicing teachers (Darling-Hammond et al., 2017).

In the contemporary era, teacher training remains a crucial component in preparing high-quality educators to meet the needs of diverse learners in a rapidly changing world (Zeichner, 2014). Modern teacher education programs focus on developing adaptable, reflective practitioners who can navigate the complexities of 21st-century classrooms (Darling-Hammond, 2017).

Online teacher training is a relatively recent development, with the first online courses for teachers appearing in the late 1990s. As internet access and technology improved, online teacher training programmes became more widely available and popular, particularly in the early 2000s. By the 2010s, many universities and organizations were offering fully online teacher training programmes, as well as hybrid programmes that combined online and in-person instruction. Online teacher training has become even more important in recent years as the COVID-19 pandemic has forced many educational institutions to move their professional development programmes to a virtual format. Online teacher training programmes offer several benefits, including flexibility, accessibility, and the ability to connect with educators from around the world (Bayne, et al., 2020).

Teacher training in Pakistan has a rich history dating back to the early 20th century. In 1906, the first teacher training institution, the Government Normal School, was established in Lahore. Over time, additional teacher training institutions were established

throughout the country, with a focus on providing primary and secondary education (Tahira, et al., 2020).

In the 1960s, the government of Pakistan launched several initiatives to modernize teacher education and expand access to training programmes. These initiatives included the establishment of the National Institute of Education in Islamabad, the National College of Education in Lahore, and the Teachers Training College in Karachi (Tahira, et al., 2020).

In the 1990s, the focus of teacher education shifted towards incorporating modern teaching methodologies and the use of technology in classrooms. The government introduced several teacher-training programmes, such as the Primary Education Project, which focused on improving the quality of primary education, and the Secondary Education Sector Reform Programme, which aimed to modernize secondary education in the country (Tahira, et al., 2020).

Today, teacher training in Pakistan is offered by a range of institutions, including universities, colleges, and government agencies. These programmes focus on developing the skills and knowledge teachers need to effectively educate students in a rapidly changing world (Tahira, et al., 2020).

2.15 Online Teacher Training in Pakistan

Online teacher training refers to educational programmes and courses that are designed to help teachers develop the skills and knowledge needed to effectively teach in an online or blended learning environment. These programmes may cover a range of topics, including instructional design, technology integration, online classroom management, and student engagement strategies. Online teacher training may be offered by universities,

professional organizations, or educational technology companies, and can be completed fully online or in a hybrid format that combines online and in-person instruction (Tahira, et al., 2020).

There are several online teacher training programmes available in Pakistan, including those offered by universities, educational technology companies, and government agencies. These programmes may cover a range of topics, including pedagogy, curriculum development, classroom management, and the use of educational technology. Some popular online teacher training programmes in Pakistan include the Virtual University of Pakistan's online teacher training courses, the National Education Foundation's online professional development courses for teachers, and the Punjab Information Technology Board's e-Learn Punjab platform, which offers training and resources for teachers in the Punjab province (Tahira, et al., 2020). Virtual University of Pakistan offers online teacher training courses and programmes for professional development. Alama Iqbal Open University provides online courses and workshops for teachers to enhance their teaching skill (Tahira, et al., 2020).

2.16 Role of Quaid-e- Azam Academy of Educational Development in Teacher Training

The Quaid-e-Azam Academy of Educational Development (QAED) is a training institute for teachers and educational administrators in Pakistan. It was established in 1975 and is in Lahore, Punjab. Quaid-e-Azam Academy of Educational Development offers various training programmes and courses to improve the professional skills of teachers and educational administrators. These include pre-service and in-service teacher training, school leadership and management training, and curriculum development. The institute

also conducts research on education and provides consultancy services to educational institution (Tahira, et al., 2020).

Quaid-e-Azam Academy of Educational Development is considered a reputable training institute in Pakistan and has contributed to the development of education in the country. However, as an AI language model, my information is limited to publicly available sources, and it's important to do thorough research to ensure up-to-date information (Tahira, et al., 2020).

2.17 Online Teacher Training on SNC

2.17.1 Training Modules for Online Training of Primary School Teachers on SNC

Guidelines provided in the Single National Curriculum developed by National Curriculum Committee (NCC), facilitated in developing the content of Training Modules which are devised by content developers of Quaid-e-Azam Academy of Educational Development (QAED). Following day and session-wise modules have been included in the Training of Arts Group of Trainee Teachers;

2.17.1.1 Module 1: Introduction

First session of this module contains introduction to the Training along with brief guidelines of Teaching English at Primary Level in line with Single National Curriculum and English Textbooks of Single National Curriculum focusing the Teaching of Four Language Skills (SNC Training Operation Manual 4.0, 2020).

2.17.1.2 Module 2: Teaching of Listening and Speaking

Focus of module developed for second session is on listening and speaking skills (SNC Training Operation Manual 4.0, 2020).

2.17.1.3 Module 3: Reading and Writing Skills

Module developed for the third Training session contains training material related to reading and writing skills (SNC Training Operation Manual 4.0, 2020).

2.17.1.4 Module 4: Teaching Grammar & Vocabulary

Fourth Module contains training related to teaching of Grammar and Vocabulary (SNC Training Operation Manual 4.0, 2020)

2.17.2 Content Analysis of Training Modules

Content analysis is defined as a research technique for making replicable and valid inferences from various texts or other meaningful materials to the contexts of their use for different purposes (Krippendorff, 2004). It involves determining the presence of certain words, themes, or concepts within qualitative data, such as text from documents, books, or reading materials (Columbia Public Health, n.d.). The content analysis of the Training Modules for Online Training of Primary School Teachers of English can be conducted by considering the alignment and clarity of module objectives with the Single National Curriculum (SNC). The SNC aims to ensure uniform educational attainment across Pakistan, focusing on the development of analytical, critical, and creative thinking, and integrating Information Communication Technology for the first time (Tanas & Fulmer, 2023).

To ensure alignment and clarity of module objectives with the SNC, instructional design techniques such as task and content analysis, interviews with subject matter experts, focus groups, and learner observations are essential (Tanas & Fulmer, 2023). Clearly defining module objectives and aligning them with the SNC objectives, as well as showing students how course objectives align with module objectives and which activities and

assessments correspond to each objective, is crucial. This alignment helps students achieve desired learning outcomes and improves educational attainment (Tanas & Fulmer, 2023).

Another important consideration is the alignment of training modules with the competencies, standards, benchmarks, and student learning outcomes set by the SNC. The SNC is based on standards, benchmarks, and outcomes across all subjects, emphasizing analytical, critical, and creative thinking through an activity-based approach (Ministry of Federal Education and Professional Training, 2021). Ensuring this alignment involves using instructional design techniques and curriculum mapping to align learning activities, outcomes, and assessments with course and program goals (Tanas & Fulmer, 2023). The content of the SNC for Math and Science is aligned with the TIMSS content framework and international commitments like Sustainable Development Goals-4 (Ministry of Federal Education and Professional Training, 2021).

Hsieh and Shannon (2005) suggest three approaches to content analysis: conventional, directed, and summative. Summative content analysis involves counting and comparing key words, followed by interpreting the context underlying the content (Tanas & Fulmer, 2023).

2.17.3 Types of Content Analysis

There are different types of content analysis of training modules. One type is content domain analysis, which identifies the main content and its organization in a hierarchical structure, dividing the course into modules (Slocum, & Rolf., 2021).

Another type is content level analysis, which determines how the content should be sequenced to achieve the domain level instructional goals. Linear vs. non-linear analysis is conducted to analyze content for sequence, and related vs. non-related analysis helps to

assess content for relevance. Content analysis can also be conducted on relevant training materials, organizational documents, interviews with subject matter experts, focus groups, and observation of the learners (Slocum, & Rolf., 2021).

As a descriptive method, content analysis identifies patterns within and across multiple texts and forms of texts, such as the presence of certain words or concepts, syntax structures, or question types (Slocum, & Rolf., 2021).

2.17.4 Content Analysis Domain

Content domain analysis is a type of content analysis that identifies the main content and its organization in a hierarchical structure, dividing the course into modules. It is used to determine the purpose of instructional content, whether it is to change the learners' cognitive, emotional, or physical status (Nowell, et al., 2017).

Content domain analysis is necessary during the instructional design process, as different types of content will likely require different strategies. It is conducted before determining which media should be used to deliver the content. Content domain analysis is also used to check the target knowledge of several domains of learning (Tanas, & Fulmer., 2023). It should be conducted prior to selecting the instructional approach, and content level analysis should also be conducted to determine how the content should be sequenced to achieve the domain level instructional goals (Nowell, et al., 2017).

Content analysis can be used to compare training modules with textbooks. Content analysis identifies patterns within and across multiple texts and forms of texts. Content domain analysis is a type of content analysis that identifies the main content and its organization in a hierarchical structure, dividing the course into modules. It is used to determine the purpose of instructional content, whether it is to change the learners'

cognitive, emotional, or physical status. Task/content analysis is a set of activities that help instructional designers understand the domain to be taught (Nowell, et al., 2017) .

It begins with the needs or goals derived from the definition of the instructional problem. An understanding of the learner's knowledge and background related to the instructional domain helps designers determine the beginning point for the analysis as well as the depth and breadth of analysis. Content analysis can be conducted on relevant training materials, organizational documents, interviews with subject matter experts, focus groups, and observation of the learners (Nowell, et al., 2017).

2.17.5 Steps in Content Analysis

Content analysis is a set of activities that help instructional designers understand the domain to be taught. It is a method used to identify patterns within and across multiple texts and forms of texts. Content analysis can be used to determine the best learning approaches and is key to excellence in blended learning. It can be used to assess challenges involved with infant feeding in emergency contexts. These steps include, selecting the content for analysis, defining the units and categories of analysis, developing a set of rules for coding the content, defining, and applying the coding rules with consistency, analyzing the data by summarizing key findings and identifying patterns and interpreting the results and drawing conclusions (Krippendorff, 2004; Nowell, et al., 2017).

The level of analysis can be decided based on the research question, and it can be at the word, word sense, phrase, sentence, or theme level. Content analysis is a technique for examining the content or information and symbols contained in written documents or other communication media. It is an approach to quantify and identify patterns within and across multiple texts and forms of text (Krippendorff, 2004; Nowell, et al., 2017).

2.17.6 Methods of Content Analysis

The most common methods used in content analysis for training modules and textbooks are content domain analysis and content level analysis. Content domain analysis identifies the main content and its organization in a hierarchical structure, dividing the course into modules. It is used to determine the purpose of instructional content, whether it is to change the learners' cognitive, emotional, or physical status. Content level analysis determines how the content should be sequenced to achieve the domain level instructional goals. Linear vs. non-linear analysis is conducted to analyze content for sequence, and related vs. non-related analysis helps to assess content for relevance (Krippendorff, 2004; Nowell, et al., 2017).

Other methods used in content analysis include analyzing the type and level of content, using an approach that allows students to view all related modules as a complete unit, and grouping the delivery of related modules to have a positive impact on content retention. Content analysis can also be conducted on relevant training materials, organizational documents, interviews with subject matter experts, focus groups, and observation of the learners (Krippendorff, 2004; Nowell, et al., 2017).

Measuring the effectiveness of training modules is important to ensure that the desired learning outcomes are achieved. There are several ways to measure the effectiveness of training modules, including discussions, surveys and questionnaires, post-training quizzes, assessments, and examinations. To measure training effectiveness accurately, it is crucial to define the training's goals and objectives clearly before implementation. The effectiveness of training modules can also be measured by analyzing

the learning outcomes achieved by the students and comparing them with the desired learning outcomes (Krippendorff, 2004; Nowell, et al., 2017).

The effectiveness of training modules can also be measured by assessing the impact of training on the learner's knowledge, skills, performance, and the company's return on investment. To measure training effectiveness accurately, it is important to choose the best suitable method depending on the type of training and the organization's unique needs. Some best practices for measuring training effectiveness include not overwhelming oneself with too many Key Performance Indicators, carefully choosing the best suitable method, and collecting data on measurable outcomes. By measuring the effectiveness of training modules, it is possible to identify areas for improvement and ensure that the desired learning outcomes are achieved (Krippendorff, 2004; Nowell, et al., 2017).

2.17.7 Tools of Content Analysis

There are several tools and software used for content analysis in education. Some of the most common ones include Dedoose, MAXQDA, and NVivo. These software programmes are well-designed for conducting content analyses as well as systematic literature reviews. Content analysis can also be conducted manually using spreadsheets or other data analysis tools (Elo, et al., 2014).

The tools used for content analysis depend on the type of content being analyzed and the research question being addressed. For example, content analysis of online discussion boards or multimedia productions may require different tools than content analysis of textbooks or training modules. Task and content analysis is a set of activities that help instructional designers understand the domain to be taught. It is a critical part of the instructional design process and can be conducted using a variety of tools and

techniques, including interviews with subject matter experts, focus groups, and observation of the learners (Elo, et al., 2014).

Measuring the effectiveness of training modules aligned with the Single National Curriculum (SNC) is important to ensure that the desired learning outcomes are achieved. To measure the effectiveness of training modules aligned with the SNC, it is important to define the training's goals and objectives clearly before implementation. The effectiveness of training modules can be evaluated using a three-step approach that evaluates the current state of the training's alignment with the Single National Curriculum, measures the impact of the training, and ensures that the learning is being applied. The effectiveness of training modules can also be measured by assessing the development needs and creating processes to align them with the Single National Curriculum (Elo, et al., 2014).

The assessment of the effectiveness of training modules can be conducted using a variety of methods, including pre- and post-training assessments, surveys, focus groups, and observation of the learners. The effectiveness of training modules can also be measured by analyzing the learning outcomes achieved by the students and comparing them with the desired learning outcomes set in the Single National Curriculum. By measuring the effectiveness of training modules aligned with the Single National Curriculum, it is possible to identify areas for improvement and ensure that the desired learning outcomes are achieved (Elo, et al., 2014).

2.18 Training of Teachers on Single National Curriculum

After the launch of Single National Curriculum (SNC) in Punjab, Quaid-e-Azam Academy for Educational Development (QAED) was engaged to manage and organize Teachers Training of all the PSTs across the province in May, 2021. The training

programme is being carried out in three stages after development of training modules by expert content developers (SNC Training Operation Manual 4.0, 2020).

2.18.1 Training of Lead Trainers

Selected 55 lead trainers from Punjab were given training in: -

- I- Use of Microsoft Teams Software for interactive learning,
- II- Training through Learning Management System (LMS)

In addition to that, the Lead Trainers were trained exclusively in all the eight subjects areas taught at the Primary level in a six-day face to face training mode (SNC Training Operation Manual 4.0, 2020).

2.18.2 Training of Master Trainers

In the second phase, around 2523 selected Master Trainers for all the subjects taught at Primary School Level, were given a six-day technical training before a four-day training of the teaching of eight subject areas. Both the training programmes were conducted online (SNC Training Operation Manual 4.0, 2020).

2.18.3 Training of Teachers

All the trainee Elementary School Teachers were categorized in Science, Arts and General groups with respect to subject areas taught at the Primary level as under:

Table 2.1: *Groups of Teachers for Training on Single National Curriculum*

Group	Subjects
Science Group	Science, Mathematics
Arts Group	Islamiat, English, Urdu
General Group	Social Studies, General Knowledge, Early Childhood Care and Education (ECE)

Source: SNC Training Operation Manual 4.0

Every Primary School Teacher concerned was given a three-day training on LMS in each group allocating one day of training for each subject after a one-day interactive session on Microsoft Team.

2.18.4 Model of SNC Training

A blend of Web 2.0 asynchronous training using a Learning Management System (LMS) was adopted for online training of PST teachers. In this way it was a hybrid model of training that included both synchronous and asynchronous components of online training (SNC Training Operation Manual 4.0, 2020).

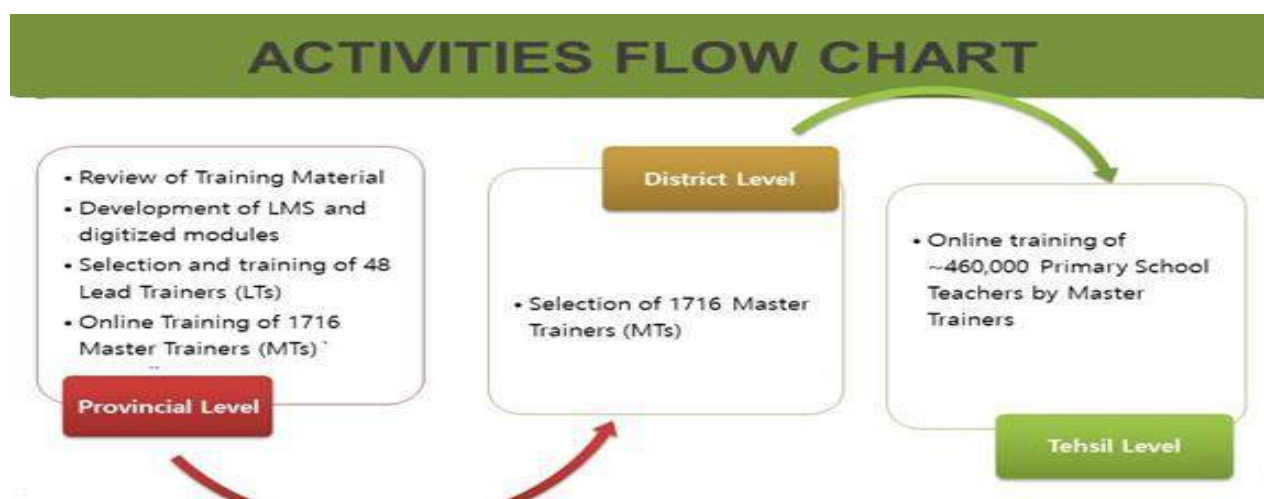


Figure 2.1: Flow chart of training Activities on SNC

SNC Training Operation Manual 4.0, Quaid-e-Azam Academy for Educational Development (QAED)

2.19 Review of Research on Programme Evaluation

Teacher training is imparted for curriculum implementation after induction of teaching content and textbooks in the schools. As teacher training is directly related to enhancement in teachers' pedagogical competencies which ultimately lead to better student learning and achievement, educationists have conducted several research studies in this area. For example, Raja and Wei (2014) evaluated the effectiveness of teacher training programmes in Islamabad Model Colleges. Kesici and Cavus (2018) published a detail of the evaluation of teacher training programmes in the United States of America in terms of Student-Centered practices used in the lessons. Vicky (2016) investigated teacher factors influencing implementation of integrated English curriculum in public secondary schools. Mandukwini (2016) investigated challenges faced in curriculum implementation in high schools. (Alsubaie, 2016; Patnakar, 2013) conducted a study on the role of teachers in curriculum development.

Research in curriculum implementation and evaluation of teacher training programmes involves the use of various evaluation models and approaches to assess the effectiveness of educational programmes. The constructivist approach is one such approach that focuses on evaluating the educational process of students in terms of fundamental principles and approaches based on the constructivist. The constructivist approach emphasizes the importance of involving students in their own evaluation and developing alternative evaluating methods according to students' different learning styles. Qualitative evaluation is another approach that provides an in-depth understanding of a

programme or process and allows for exploration of nuances (Altun, & Yucel-Toy., 2015; Jemberie, & Awan., 2021; Shah, 2019).

Qualitative evaluation involves collecting data through methods such as interviews, focus groups, and observations, and analyzing the data to identify themes and patterns. The utilization-focused evaluation model is another approach that emphasizes the use of evaluation findings to improve the programme and its outcomes. The utilization-focused evaluation model involves stakeholders in the evaluation process and focuses on the needs and interests of the stakeholders. The research in curriculum implementation and evaluation of teacher training programmes involves the use of various evaluation models and approaches to assess the effectiveness of educational programmes, and the selection of the appropriate approach depends on the specific needs and context of the programme being evaluated (Altun, & Yucel-Toy., 2015; Jemberie, & Awan., 2021; Shah, 2019).

2.19.1 Educational Programme Evaluation around the world

Research in curriculum implementation and evaluation of teacher training programmes can focus on various aspects of the curriculum design process. The research can explore the importance of teacher involvement in curriculum development and the challenges that teachers face in curriculum development. The research can also focus on the most effective curriculum evaluation models and the criteria that should be used to develop a curriculum evaluation model (Altun, & Yucel-Toy., 2015; Jemberie, & Awan., 2021; Shah, 2019).

Another area of research could be the barriers to effective curriculum implementation and the strategies that can be used to address these barriers. Research can also analyze the effects of teacher collaboration in curriculum design teams on teacher

development and collaborative curriculum development. The research can also explore the scope of curriculum studies and the processes involved in the curriculum development process, including planning, development, implementation, and evaluation. Research in curriculum implementation and evaluation of teacher training programmes can contribute to the development of effective curriculum design and evaluation practices and can inform policy and practice in the field of education (Altun, & Yucel-Toy., 2015; Jemberie, & Awan., 2021; Shah, 2019).

There are research studies on teacher training programme evaluation that can be found in academic databases. Some of these theses focus on the evaluation of specific teacher training programmes, while others focus on the development of evaluation frameworks and methodologies for teacher training programmes. For example, one study examined the effectiveness of a teacher training programme in promoting teacher evaluation practices that support student learning and achievement. Another study focused on the evaluation of a specific in-service teacher training programme using the Kirkpatrick model of evaluation, which includes four levels of evaluation: reaction, learning, behavior, and results. Focused on the development of evaluation frameworks and methodologies for teacher training programmes, such as the use of meta-evaluation research to evaluate the effectiveness of teacher training programmes. The evaluation of teacher training programmes is an important area of research that can inform policy and practice in the field of education. Research in this area can contribute to the development of effective teacher training programmes and can help ensure that teacher candidates are well-prepared to meet the needs of their students (Altun, & Yucel-Toy., 2015; Jemberie, & Awan., 2021; Shah, 2019).

Based on the search results, there are several recent research on teacher training programme evaluation. A study focused on the use of meta-evaluation research to evaluate the effectiveness of teacher training programmes, specifically in Turkey, between 2010 and 2020. Another study examined the connection between teacher evaluation and teacher development, with a focus on the history of teacher evaluation in the United States and recent teacher evaluation reform incentivized by federal funding. Evaluation of student-centered practices used in classrooms in teacher training programmes in the United States. Focused on the evaluation of an in-service teacher training programme using the Kirkpatrick model of evaluation, which includes four levels of evaluation: reaction, learning, behavior, and results (Altun, & Yucel-Toy., 2015; Jemberie, & Awan., 2021; Shah, 2019).

Recent developments in teacher evaluation research have been focused on evidence-based practices to improve the effectiveness of teacher evaluation systems. One recent study found that teacher evaluation reforms implemented in some individual school districts and states have failed to improve student outcomes. Another recent study examined the effectiveness of a training programme for teacher evaluators and found little evidence that the programme improved perceived feedback quality, classroom instruction, teacher self-efficacy, or student outcomes. However, the study did find that the training programme improved the accuracy of teacher evaluations (Altun, & Yucel-Toy., 2015; Jemberie, & Awan., 2021; Shah, 2019).

Other recent developments in teacher evaluation research have focused on ways to make teacher evaluation systems more effective, such as using multiple measures of teacher effectiveness, providing ongoing feedback and support to teachers, and involving

teachers in the evaluation process. Recent research has also highlighted the importance of using evidence-based practices to ensure that teacher evaluation systems produce positive outcomes for teachers and students. Overall, recent developments in teacher evaluation research have emphasized the need for effective and evidence-based teacher evaluation systems that support teacher development and improve student outcomes (Altun, & Yucel-Toy., 2015; Jemberie, & Awan., 2021; Shah, 2019).

Recent findings on the effectiveness of teacher evaluation reforms have been mixed. Some studies have found that teacher evaluation reforms have had little to no positive effect on student outcomes. For example, a recent study published in December 2021 concluded that teacher evaluation reforms across the country have largely failed to raise student academic performance, despite billions of dollars spent on reforming teacher evaluation systems (Altun, & Yucel-Toy., 2015; Jemberie, & Awan., 2021; Shah, 2019).

However, other studies have found that teacher evaluation reforms have had some positive effects on teacher quality and student outcomes. For example, a study found that state-level evaluation reforms raised the quality of new teachers but also had some negative effects on teacher retention. Another study found that linking teacher evaluations to student performance had worked in some cases, but not in others. Overall, recent findings on the effectiveness of teacher evaluation reforms suggest that the impact of these reforms varies depending on the specific context and implementation of the reforms. While some reforms have had positive effects on teacher quality and student outcomes, others have had little to no effect. Further research is needed to identify the most effective approaches to teacher evaluation reform and to ensure that these reforms are aligned with the needs of teachers and students (Altun, & Yucel-Toy., 2015; Jemberie, & Awan., 2021; Shah, 2019).

Finally, a recent report from the American Psychological Association discussed the evaluation of teacher preparation programmes using various methodologies, including observations of teaching and surveys. These recent studies and reports highlight the importance of evaluating teacher training programmes to ensure that teacher candidates are well-prepared to meet the needs of their students (Altun, & Yucel-Toy., 2015; Jemberie, & Awan., 2021; Shah, 2019).

2.19.2 Research on Single National Curriculum (SNC)

Since its adoption from the academic session 2021-22, some research has already surfaced regarding different aspects of Single National Curriculum (SNC). Irfan (2021) conducted a content analysis of Single National Curriculum draft document in a qualitative study setting and suggested that situational analysis should be done for successful implementation of SNC. Janahzaib, et al. (2021) studied Single National Curriculum in perspective of visually impaired children and concluded that standards, benchmarks and SLOs determined in Single National Curriculum are difficult to accomplish for visually impaired children. Rauf, et al. (2022) found the perceptions about English as second language on Single National Curriculum. They proposed pre-service training and in-service workshops for English language teachers for their professional development and revamping of assessment system. Tayyab, et al, (2022) conducted a discourse analysis of Single National Curriculum textbooks in terms of religious and gender identity discourse and concluded the Single National Curriculum textbooks have fifty percent discourse in related to these themes. Zaman, et al. (2021) using survey and interview techniques to collect data from a small sample of teachers. This study concluded that implementation of

Single National Curriculum would help in uniting our nation, alleviation of poverty in short term, reduction of educational inequity.

However, according to teachers' perception, there could be many barriers in its implementation. They suggested to allocate more resources for implementation of Single National Curriculum. Keeping in view the time span since inclusion of Single National Curriculum in schools, the research done in this regard gives a brief insight into various aspects of Single National Curriculum. However, most of this research is qualitative and documentary in nature. There is no comprehensive research work done yet to evaluate implementation of Single National Curriculum (Nevenglosky, et al., 2019).

2.20 Summary of the Chapter

The recent findings on teacher training programme evaluation have important implications for policy and practice in the field of education. The findings suggest that teacher training programme evaluation have had mixed results in terms of improving student outcomes, with some programmes having little to no effect on student achievement and others having some positive effects on teacher quality and student outcomes. These findings suggest that more research is needed to identify the most effective approaches to training programme evaluation and to ensure that these reforms are aligned with the needs of teachers and students. The recent findings also highlight the importance of using evidence-based practices to ensure that teacher training programme evaluation systems produce positive outcomes for teachers and students.

Similarly, teachers' newly learnt skills and pedagogies does not reflect in practice due to administrative and professional factors and factors related to evaluation system. Policymakers and researchers may consider the implications of these findings when

designing and devising programme evaluation studies of teacher training in context of curriculum implementation. They should seek to ensure that these studies are effective, equitable, and aligned with the goals of improving teacher quality and student outcomes.

CHAPTER 3

RESEARCH DESIGN & METHODOLOGY

3.1 RESEARCH DESIGN

This chapter describes the quantitative and qualitative research methods that were used to reach answers of a set of research questions concerning the evaluation of online teacher training programme for implementation of Single National Curriculum, 2021.

The researcher was interested in exploring effectiveness of this training programme on development of pedagogical skills and how knowledge of participating teachers was updated, and how well they were practicing these skills and knowledge in their English class while teaching to the students of grade V, especially, in the light of Competencies, Benchmarks and Standards, set in Single National Curriculum Committee guidelines.

To comprehensively explore the subject of this study, a concurrent parallel design, a sophisticated mixed-methods approach within descriptive research, was employed. This methodological choice aligns with what symbolically represented as "qualitative plus quantitative" research, highlighting the simultaneous utilization of both paradigms (Bryman, 2006). The concurrent parallel design, as elucidated by Creswell and Clark (2011), involves the simultaneous collection and analysis of quantitative and qualitative data within the same research phase, with equal priority given to both methodologies.

In this research design, the quantitative and qualitative components are executed concurrently, allowing for a comprehensive and multifaceted exploration of the research topic (Johnson & Onwuegbuzie, 2004). The data collected through these parallel streams are initially analyzed independently, preserving the integrity of each methodological

approach. However, the true power of this design lies in the subsequent integration of findings during the interpretation phase, a process known as triangulation (Creswell and Clark, 2011).

Triangulation, in this context, serves to enhance the validity and reliability of the research findings by cross-verifying data from multiple sources (Bryman, 2006). This approach not only provides a more holistic understanding of the research subject but also mitigates potential biases inherent in single-method studies. By employing this rigorous methodological framework, the study aims to generate a rich, nuanced, and well-rounded perception of the research topic, leveraging the strengths of both quantitative and qualitative research paradigms (Creswell and Clark (2011)).

3.2 Framework of Research

To achieve the objectives of this study, following operational framework was devised to develop and use data collecting tools and collection of data from sample of the study.

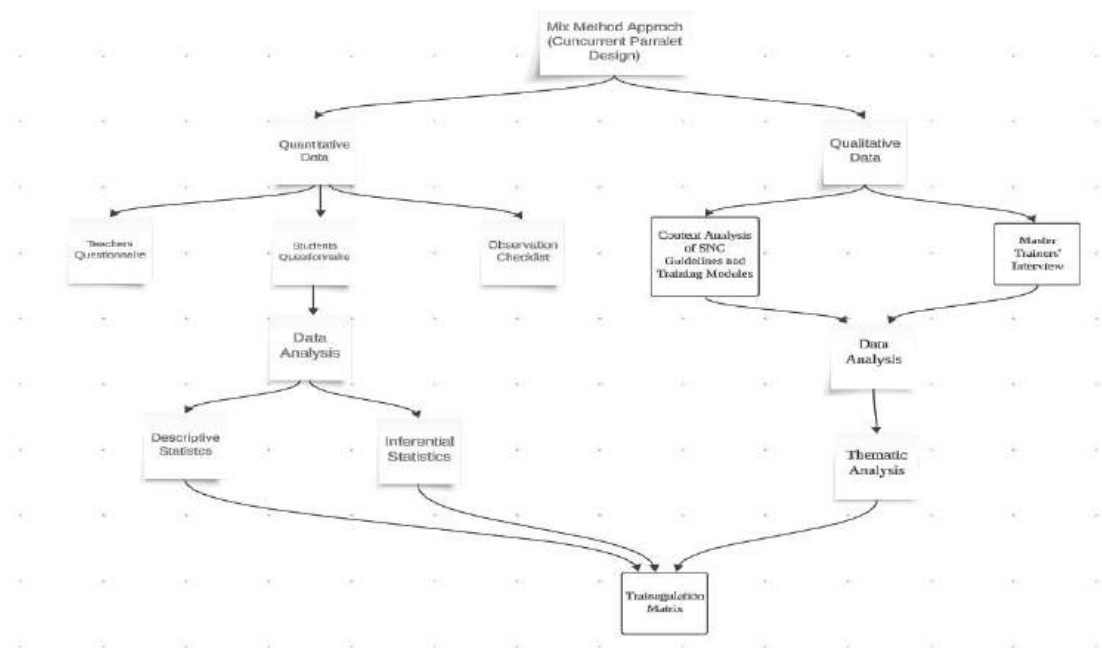


Figure 3.1: Framework of Research

3.3 RESEARCH METHODOLOGY

As shown in the figure above, in addition to data from content analysis of Single National Curriculum (SNC) guidelines from National Curriculum Committee (NCC) and Training Module, three data sets were obtained from content analysis of training modules of 1-day Online Training of Primary School Teachers of English on Single National Curriculum, 2021, related to teaching of English, quantitative data from Survey questionnaire for English Teachers & Students of class V and Classroom Observation Checklist, and qualitative data from interview of Master Trainers, using a concurrent parallel research design.

3.3.1 Programme Evaluation Model

The CIPP (Context, Input, Process and Product) model of programme evaluation was adopted to evaluate effectiveness of the 1-days Online Teachers Training of Single National Curriculum as outlined in the Table No. 3.1. Devised by Stufflebeam in 1960, CIPP model is a decision-oriented model that involves systematic data collection about a programme to recognize its strengths and weaknesses so that it can be improved in future (Zhang, et. al. 2011).

Table 3.1: *CIPP Model of Programme Evaluation*

Component of CIPP Model	Content/Subjects	Research Tool/Technique
Context	Single National Curriculum Documents Training Manual of QAED Training Module	Content Analysis for alignment between SNC Guidelines and Training Module
Input	Training of Master Trainers Teacher Training	Questionnaire for Primary School Teachers Interview of master Trainers

Process	Practicing of Classroom Pedagogies in accordance with Single National Curriculum and Training of Teachers	Class room observation Checklist
Product	Students Learning	Questionnaire for Students

3.3.2 Context Evaluation

Context evaluation lets the researcher assess the needs in a predefined context or environment (Stufflebeam & Shinkfield, 2007). The main objective of context evaluation is to identify the needs and problems of the target subjects to assess if the goals are related to the desired needs or not (Stufflebeam, et al. 2007; Warju, 2016). For this purpose, surveys, document reviews, data analysis and interviews can be used (Stufflebeam, 2003). Context of this study was background of Online Training of Teachers of English. The political and constitutional scenario along with policy guidelines provided in SNC, 2021 documents were considered as the context of this training programme. Alignment of training module with SNC guidelines were also sought to compare the contextual background.

3.3.3 Input Evaluation

Aim of input evaluation is to collect data to determine what resources, including time, human and physical resources, content, and curriculum are used to achieve the desired goals of a particular programme (Warju, 2016) to implement the programme. Input related to this study was evaluated through Teachers' Questionnaire Survey and corresponding in depth interview of the Master Trainers.

3.3.4 Process Evaluation

Focus of process evaluation phase is to assess how programme and teaching learning processes is working through implementation by using inputs effectively to achieve the desired outcomes, for better understanding (Zhang, et. al. 2011). Classroom observation checklist was used to evaluate process of implementation of single national curriculum through practicing the newly learned knowledge, pedagogies and assessment techniques.

3.3.5 Product Evaluation

The phase of product evaluation is used to assess students' learning outcomes encompassing not only students' academic achievement but also skills, learning and abilities they got which they might practice in real life (Zhang, et. al. 2011). For this purpose, a students' questionnaire was used to find out opinion of students about their learning of English.

In view of these four levels of programme evaluation, following frame of operation was adopted using CIPP model for this research study.

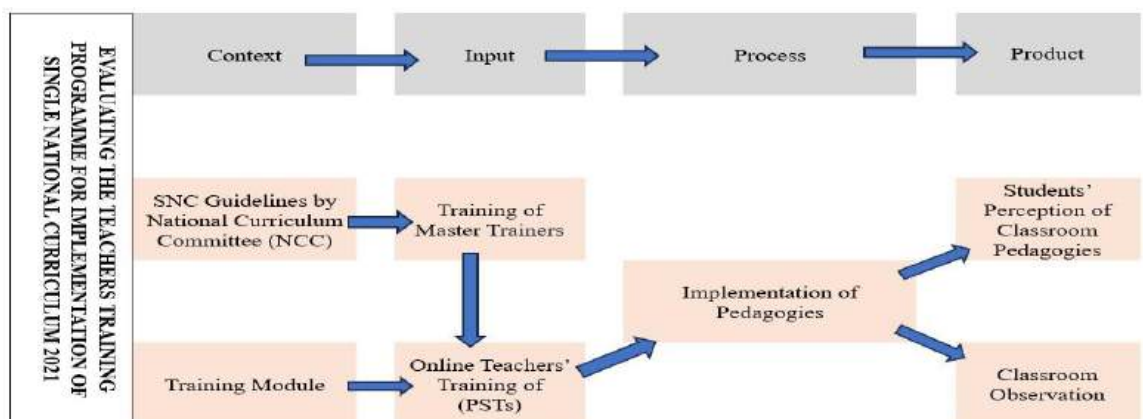


Figure 3.2: Framework of CIPP Model

3.4 POPULATION

- I- All the Elementary School Educators/Primary School Teachers teaching at the Primary level in Public and Private schools in Punjab were considered as population of the study.
- II- All Master Trainers were included in population of the study.
- III- All the students enrolled at primary level in Punjab were included as population of this study.

Detail of Population is presented in the Table No. 3.2 below;

Table 3.2: *Population*

Title	Population		
	Public	Private	<i>N</i>
Primary School Teachers/ ESEs (Science/Math/Arts)	201,005	102,661	303,666
Master Trainers	-	-	2,523
Students enrolled at primary level	-	-	6,656,404

Source: SNC Training Operation Manual 4.0

School information system at <https://sis.punjab.gov.pk/dashboard>

3.5 SAMPLING

3.5.1 Sampling Frame

Amongst the Primary School Teachers, the Primary School Teachers teaching English at the Primary Level in public schools who got the certificate of completion of training were considered as the population frame of the study. All the students of Grade-V were also included in the sample frame of this study. Moreover, all the Master Trainers of English were included in the sample frame as detailed below in table No. 3.3.

Table 3.3: *Sampling Frame*

Title	Participants (PSTs Art)			Certified (PSTs Art)		
	Male	Female	<i>N</i>	Male	Female	<i>N</i>
Primary School Teachers/ ESEs (Arts)	20,532	26,132	46,664	13,551	17,247	30,798
Master Trainers (English)	-	-	419	-	-	-
Grade-V Students	543,384	565,891	1,109,414	-	-	-

Source: SNC Training Operation Manual 4.0

School information system at <https://sis.punjab.gov.pk/dashboard>

3.5.2 Sample

Due to significant time constraint and spread of research population throughout the province of Punjab, a combination of both probability and non-probability sampling techniques, as stratified convenience sampling was used to select the sample for this study. While it is not as robust as pure probability sampling methods, it can be a valid approach in certain research contexts, particularly when faced with practical constraints. When stratified and convenience sampling are combined, stratified convenience sampling attempts to balance the benefits of stratification with the practicality of convenience sampling. This method can be particularly useful in educational research where access to participants may be limited (Teddle & Yu, 2007). Despite its limitations, stratified convenience sampling can be a valid technique when: The research is exploratory in nature (Etikan et al., 2016), there are significant time or resource constraints (Jager et al., 2017), the population is heterogeneous and stratification can help ensure representation of key subgroups (Teddle & Yu, 2007).

According to Gay et al. (2012) any number of subjects can be selected if the population is more than 5000 in numbers. Therefore, 900 teachers from the strata of English teachers, teaching at Primary Level (PSTs) in public school who completed Online Training on Single National Curriculum, and ten (10) Master Trainers of English, were included as sample of the study, who could be easily accessible and conveniently available to respond to questionnaire for teachers and interview respectively. Along with the above subjects, 135 students of grade-V were also included in the sample using convenient sampling technique. Moreover, six (06) conveniently selected schools were also included as sample of the study for classroom observation. Detailed in Table No. 3.4 below

Table 3.4: *Sample*

Title	Population Frame	Sample
Primary School Teachers/ ESE (Arts)	307,98	900 (100 respondents from each Division of Punjab)
Master Trainers (English)	419	05
Grade-V Students	1,109,414	135 (15 respondents from each Division of Punjab)

Source: SNC Training Operation Manual 4.0

School information system at <https://sis.punjab.gov.pk/dashboard>

3.6 RESEARCH TOOLS

This section describes the research instruments used for data collection. These instruments included measures of the opinion of Primary School Teachers of English about their training of English on Single National Curriculum and opinion of students of class V about practices of their English language teachers in their English teaching class (**Appendix A & B**).

A classroom observation checklist was also used to determine practiced pedagogies by teachers in English lessons (**Annex-C**). Moreover, in depth interview with Master Trainers was also used to evaluate SNC training on Single national Curriculum (**Annex-D**).

3.6.1 Structure of Teachers’ questionnaire

The teachers’ questionnaire contained three sections and 68 items initially which were reduced to 56 items after piloting in which Primary School Teachers of English were asked about their opinion about online training on Single National Curriculum, (**Appendix-A**).

3.6.2 Pilot Study of Teachers’ Questionnaire

Ninety conveniently selected teachers (45 males, 45 females) were distributed with the first version of Teachers’ Questionnaire having total 68 questions for pilot study to determining its reliability. Ten (10) statements from the section B of the questionnaire were removed. Resultantly, the final version of the teacher’s questionnaire had 56 items.

3.6.3 Reliability of the Teachers’ Questionnaire

Split-half reliability of the Teacher’s Questionnaire using Spearman Brown’ formula was calculated which gave a quotient of .78 which shows a high reliability score.

Detail of initial and final version after expert opinion of the supervisor, piloting and calculation of reliability is presented in Table no. 3.5 below;

Table 3.5: *Structure of Teachers’ Questionnaire*

	Number of Items
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Section	Initial Draft	Final Draft
A: Professional Information	06	06
B: Opinion about Online Training on Single National Curriculum	59	48
C: Open Ended Questions	03	03
Total	68	57

3.6.4 Structure of Students' questionnaire

The Student Questionnaire contained 25 items initially, having three sections namely personal information, family background and opinion about teaching in English classroom. However, based on expert opinion, piloting and reliability, the final draft of students' questionnaire had two sections and a total of 20 items (**Appendix -B**).

3.6.5 Pilot Study of Students' Questionnaire

Twenty conveniently selected students of grade V (10 males, 10 females) were distributed with the first version of Teachers' Questionnaire having total 25 questions for pilot study of the tool and for determining Split-half reliability.

3.6.6 Reliability of the Students' Questionnaire

Split-half reliability of the Students' Questionnaire using Spearman Brown' formula was calculated which gave a quotient of .69 which shows a high reliability score.

Detail of initial and final version after expert opinion of the supervisor, piloting and calculation of reliability is presented in Table no. 3.6 below;

Table 3.6: *Structure of Students' Questionnaire*

Section	Number of Items	
	Initial Draft	Final Draft

A: Personal Information	01	01
B: Family Background	05	-
C: Opinion about Teaching in your English Language Class	19	19
Total	25	20

3.6.7 Observation Sheet

A researcher-made observation sheet was also used as data collection tool to collect data regarding pedagogies practiced by teachers of English in their English language lessons to class V (**Appendix -C**). This checklist was devised in view of the research questions and statements related to practicing newly learned pedagogies and assessment techniques that were already included in the Teachers' Questionnaire and Students' Questionnaire to ensure content and face validity.

3.6.8 Interview Protocols

Interviews were also conducted for triangulation purpose (**Appendix-D**). These interviews were conducted with Master Trainers. Following is the detail of the interview protocols: -

3.6.8.1 Selection of Interviewees

The interviewees were selected on the basis of their qualification and experience, who were conveniently available, willing and accessible. Thus, five (05) master trainers were selected for in depth interviews.

3.6.8.2 Objective of Interviews

Objective of the interview was to probe into and find out the opinion of expert Master Trainers about the Online Teacher Training Programme for implementation of Single National Curriculum, 2021.

3.6.8.3 Development of the Protocol

The interview protocol was developed through a systematic process. Initial questions were drafted to cover broad themes, and subsequent questions were designed to delve deeper into specific topics. Open-ended questions were prioritized to allow participants to elaborate on their experiences, while closed questions were used to gather specific information.

3.6.8.4 Structure of the Interview

The predesigned structure of the interview had the following question sequence in line with the research questions of this study;

- i) Introduction
 - a. Detail of qualification and training experience
- ii) Themes
 - a. Alignment of Training Modules with Single National Curriculum guidelines,
 - b. Training module components,
 - c. Adequacy of training model,
 - d. Sources and environment of the training programme,
 - e. Communication between the trainers and the trainees,
 - f. Strengths and weaknesses of the training programme,

- g. Future steps for making the training programme better,
- iii) Additional Commentary

Thus, the interview had four sections as follows;

- I- Introduction (questions related to qualification and teaching, training experience)
- II- Opinion about training modules and training model (questions related to content of training modules in connection with Single National Curriculum guidelines, mode of online training)
- III- Opinion about the training process (facilities, duration, interaction with trainees, effectiveness)
- IV- Opinion about the successfulness of training and future action (how successful was training and how could it be made more successful).

3.6.8.5.1 Pilot Testing

The protocol was piloted with three participants, and feedback was used to refine the questions for clarity and relevance. Adjustments were made to ensure the questions were easily understood and effectively elicited the desired information.

3.6.8.6 Duration of Interview

Each interview was of 20-30 minutes of duration

3.6.8.7 Documentation of the Interviews

The interviews were conducted via phone calls and recorded by using Android App ‘Automatic Call Recorder’. Notes were also taken when required for ease in analysis.

3.6.8.8 Analysis of Interviews

The recorded interviews were transcribed non-verbatim and analysed using thematic analysis. Coding was conducted manually to identify key themes and patterns in the data.

3.7 DATA ANALYSIS

Descriptive and inferential statistical methods and tests including percentages, mean scores, Chi Square, were used with the help of statistical software SPSS V. 26 to determine results and findings from the collected data. Mean scores and percentages were calculated for analysis of Teachers' Questionnaire and Students' Questionnaire. Interview data were analyzed based on themes of the interviews while textual content analysis was completed by matching content of the guidelines contained in National Curriculum Committee with the content of teachers training material and modules. Triangulation matrix was used to validate results of quantitative data with qualitative data.

3.8 ETHICS OF THE STUDY

This study involved human subjects and students of grade V as the participants. Research ethics were practiced in terms of informed consent from the concerned heads of schools before collecting data from the students and before conducting classroom observation in the form of their signatures on prescribed letters and forms (**Appendix -E**). The informed

consent was also ensured before conducting interviews with the master trainers. (**Appendix**

-F). Procedural framework of the study is presented in the diagram no.

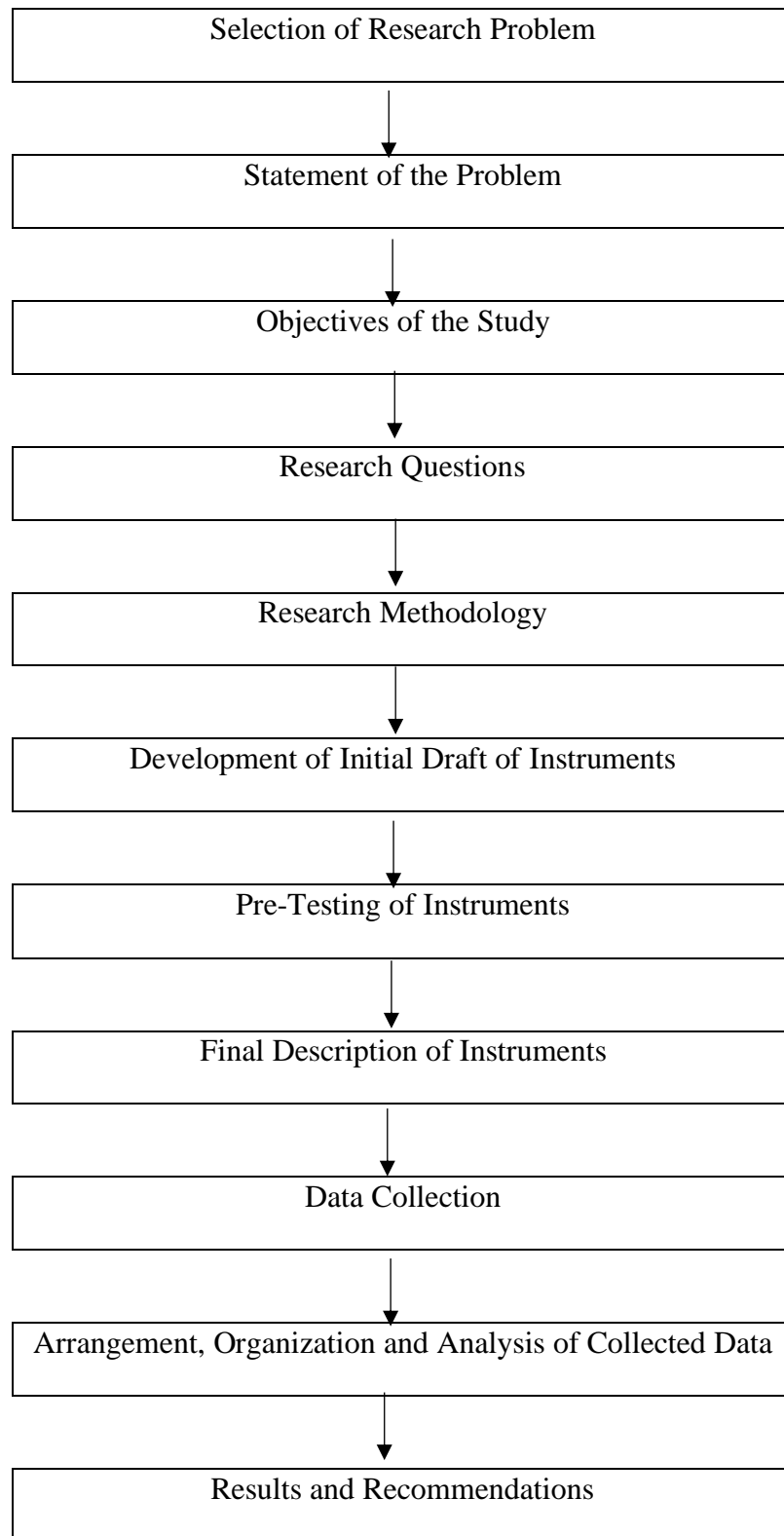


Figure 3:3 *Procedural Framework of the study*

CHAPTER 4

DATA ANALYSIS AND INTERPRETATION

This chapter presents the analysis of data collected to investigate the following research questions:

- 1- To what extent does the content of English Language teacher training modules align with the guidelines provided in the Single National Curriculum (SNC) document?
- 2- How proficient are English language teachers in their knowledge and skills related to the competencies, standards, and benchmarks outlined in the SNC?
- 3- What is the effect of SNC-based training on English language teachers' development of critical awareness, self-direction, reflectiveness, analytical skills, and adaptability?
- 4- How do English language teachers' perceptions of new pedagogies and assessment techniques compare with their actual implementation following training?
- 5- To what degree are English language teachers incorporating newly learned teaching methodologies from their training into their classroom practice?
- 6- How do Grade-V students perceive their teachers' implementation of new pedagogies and instructional strategies in English language classrooms?

7- What are the perspectives of Master Trainers regarding the effectiveness and outcomes of the English language teacher training program?

This chapter has been divided into four parts to analyze and present data related to these research questions and other related queries. The core research issue of the study was to evaluate successfulness of online teachers training programme for implementation of Single National Curriculum (SNC) by using Stufflebeam (2007) CIPP (Context, Input, Process, Product) model. Therefore, segregation of these sections corresponds to CIPP Model and Research Questions of this study. Section 4.1 presents data analysis regarding content analysis of Online Teacher Training Modules in the context of Single National Curriculum guidelines.

4.1 Context Evaluation

4.1.1 Thematic Content Analysis of Training Modules in Line with SNC Guidelines

Table 4.1: *Alignment of Content of Training Module with SNC Document regarding Competencies*

Content Statement / Theme			
SNC Document	Page Reference	Training Module	Training Module Reference
Oral Communication Skills (Listening and Speaking)	Page. 14	Oral Communication Skills	Slide 14, 35, 36, 37, 38, 39.
Reading and Critical Thinking Skills	Page. 14	Reading and Critical Thinking Skills	Slide 95.
Formal and Lexical Aspects of Language	Page. 14	–	–
Writing Skills	Page. 14	Writing Skills	Slide 14, 37, 59, 67, 68, 74, 84, 85, 88, 121.
Appropriate Ethical and Social Development	Page. 14	–	–

Codes: C1, C2, C3, C4, C5.

The table 4.1 shows a comparison between the content areas mentioned in the Single National Curriculum (SNC) document and their coverage in the training module. It is evident that competencies related to Oral Communication Skills (Listening and Speaking) have been mentioned on the page No. 14 of Single National Curriculum document while this competency was part of training module being mentioned on slides No. 14, 35, 36, 37, 38, 39. Similarly, competency on Writing Skill was mentioned on the page No. 14 of Single National Curriculum document also and the same competency was included in slide No. 14, 37, 59, 67, 68, 74, 84, 85, 88, 121 of the training module. On the other hand, Reading and Critical Thinking Skills was included in the Single National Curriculum document on page No. 14 but there was only one presentation slide (No. 95) mentioning this competency in the training module. In contrast, competencies regarding Formal and Lexical Aspects of Language and Appropriate Ethical and Social Development were mentioned on the page No. 14 of Single National Curriculum document but both these competencies were not included in any presentation slide of the training module. It can be concluded that there were 10 presentation slides on Writing Skills, six (06) presentation slides about Oral Communication Skills, and one (01) slide on Reading and Critical Thinking Skills while there were no presentation slides mentioning competencies related to Lexical Aspects of Language and Appropriate Ethical and Social Development, although all these competencies were included in the guidelines of Single National Curriculum.

It can be inferred that Oral Communication Skills and Writing Skills are well-represented in the training module, with multiple slide references, while Reading and Critical Thinking Skills are mentioned in both documents but have limited coverage in the

training module (only one slide reference). On the other hand, formal and Lexical Aspects of Language and Appropriate Ethical and Social Development, while present in the SNC document, are not explicitly covered in the training module based on the information provided. This shows that the training module appears to place a strong emphasis on Writing Skills, with references across numerous slides, while there seems to be a lack of explicit coverage for Formal and Lexical Aspects of Language and Appropriate Ethical and Social Development in the training module.

Table 4.2: *Alignment of Content of Training Module with SNC Document regarding Benchmarks*

Content Statement / Theme			
SNC Document	Page Reference	Training Module	Training Module Reference
Recognize and articulate sound patterns and stress in words, and basic intonation patterns in statements and questions as they occur in classroom text.	Page. 16	Intonation	Slide 38
Use linguistic expressions to communicate appropriately for functions and co-functions of opinions, apologies, requests and instructions in class and school environment.	Page. 16	–	–
Demonstrate through role plays, discussion, conversation, the social and academic conventions, and dynamics to communicate information and ideas.	Page. 16	–	–
Identify and articulate digraphs, tri-graphs, silent letters, and inflection in words. Comprehend words, sentences, and paragraphs	Page. 17	Digraphs	Slide 45, 51

Content Statement / Theme			
SNC Document	Page Reference	Training Module	Training Module Reference
as meaningful units of expressions.			
Comprehend information form and visual cue or graphic organizer to describe positions, directions, events, sequences and to show comparison and contrast.	Page. 17	Graphic organizer	Slide 67, 80,
Interpret factual information, new processes and procedures, personal, school, and public related information, applying reading comprehension and thinking strategies.	Page. 17		
Gather and use information for a variety of purposes using various aids and study skills.	Page. 17		
Describe basic elements of stories and simple poems. Express personal preferences giving reasons.	Page. 17	Stories	Slide 99
Recognize grammatical structures of selected parts of speech, limited concepts of time, tense and aspect and use them for spoken and written purposes.	Page. 18	Grammatical structures	Slide 113,
Recognize and use of punctuation including the use of hyphen, comma, and colon to read and write lists and simple graphs.	Page. 18	–	–
Recognize and use different types of sentence structures and appropriates sentence types to write meaningful paragraphs.	Page. 18	–	–

CODES: BM1, BM2, BM3, BM4.

Table 4.2 compares benchmarks from the Single National Curriculum (SNC) document with their coverage in the training module. The table indicates alignment of

content between Single National Curriculum guidelines and online teacher training module regarding benchmarks set in Single National Curriculum. Out of eleven benchmarks set for all the four English language skills for class V students, training modules included five benchmarks stating ‘Recognize and articulate sound patterns and stress in words, and basic intonation patterns in statements and questions as they occur in classroom text’, ‘Identify and articulate digraphs, tri-graphs, silent letters and inflection in words. Comprehend words, sentences and paragraphs as meaningful units of expressions’, ‘Describe basic elements of stories and simple poems. Express personal preferences giving reasons’, and ‘Recognize grammatical structures of selected parts of speech, limited concepts of time, tense and aspect and use them for spoken and written purposes’ on the presentation slides of the training modules No. 38, 45 & 51, 67 & 80, 99 and 113 respectively. By contrast, benchmarks indicated by the statements as ‘Use linguistic expressions to communicate appropriately for functions and co-functions of opinions, apologies, requests and instructions in class and school environment’, ‘Demonstrate through role plays, discussion, conversation, the social and academic conventions and dynamics to communicate information and ideas’, ‘Interpret factual information, new processes and procedures, personal, school and public related information, applying reading comprehension and thinking strategies’, ‘Gather and use information for a variety of purposes using various aids and study skills’, ‘Recognize and use of punctuation including the use of hyphen, comma and colon to read and write lists and simple graphs’, and ‘Recognize and use different types of sentence structures and appropriate sentence types to write meaningful paragraphs’ were not included in any slide of the training module.

It is evident that 5 out of 11 benchmarks (45%) from the SNC document are addressed in the training module which indicates that 6 out of 11 benchmarks (55%) from

the SNC document appear to have no direct reference in the training module. Evidently, most benchmarks that are covered in the training module have only one or two slide references, suggesting potentially limited depth and the benchmark related to graphic organizers has the most references (two slides). Therefore, the training module seems to focus more on specific language elements (intonation, digraphs) and tools (graphic organizers) rather than broader skills or applications.

Table 4.3: *Alignment of Content of Training Module with SNC Document regarding Standards*

Content Statement / Theme			
SNC Document	Page Reference	Training Module	Training Module Reference
Student understand and articulate widely acceptable pronunciation, stress, and intonation of English language for improved communication	Page. 14	Pronunciation, Stress, Intonation	Slide 17, 38, 40, 108, 140,
Students use appropriate social and academic conventions of spoken discourse for effective oral communication with individuals and in groups, in both informal and formal settings	Page. 14	–	–
Students discover, understand, and engage with a variety of text types through tasks which require multiple reading and thinking strategies for comprehension, fluency, and enjoyment.	Page. 15	–	–
Students read and analyze literary text to seek information, ideas, and enjoyment, and to relate their own experiences to	Page. 15	–	–

Content Statement / Theme			
SNC Document	Page Reference	Training Module	Training Module Reference
those of common humanity as depicted in literature.			
Students enhance their vocabulary for effective communication.	Page. 15	Vocabulary	Slide 7, 17, 23, 69, 84, 90, 94, 95, 104, 105, 106, 107, 108, 109, 112, 114, 115, 121, 122, 123, 140,
Students understand punctuation, syntax, grammatical functions, rules, and application for developing accuracy in their spoken and written communication.	Page. 15	–	–
Students produce academic, transactional, and creative writing that is fluent, accurate, focused, and purposeful and shows an insight into the writing process.	Page. 16	creative writing, writing skill	Slide 67, 74, 76, 77, 78, 79, 81, 83, 86, 87, 88
Students develop ethical and social attributes and values relevant to a multicultural and civilized society.	Page. 16	Ethical and Social Values	Slide 14

CODES: S1, S2.

Table No. 4.3 shows the comparison of standards set by Single National Curriculum guidelines and their inclusion in the training modules. The standard stating that Students enhance their vocabulary for effective communication mentioned on Page. 15 Single National Curriculum guidelines is dealt in Slide 7, 17, 23, 69, 84, 90, 94, 95, 104, 105, 106, 107, 108, 109, 112, 114, 115, 121, 122, 123, 140 of the training modules. Similarly, standard stated as ‘Students produce academic, transactional and creative writing that is fluent, accurate, focused and purposeful and shows an insight into the writing process’ was mentioned on Slide 67, 74, 76, 77, 78, 79, 81, 83, 86, 87, 88 and the standard stating

‘Student understand and articulate widely acceptable pronunciation, stress, and intonation of English language for improved communication’ was included in Slide 17, 38, 40, 108, 140 of the training modules. Moreover, the standard ‘Students develop ethical and social attributes and values relevant to a multicultural and civilized society’ was included in slide No. 14 of the training module. On the other hand, the standards mentioned in the Single National Curriculum guidelines, stating ‘Students use appropriate social and academic conventions of spoken discourse for effective oral communication with individuals and in groups, in both informal and formal settings’, ‘Students discover, understand and engage with a variety of text types through tasks which require multiple reading and thinking strategies for comprehension, fluency and enjoyment, Students read and analyze literary text to seek information, ideas and enjoyment, and to relate their own experiences to those of common humanity as depicted in literature’, and ‘Students understand punctuation, syntax, grammatical functions, rules and application for developing accuracy in their spoken and written communication’ were not mentioned in any presentation slide of the training module. It is evident that English language learning standard related to vocabulary was included in 21 slides of the training module, writing skill included in 11 presentation slides and pronunciation in five (05) presentation slides. On the other hand, there were no presentation slides in the training module related to English language learning standards of spoken English, reading and grammar.

As depicted in this table, there is clear alignment between the SNC document and the training module for two content areas: pronunciation/stress/intonation and vocabulary enhancement while some alignment is seen in creative writing and writing skills, however, there appears to be alignment on ethical and social attributes, though with less coverage in the training module. It can be found that several key content areas from the SNC document

are not referenced in the training module, including Social and academic conventions of spoken discourse, Engagement with various text types, Reading and analyzing literary texts, and Understanding punctuation, syntax, and grammatical functions. It is also found that Vocabulary enhancement receives the most extensive coverage in the training module, with references across many slides. Similarly, Pronunciation, stress, and intonation are covered across multiple slides, indicating significant attention to this area, while Writing skills and creative writing are addressed in a series of consecutive slides, suggesting a focused section on this topic.

Table 4.4: *Triangulation Matrix of Context Evaluation*

Data Collection Method	Results			Validation
	Competencies	Benchmarks	Standards	
Content Alignment of SNC guidelines and Training Modules	60% of the content areas from the SNC document are covered in the training module. 40% of the content areas from the SNC document appear to be missing from the training module. Writing Skills have the highest number of slide references in the training module.	45% of the benchmarks from the SNC document are covered in the training module. 55% of the benchmarks from the SNC document appear to be missing from the training module. Benchmarks related to linguistic expressions, role plays, punctuation, and sentence structures are not addressed in the training module.	Partial alignment between the SNC document and the training module. Uneven coverage of SNC content areas in the training module. Some critical components of the SNC document are not addressed in the training module.	Convergence
Teachers' Questionnaire	Teachers generally have a positive view of the alignment between SNC and the training modules regarding competencies.	Majority of teachers agree that the alignment between SNC components and training was well elaborated in terms of benchmarks.	Majority of teachers agree that the alignment between SNC components and training was well elaborated in terms of standards.	Convergence

Table No. 4.4 presents a triangulation matrix for context evaluation by focusing on the alignment between English Language teacher training modules and the Single National Curriculum (SNC) guidelines. It shows that three data collection methods, Content Alignment, Teachers' Questionnaire, and Master Trainers' Interview were used to validate the results. The table depicts that 60% of the SNC content areas regarding competencies are covered in the training module, while 40% are missing while Only 45% of the SNC benchmarks are covered in the training module, with 55% missing, similarly, there is partial alignment between the SNC document and the training module, with uneven coverage of content areas. On the contrary, Writing Skills have the highest number of slide references in the training module. Moreover, some critical components of the SNC document are not addressed in the training module as specific benchmarks related to linguistic expressions, role plays, punctuation, and sentence structures are not addressed in the training module.

Furthermore, teachers generally have a positive view of the alignment between SNC and the training modules regarding competencies as majority of teachers agree that the alignment between SNC components and training was well elaborated in terms of benchmarks and standards. Views of the master trainers in this regard indicate convergence with the results of the content analysis while their views diverge from the teachers' opinion.

4.2 Input Evaluation

4.2.1 Data Analysis of Teachers' Questionnaires

Table 4.5: *Division-wise Percentage of PSTs with respect to Gender*

Division	Male	Female
Bahawalpur	59	41
D.G. Khan	54	46
Faisalabad	52	48
Gujranwala	53	47
Lahore	44	56
Multan	61	39
Rawalpindi	34	66
Sahiwal	49	51
Sargodha	58	42
Percentage	51.55	48.45

Table 4.5 shows that overall, there were 51.55 male and 48.48 female respondents of in the sample of this study. The division-wise distribution of the sample concerning gender was Bahawalpur (59% male, 41% female), D.G. Khan (54% male, 46% female), Faisalabad (52% male, 48% female), Gujranwala (53% male, 47% female), Lahore (44% male, 56% female), Multan (61% male, 39% female), Rawalpindi (34% male, 66% female), Sahiwal (49% male, 51% female), and Sargodha (58% male, 42% female).

Table 4.6: *Division-wise Percentage of PSTs with Respect to Age*

Division	26-32 Years	33-39 Years	40-46 Years	47-53 Years	54-60 Years
Bahawalpur	28	12	25	15	20
D.G. Khan	16	13	17	18	36

Faisalabad	21	23	11	25	20
Gujranwala	18	20	32	17	13
Lahore	17	23	28	24	8
Multan	20	29	26	14	11
Rawalpindi	23	20	25	14	18
Sahiwal	24	26	15	19	16
Sargodha	21	27	24	13	15
Percentage	20.9	21.4	22.6	17.7	17.4

Table 4.6 indicates that 22.6% (203) of the total respondents of teacher questionnaire were between 40 to 46 years of age, respondents having range of 33-39 years of age were 21.4% (193), 20.9% (188) of the respondents had the age range between 26-32 year, while 17.7% (159) had the age range of 47-53-year, age of 17.4% (157) respondents was between 54-60 years.

Table 4.7: *Division-wise Percentage of PSTs with respect to Experience*

Division	Less than 05 Years	06-10 Years	11-15 Years	16-20 Years	21-25 Years	More than 25 Years
Bahawalpur	20	31	14	7	13	15
D.G. Khan	15	17	20	15	19	14
Faisalabad	17	19	29	11	17	7
Gujranwala	27	20	12	17	11	13
Lahore	24	23	22	10	11	10
Multan	18	21	22	11	9	19
Rawalpindi	18	19	25	8	14	16
Sahiwal	19	21	15	20	13	12
Sargodha	23	12	14	13	17	21
Percentage	20.1	20.3	19.2	12.4	13.8	14.1

The table 4.7 indicates that 20.3% (183) of the respondents had six to ten years of teaching experience, 20.1% (181) of the respondents had less than five (05) years of teaching experience, 19.2% (173) of the respondents had eleven to 15 years of teaching experience, 14.1% (127) of the respondents had more than 25 years of teaching experience, 13.8% (124) of the respondents had 21 to 25 years of teaching experience while 12.4% (112) of the respondents had 16 to 20 years of teaching experience of teaching English to Primary classes.

Table 4.8: *Qualification of PSTs*

Qualification	No. of Respondents	Percentage
M. Phil. (Education)	77	8.56
M.Phil. (English)	22	2.44
M.Phil. (Urdu)	35	3.89
M.A., B.Ed.	113	12.56
MCS	27	3.00
M.Sc. (Bio.)	19	2.11
M.Sc. (Math)	34	3.78
M.A. (Education, History)	24	2.67
M.A. (Education, Pak. Studies)	26	2.89
M.A. (English), B.Ed.	290	32.22
M.A. (Urdu, Education)	30	3.33
M.A. (Education)	80	8.89
BS (Honors)	53	5.89
F.A.	70	7.78

The table 4.8 shows that 32.22% (290) percent of the respondents had M.A. (English) with B.Ed. qualification, 12.56% (113) of the respondents possess M.A., B.Ed. degrees, 8.89% (80) were M.A. (Education), 8.56% (77) had degree of M. Phil. (Education), 7.78% (70) were F.A. and 5.89% (53) had BS (Honors) degree. The table also shows that 3.89% (35), 3.78% (34), 3.33%, (30) 3% (27), 2.89% (26) &, 2.44% (22) and 2.11% (19) of the respondents had the qualification of M.Phil. (Urdu), M.Sc. (Math), M.A. (Urdu, Education), MCS, M.Phil. (English), M.Sc. (Bio.) respectively.

Table 4.9: *Trainings Attended by Teachers*

No. of Trainings Attended		Percentage	Longest Span of Training (in days)		Percentage
No. of Trainings	No. of Responses		No. of Days	No. of Responses	
1	234	26.00	3	290	32.22
2	241	26.78	5	162	18.00
4	28	3.11	6	119	13.22
3	243	27.00	7	87	9.67
5	51	5.67	14	54	6.00
6	35	3.89	15	51	5.67
7	34	3.78	30	103	11.44

Table 4.9 table depicts that 27% (243) of the respondents had teacher training three times, 26.78% (234) respondents took teacher training twice in their teaching career, 26% (234) had one training. On the other hand, 5.67% (51) and 3.89% (35) had attended five and six training programmes respectively while 3.78% (34) respondents attended seven training programmes in their teaching career in contrast to 3.11% (28) respondents who attended four training programmes.

This table also shows that 32.22% (290) of the respondents took a training of three (03) days, while 18% (162) had taken a five-day training. Similarly, 13.22% (119) respondents attended a maximum of six-day training and 11.44% (103) attended a 30-day training. In contrast, 9.67% (87), 6% (54) and 5.67% (51) respondents took training of seven (07), fourteen (14) and fifteen (15) respectively. 3,78% (34) of the respondents did not respond to these questions.

The presentation of demographic data from table No. 4.4 to table No. 4.8 is included in this chapter to because data are typically collected in surveys to describe the relevant characteristics of the participant sample, but are not always used as independent or dependent variables in the analysis (Margulieux, 2022). The primary purpose of collecting and presenting demographic data here is to describe which population the sample represents. So that the researcher may assess the generalizability of the findings. If the demographic data are not reported in the research results, it may be because they were not central to the research questions.

Table 4.10: *Opinion of Teachers about alignment of SNC with Training Modules*

	SDA (1)		D (2)		NDA (3)		A (4)		SA (5)		M
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	
This training was imparted in the light of the vision of 'One Nation One Curriculum'. The training modules had sufficient content for learning new pedagogies according to SNC.	4	6	6	10	22	11	619	64	249	10	4.2
	9	2	2	19	15	9	580	56	294	13	4.3

	<i>SDA</i>		<i>D</i>		<i>NDA</i>		<i>A</i>		<i>SA</i>		<i>M</i>
	<i>(1)</i>		<i>(2)</i>		<i>(3)</i>		<i>(4)</i>		<i>(5)</i>		
	<i>Freq.</i>	<i>%</i>	<i>Freq.</i>	<i>%</i>	<i>Freq.</i>	<i>%</i>	<i>Freq.</i>	<i>%</i>	<i>Freq.</i>	<i>%</i>	
Participants were introduced comprehensively to the nature and scope of SNC	7	2	8	8	13	15	569	60	303	15	4.3
The alignment of different components of SNC and training was elaborated to the participants	6	6	7	10	16	10	590	66	281	10	4.3
Some components of SNC are not fully included in the training	385	9	353	11	35	4	73	64	54	12	2.0
One module for all aspects of teaching English is not sufficient to cover all SNC guidelines	11	4	8	8	34	4	626	70	221	15	4.2
Training modules for teaching English to classes I-II and III-V should have been developed separately	7	8	3	25	11	6	453	50	426	12	4.4
Average	61	5	55	13	21	8	501	61	261	12	3.9

Table no. 4.10 shows that (M=4.4) on ‘Training modules for teaching English to classes I-II and III-V should have been developed separately shows nearly strong agreement with this statement. Similarly (M =4.3) on ‘The training modules had sufficient content for learning new pedagogies according to SNC’, ‘Participants were introduced comprehensively to the nature and scope of SNC’, ‘Participants were introduced comprehensively to the nature and scope of SNC’, and ‘The alignment of different components of SNC and training was elaborated to the participants’ a slightly strong agreement while (M =4.2) on ‘This training was imparted in the light of the vision of 'One Nation One Curriculum' and ‘One module for all aspects of teaching English is not sufficient to cover all SNC guidelines’ also indicates agreement from the participants on

these statements. However, (M= 2.0) on ‘Some components of SNC are not fully included in the training’ shows disagreement which implies that the participants believed almost all components of Single National Curriculum guidelines were included in their training. An overall (M= 3.9) on teachers’ opinion regarding alignment of SNC with Training Modules shows that they were almost agree with this aspect of their training.

In terms of response distribution, this table shows that the majority of responses fall in the "Agree" (A) and "Strongly Agree" (SA) categories for most statements and there's a notable exception for the statement "Some components of SNC are not fully included in the training," where responses are more evenly distributed across categories. Most statements have mean scores above 4.0, indicating general agreement, while the statement about components not being fully included has a lower mean of 2.0, suggesting disagreement. Similarly, the highest mean (4.4) is for the statement suggesting separate modules for classes I-II and III-V, while the lowest mean (2.0) is for the statement about SNC components not being fully included in the training.

Table 4.11: *Opinion of Teachers about Training of Knowledge and skills related to competencies, standards, and benchmarks.*

	SDA (1)		D (2)		NDA (3)		A (4)		SA (5)		M
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	
Trainees were taught how to teach Oral Communication skills	61	13	73	6	10	11	538	60	228	10	3.9
Teaching pronunciation, stress patterns, and intonation were included in the training	17	2	68	8	137	15	539	60	139	15	3.8
Training related to teaching using	137	15	365	41	87	10	261	29	50	6	2.7

	<i>SDA</i>		<i>D</i>		<i>NDA</i>		<i>A</i>		<i>SA</i>		<i>M</i>
	<i>(1)</i>		<i>(2)</i>		<i>(3)</i>		<i>(4)</i>		<i>(5)</i>		
	<i>Freq.</i>	<i>%</i>	<i>Freq.</i>	<i>%</i>	<i>Freq.</i>	<i>%</i>	<i>Freq.</i>	<i>%</i>	<i>Freq.</i>	<i>%</i>	
appropriate formal and informal communication in different social settings											
Teaching comprehension to students through different tasks to understand a variety of texts was part of the training.	15	9	13	11	35	4	573	64	264	12	4.2
Training related to teaching students how to analyze literary text to seek information was imparted.	219	8	447	33	20	13	129	37	85	10	2.3
Training modules included ways to teach enhancement in vocabulary.	17	19	7	39	86	10	422	25	368	8	4.2
Teaching grammatical and lexical aspects of the English language was part of the training.	15	2	18	21	43	11	521	58	303	8	4.2
The teaching of creative writing was imparted in training.	35	4	174	19	68	7	416	46	207	23	3.7
Training included ways to learn writing fluent, accurate, focused, and purposeful English.	187	10	113	11	86	10	376	54	138	15	3.2
Trainees were explained about benchmarks of learning English for grade-V according to SNC	53	11	68	8	51	6	506	56	222	19	3.9
Average	76	9	135	20	62	10	428	49	200	13	3.6

Table no. 4.11 represents the data of responses of teachers regarding their opinion about knowledge and skills related to competencies, standards, benchmarks, and SLOs. It indicates that the ‘Teaching comprehension to students through different tasks to

understand a variety of texts was part of the training', 'Training modules included ways to teach enhancement in vocabulary' and 'Teaching grammatical and lexical aspects of the English language was part of the training' was (M=4.2) which shows a strong agreement from the participants on these statements. Similarly, (M=3.9) on 'Trainees were taught how to teach Oral Communication skills' and 'Trainees were explained about benchmarks of learning English for grade-V according to SNC' shows that the participants were nearly agree to these statements, while (M =3.8) on 'Teaching pronunciation, stress patterns, and intonation were included in the training' and (M = 3.7) on 'The teaching of creative writing was imparted in training' also indicate that there is almost an agreement on these statements. However, the (M =3.2), and (M=2.7) on 'Training included ways to learn writing fluent, accurate, focused, and purposeful English' and 'Training related to teaching using appropriate formal and informal communication in different social settings' respectively shows that the participants were nearly undecided on these statements. In contrast, the 'Training related to teaching students how to analyze literary text to seek information was imparted' was (M=2.3) which indicates a slight disagreement from the participants with this statement. An overall (M =3.6) related to the teachers' opinion about training of skills related to competencies, standards, benchmarks, and SLOs indicates that the respondents were nearly agree in this regard.

This table indicates that a majority of responses fall in the "Agree" (A) and "Strongly Agree" (SA) categories, however, there's significant variation across different aspects of the training. The overall average mean score is 3.6, indicating a generally positive perception and individual statement means range from 2.3 to 4.2, showing considerable variation in teachers' opinions across different aspects of the training. Teaching comprehension, teaching vocabulary enhancement and teaching grammatical and

lexical aspects yielded the highest mean score (M=4.2) while training related to teaching students how to analyze literary text (M=2.3) gained the lowest mean score.

Table 4.12: *Opinion of Teachers about being Critically aware, self-directed, reflective, and analytical, and able to adapt to the Single National Curriculum 2021.*

	<i>SDA</i> (1)		<i>D</i> (2)		<i>NDA</i> (3)		<i>A</i> (4)		<i>SA</i> (5)		<i>M</i>
	<i>Freq.</i>	<i>%</i>	<i>Freq.</i>	<i>%</i>	<i>Freq.</i>	<i>%</i>	<i>Freq.</i>	<i>%</i>	<i>Freq.</i>	<i>%</i>	
Teachers were trained in teaching the concept of Education for Sustainable Development (ESDA).	87	10	102	11	86	10	487	54	138	15	3.5
Pedagogy related to global citizenship education was also a part of this training.	85	9	85	9	156	17	471	52	104	12	3.5
I have become able to teach oral communication skills (listening & speaking) after this training.	17	2	102	11	155	17	522	58	104	12	3.7
I can teach reading and critical thinking skills to English Language Students after this training.	51	6	86	10	85	10	590	66	87	10	3.6
I can teach formal and lexical aspects of language based on this training.	51	6	68	8	51	6	574	64	155	17	3.8
I have learned new pedagogies to teach writing skills in this training.	103	11	68	8	51	6	506	56	172	19	3.6

	<i>SDA</i>		<i>D</i>		<i>NDA</i>		<i>A</i>		<i>SA</i>		<i>M</i>
	<i>(1)</i>		<i>(2)</i>		<i>(3)</i>		<i>(4)</i>		<i>(5)</i>		
	<i>Freq.</i>	<i>%</i>	<i>Freq.</i>	<i>%</i>	<i>Freq.</i>	<i>%</i>	<i>Freq.</i>	<i>%</i>	<i>Freq.</i>	<i>%</i>	
I have gained competency for teaching aspects of appropriate ethical and social development to the students.	69	8	85	9	50	6	608	68	87	10	3.6
Average	66	7	85	9	91	10	537	60	121	14	3.6

Data of table no. 4.12 indicates that ($M = 3.8$) ‘I can teach formal and lexical aspects of language based on this training’ and ($M = 3.7$) on the statement ‘I have become able to teach oral communication skills (listening & speaking) after this training’ was obtained which shows an almost agreement from the participants with these statements. Similarly, ($M = 3.6$) on ‘I can teach reading and critical thinking skills to English Language Students after this training’, ‘I have learned new pedagogies to teach writing skills in this training’ and ‘I have gained competency for teaching aspects of appropriate ethical and social development to the students’ that the participants were nearly agree with these statements. However, the ($M = 3.5$) on ‘Teachers were trained in teaching the concept of Education for Sustainable Development (ESD)’ and ‘Pedagogy related to global citizenship education was also a part of this training’ indicates less agreement from the participants. An overall ($M = 3.6$) on opinion of teachers about being critically aware, self-directed, reflective, and analytical, and able to adapt to the Single National Curriculum 2021 shows a slight agreement from the participants.

The majority of responses fall in the "Agree" (A) category across all statements, with percentages ranging from 52% to 68%. "Strongly Agree" (SA) responses are consistently lower, ranging from 10% to 19%. The overall average mean score is 3.6,

indicating a generally positive perception. Individual statement means range from 3.5 to 3.8, showing relatively consistent opinions across different aspects of the training. Teaching formal and lexical aspects of language and teaching oral communication skills yielded highest mean score (M=3.7), while Education for Sustainable Development (ESDA) and global citizenship education gained the lowest mean score (both M=3.5).

Table 4.13: *Opinion of Teachers about General Aspects of Training*

	SDA (1)		D (2)		NDA (3)		A (4)		SA (5)		M
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	
All the components were designed to facilitate the full participation of the trainees.	5	4	9	7	17	2	681	76	188	11	4.2
Objectives of the training were clearly stated before the start of each module.	7	4	4	8	34	4	626	70	229	15	4.2
The duration allocated for training was appropriate.	287	8	485	25	11	6	53	50	64	12	2.0
The pace of the trainer during training sessions was appropriate.	69	8	54	17	35	4	552	62	190	10	3.8
Online training is better than face-to-face training.	238	15	465	41	86	10	60	29	51	6	2.1
It is easier to participate in training from home than to go to the training center.	85	9	53	11	35	4	573	64	154	12	3.7
It is easy to communicate with the trainer in online training.	270	8	296	33	120	13	128	37	86	10	2.4

	<i>SDA</i>		<i>D</i>		<i>NDA</i>		<i>A</i>		<i>SA</i>		<i>M</i>
	<i>(1)</i>		<i>(2)</i>		<i>(3)</i>		<i>(4)</i>		<i>(5)</i>		
	<i>Freq.</i>	<i>%</i>	<i>Freq.</i>	<i>%</i>	<i>Freq.</i>	<i>%</i>	<i>Freq.</i>	<i>%</i>	<i>Freq.</i>	<i>%</i>	
Online training provides a better interactive environment between the trainer and trainees than face-to-face training.	171	19	347	39	86	10	227	25	69	8	2.6
All the trainers were well-versed and competent according to the needs of online training.	17	2	89	21	103	11	519	58	172	8	3.8
I had all the required facilities like internet and laptop/mobile phone to easily participate in this training.	172	8	285	19	117	13	301	46	25	13	2.7
This training has succeeded in achieving its objectives.	69	8	102	15	104	12	482	54	143	12	3.6
Average	126	8	199	21	68	8	382	52	125	11	3.2

Table no. 4.13 depicts that score on ‘All the components were designed to facilitate the full participation of the trainees’ and ‘Objectives of the training were clearly stated before the start of each module’ was (M=4.2) which shows that the respondents were more than agree with these statements, while (M= 3.8) on ‘The pace of the trainer during training sessions was appropriate’ and ‘All the trainers were well-versed and competent according to the needs of online training’ shows that the respondents were almost agree with these statements. Similarly, (M= 3.7) and (M=3.6) on ‘It is easier to participate in training from home than to go to the training center’ and ‘This training has succeeded in achieving its objectives’ respectively shows near agreement from the participants. However, (M=2.7)

and (M=2.6) on 'I had all the required facilities like internet and laptop/mobile phone to easily participate in this training' 'Online training provides a better interactive environment between the trainer and trainees than face-to-face training' respectively shows that respondents were almost neither disagree or agree on this statement. On the other hand, (M=2.4), (M=2.1) and (M=2.0) on 'It is easy to communicate with the trainer in online training', 'Online training is better than face-to-face training' and 'The duration allocated for training was appropriate' respectively indicates a slight to complete disagreement from the participants on these statements. Due to this disagreement, the overall score of the respondents regarding their opinion about the general aspects of the training was (M=3.2).

This table indicates that here's significant variation in responses across different aspects of the training where some statements show strong agreement, while others have more mixed or negative responses. The overall average mean score is 3.2, indicating a slightly positive perception overall while individual statement means range from 2.0 to 4.2, showing considerable variation in teachers' opinions across different aspects of the training. Components designed to facilitate full participation and clear statement of objectives before each module got the highest mean scores (M=4.2), while appropriateness of training duration and preference for online training over face-to-face training had the lowest (M=2.0).

Table 4.14: *Opinion of Teachers about New Assessment Techniques*

	<i>SDA</i> (1)		<i>D</i> (2)		<i>NDA</i> (3)		<i>A</i> (4)		<i>SA</i> (5)		<i>M</i>
	<i>Freq.</i>	%	<i>Freq.</i>	%	<i>Freq.</i>	%	<i>Freq.</i>	%	<i>Freq.</i>	%	
Teachers were trained on how to develop and use Rubrics for assessing language skills.	51	6	86	10	101	11	574	64	87	10	3.6
Training in new Assessment Procedures was part of this Training.	17	2	119	13	119	13	541	60	104	12	3.7
Techniques to assess students' affective domain were included in the training.	51	6	68	8	102	11	506	56	173	19	3.8
I can prepare and use a marking scheme for assessing students' communication skills according to SNC guidelines.	17	2	103	11	68	8	625	69	87	10	3.7
I understand the use of the Progression Matrix for assessing students' language skills across grades I-V according to standards set in SNC.	51	6	86	10	35	4	655	73	72	8	3.7
I can use new assessment tools i.e., performance tasks, self-assessment, interpretive exercises to assess students' language competencies i.e., performance tasks, self-assessment, and interpretive exercises.	69	8	137	15	51	6	573	64	70	8	3.5

	<i>SDA</i>		<i>D</i>		<i>NDA</i>		<i>A</i>		<i>SA</i>		<i>M</i>
	<i>(1)</i>		<i>(2)</i>		<i>(3)</i>		<i>(4)</i>		<i>(5)</i>		
	<i>Freq.</i>	<i>%</i>	<i>Freq.</i>	<i>%</i>	<i>Freq.</i>	<i>%</i>	<i>Freq.</i>	<i>%</i>	<i>Freq.</i>	<i>%</i>	
Average	43	5	100	11	79	9	579	64	99	11	3.7

The teachers were also asked about their training and classroom practice of newly learnt assessment techniques. Table no 4.14 indicates the score on ‘Techniques to assess students’ affective domain were included in the training’ was ($M=3.8$) which shows that the respondents were almost agree with this statement, while score on ‘Training in new Assessment Procedures was part of this Training’, ‘I can prepare and use a marking scheme for assessing students’ communication skills according to SNC guidelines’ and ‘I understand the use of the Progression Matrix for assessing students’ language skills across grades I-V according to standards set in SNC’ was ($M=3.7$) which indicates a near agreement from the respondents on these statements. Almost similarly, ($M=3.6$) and ($M=3.5$) on ‘Teachers were trained on how to develop and use Rubrics for assessing language skills’ and ‘I can use new assessment tools i.e., performance tasks, self-assessment, interpretive exercises to assess students’ language competencies i.e., performance tasks, self-assessment, and interpretive exercises’ respectively also indicates a slight agreement with these statements from the respondents. An overall average of ($M=3.7$) regarding teachers’ opinion about the learning and using of new assessment techniques in the English language classroom indicates that the respondents were nearly agree with this aspect of their training.

It can be found that the majority of responses fall in the "Agree" (A) category across all statements, with percentages ranging from 56% to 73%. "Strongly Agree" (SA) responses are consistently lower, ranging from 8% to 19%. The overall average mean score is 3.7, indicating a generally positive perception while individual statement means range

from 3.5 to 3.8, showing relatively consistent opinions across different aspects of assessment training. Similarly, techniques to assess students' affective domain and new Assessment Procedures and understanding of Progression Matrix had the highest mean scores (M=3.7), while use of new assessment tools had the lowest mean score (M=3.5).

Table 4.15: *Opinion of Teachers about New Pedagogies*

	<i>SDA</i> (1)		<i>D</i> (2)		<i>NDA</i> (3)		<i>A</i> (4)		<i>SA</i> (5)		<i>M</i>
	<i>Freq.</i>	<i>%</i>	<i>Freq.</i>	<i>%</i>	<i>Freq.</i>	<i>%</i>	<i>Freq.</i>	<i>%</i>	<i>Freq.</i>	<i>%</i>	
Training included a component of skills for utilizing the textbooks.	17	2	68	8	137	15	539	60	139	15	3.8
Training related to editing and notebook checking was also included in training sessions.	121	13	52	6	103	11	538	60	86	10	3.5
Teachers were trained regarding the use of web-based resources for teaching English.	17	2	120	13	155	17	540	60	68	8	3.6
This training fulfills all my current pedagogical needs as a Teacher of English Language.	17	2	155	17	208	23	434	48	86	10	3.5
New Pedagogical Practices were added to this Training.	17	2	52	6	102	11	574	64	155	17	3.9
The focus of the training was to enhance pedagogies related to language skills like listening, speaking, reading, and writing.	85	9	86	10	51	6	521	58	157	17	3.6

	<i>SDA</i>		<i>D</i>		<i>NDA</i>		<i>A</i>		<i>SA</i>		<i>M</i>
	<i>(1)</i>		<i>(2)</i>		<i>(3)</i>		<i>(4)</i>		<i>(5)</i>		
	<i>Freq.</i>	<i>%</i>	<i>Freq.</i>	<i>%</i>	<i>Freq.</i>	<i>%</i>	<i>Freq.</i>	<i>%</i>	<i>Freq.</i>	<i>%</i>	
New teaching strategies like jigsaw reading and concept maps were part of the training modules.	51	6	85	9	68	8	559	62	137	15	3.7
Average	46	5	88	10	118	13	529	59	118	13	3.6

A part of the teachers' questionnaire was related to their opinion regarding learning of new pedagogies. Data in table no. 4.15 shows ($M=3.9$), ($M=3.8$) and ($M=3.7$) on 'New Pedagogical Practices were added to this Training', 'Training included a component of skills for utilizing the textbooks' and 'New teaching strategies like jigsaw reading and concept maps were part of the training modules' respectively which shows that the respondents were almost agree with these statements. Similarly, the score on 'Teachers were trained regarding the use of web-based resources for teaching English' and 'The focus of the training was to enhance pedagogies related to language skills like listening, speaking, reading, and writing' was ($M=3.6$) which indicates slight agreement from the respondents with these statements. The score on 'Training related to editing and notebook checking was also included in training sessions' and 'This training fulfills all my current pedagogical needs as a Teacher of English Language' was ($M=3.5$) which also depicts that, respondents were slightly agree with these statements. An overall score regarding teachers' opinion about inclusion of new pedagogies was ($M=3.6$) which shows a slight agreement from the participants in this regard.

The data of this table indicates that the majority of responses fall in the "Agree" (A) category across all statements, with percentages ranging from 48% to 64% and "Strongly Agree" (SA) responses are consistently lower, ranging from 8% to 17%. The overall

average mean score is 3.6, indicating a generally positive perception while individual statement means range from 3.5 to 3.9, showing relatively consistent opinions across different aspects of new pedagogies. Similarly, new Pedagogical Practices were added to the Training and training included a component of skills for utilizing the textbooks had the highest mean score (M=3.8) while training fulfills all current pedagogical needs as a Teacher of English Language and training related to editing and notebook checking yielded the lowest (M=3.5).

Table 4.16: *Suggestions of Teachers for Improvement in Online Teacher Training*

Suggestion	Frequency	Percentage
Bi-annual Teacher Training	122	13.6
More training on Vocabulary building	35	3.9
More training on Grammar & Pronunciation	17	1.9
Face to Face Training	86	9.6
Training of Language Learning related to real life situations	52	5.8
Provision of Technical Resources to trainees	171	19.0
Stress free atmosphere during training	23	2.6
Provision of Teaching Resources	18	2.0
Trainers with trainers having High Qualification	17	1.9
More duration for training	35	3.9
Training according to socio-economic back ground of learners	21	2.3
No response	303	34.0

Teachers were asked to give any suggestions for improvement in online training. Table No. 4.16 above indicates that 34% (303) opted not to respond to this question of the questionnaire. However, amongst the respondents who gave their suggestions for

improvement of such training programmes in future, 19% (171) of respondents suggested to provide technical resources to the trainees while 13.6% (122) respondents suggested that online training should be conducted bi-annually. 9.6% (86) respondents suggested for conducting of face-to-face training. 5.8% (52) respondents suggested for Training of Language Learning related to real life situations while 3.9% (35) respondents suggested for More training on Vocabulary building and More duration for training. 2.6% (23), 2.3% (21), 2% (18), and 1.9% (17) respondents suggested for Stress free atmosphere during training, Training according to socio-economic back ground of learners, Provision of Teaching Resources, more training on Grammar & Pronunciation, and Trainers with trainers having High Qualification respectively.

This table depicts that the highest percentage of respondents (34%) did not provide any suggestion and among those who did respond, the most frequent suggestion was the provision of technical resources to trainees (19%) and Bi-annual teacher training was the second most popular suggestion (13.6%). Technical resources (19%), Frequency of training (13.6%), Mode of training (9.6% suggesting face-to-face training) and practical application (5.8% suggesting training related to real-life situations) were the key areas of concern for the teachers while Specific language skills (vocabulary building 3.9%, grammar and pronunciation 1.9%), Duration of training (3.9%) and Training environment (2.6% suggesting a stress-free atmosphere) were less frequent suggestions.

Table 4.17: *Missing aspects of Online Teacher Training*

Missing Aspects	Frequency	Percentage
Lack of technical facilities	72	8.0

Frequent communication between the trainer and trainees	294	32.7
Lack of physical contact between trainers and trainees	52	5.8
Updated components	17	1.9
Less duration	62	6.9
Training of Item Development	21	2.3
Availability of training content	35	3.9
No comments	347	38.6

Table 4.17 shows that 38.6 (347) respondents did not respond to this question. However, amongst those who responded to this question, 32.7% (294) opined that frequent communication between the trainer and the trainees was missing in this training programme. 8% (72) respondents indicated a lack of technical facilities. 6.9% (62), 5.8% (52), 3.9% (35), 2.3% (21) and 1.9% (17) respondents pointed out the missing aspects of Less duration, Lack of physical contact between trainers and trainees, Availability of training content, Training of Item Development and Updated components.

This table shows that the highest percentage of respondents (38.6%) provided no comments, among those who did respond, the most frequently mentioned missing aspect was frequent communication between the trainer and trainees (32.7%) and technical facilities and duration of training were the next most common concerns where communication (32.7%), Technical facilities (8%), Duration of training (6.9%) and Physical contact (5.8%) were key areas of concern. On the other hand, Availability of training content (3.9%), Training of Item Development (2.3%) and Updated components (1.9%) were the least frequent concerns for the teachers.

Table 4.18: *Segments to be added in future Online Teacher Training*

Modules to be Added	Frequency	Percentage
New Pedagogies	70	7.8
More activities	335	37.2
Teacher as a role model	37	4.1
Time management	41	4.6
Use of Multimedia	135	15.0
Soft Skills	113	12.6
Case study-based modules	57	6.3
Teaching of Vocabulary	77	8.6
No Comments	35	3.9

According to Table No. 4.18, shows the data regarding suggested segments that should be, in the opinion of teachers, added in a future online training programme. 37.2% (335) respondents suggested to included more activities in the future training programmes. 15% (135) respondents suggested that more use of multimedia should be added to the future training programmes while 12.6% (113) respondents suggested addition of soft skills. Teaching of vocabulary, new pedagogies, case study-based modules, time management, teacher as a role model were suggested by 8.6% (77), 7.8% (70), 6.3% (57), 4.6% (41) and 4.1% (37) respondents respectively. 3.9% (35) respondents did not comment on this question.

This table depicts that the highest percentage of respondents (37.2%) suggested adding more activities to the training, use of Multimedia (15%) and Soft Skills (12.6%) were the next most frequently requested additions while only a small percentage (3.9%) provided no comments, indicating a high level of engagement with this question. Similarly,

more activities (37.2%), use of Multimedia (15%), soft Skills (12.6%), teaching of Vocabulary (8.6%) and new Pedagogies (7.8%) were key areas of concern while Case study-based modules (6.3%), time management (4.6%) and teacher as a role model (4.1%) were the least frequent suggestions.

Table 4.19: *Triangulation Matrix of Input Evaluation*

Theme / Code	Teachers Questionnaire	Master Trainer's Interview	Convergence Level
alignment of SNC with Training Modules	Overall average mean score on 5-point Likert scale (M=3.9)	"I'd say it aligned quite well. The trainers repeatedly emphasized the importance of standardization and unity in education. They showed us how the new curriculum aims to provide equal opportunities for all students across the country, regardless of their background or location. That's really at the heart of the 'One Nation One Curriculum' vision, isn't it?"	Full convergence
Training of Knowledge and skills related to competencies, benchmarks, and standards	Overall average mean score on 5-point Likert scale (M=3.6)	"For the most part, yes. They did a comprehensive job covering these areas. However, I think they could have spent more time on them as outlined in the SNC. We gave an overview, but I don't feel it made the trainees fully prepared to implement these in practice"	Partial convergence
being Critically aware, self-directed, reflective, and analytical, and able to adapt to the Single National Curriculum 2021.	Overall average mean score on 5-point Likert scale (M=3.6)	"I think they'll need more support as they try to adapt."	Partial convergence

General Aspects of Training	Overall average mean score on 5-point Likert scale (M=3.2)	"I'd say I feel about 70% prepared. The training gave the trainees a good overview of the curriculum and some useful teaching strategies. However, I still feel uncertain about some of the more practical aspects of implementation, especially in terms of adapting it to specific classroom context."	Partial convergence
New Assessment Techniques	Overall average mean score on 5-point Likert scale (M=3.7)	"The most valuable part for me was about the new assessment techniques. The sessions on creating rubrics and designing performance tasks were eye-opening. I think these will really help the teachers to evaluate student learning more effectively."	Full convergence
New Pedagogies	Overall average mean score on 5-point Likert scale (M=3.6)	"Yes, the training covered the area of new pedagogies quite well, like using jigsaw puzzle for language learning"	Full convergence
Suggestions for Improvement in Online Teacher Training	provision of technical resources to trainees	Follow up support for improvement	Full convergence
Missing aspects of Online Teacher Training	frequent communication between the trainer and trainees	"I felt that the integration of technology in teaching, which is emphasized in the SNC, was not sufficiently explored during our sessions."	Partial convergence
Segments to be added in future Online Teacher Training	Inclusion of more activities in training.	"I think that the component of environmental education, which is part of the SNC's aim to create responsible citizens, was not given sufficient attention."	Divergence

The table 4.19 presenting triangulation matrix for evaluation of input level of the teachers training programme indicates that There's full convergence between the teachers' questionnaire results (M=3.9 out of 5) and the master trainer's interview. This suggests that the training successfully communicated the alignment between the Single National Curriculum (SNC) and the training modules, while Partial convergence is observed where teachers rated the aspect of training on knowledge and skills relatively high (M=3.6), the master trainer felt that more time could have been spent on these areas. This indicates a potential gap between perceived and actual preparedness. The area of the training of critical awareness and adaptability also indicates partial convergence. Teachers' ratings (M=3.6) suggest moderate confidence, but the master trainer's comment implies that more support may be needed for practical implementation. Partial convergence is seen in general aspects of training as well. The lower teacher rating (M=3.2) aligns with the master trainer's 70% preparedness estimate, highlighting areas for improvement. Full convergence is depicted in new assessment techniques with teachers rating it highly (M=3.7) and the master trainer emphasizing its value. This appears to be a strong point of the training. New pedagogies also have shown full convergence with positive feedback from both teachers (M=3.6) and the master trainer. This suggests effective coverage of new teaching methods. Full convergence on the need for technical resources and follow-up support, partial convergence on communication issues and insufficient coverage of technology integration in teaching while divergence is seen in opinions about what should be added, with teachers wanting more activities and the master trainer suggesting more focus on environmental education.

It can be inferred that the training was largely successful in conveying the alignment between SNC and the training modules, new assessment techniques and pedagogies were

well-received and effectively taught, however, there are gaps between perceived and actual preparedness in some areas, particularly in practical implementation. Moreover, technical resources and follow-up support are needed and integration of technology in teaching was not sufficiently covered while there's a need for more practical activities and better communication during training.

4.3 Process Evaluation

4.3.1 Data Analysis of Classroom Observation Checklist

Table 4.20: *Score on Classroom Observation Checklist*

Observation	Frequency			Percentage			<i>M</i>
	Observed (1)	Not Observed (3)	More emphasis recommended (3)	Observed (1)	Not Observed (3)	More emphasis recommended (3)	
Teacher Teaches English using New Pedagogical Methods	3	4	29	44	0	56	2.7
Teacher keeps teaching from the textbook only	0	15	21	0	53	47	2.6
There are a lot of activities to perform by the students	3	7	26	44	22	33	2.6
Teacher takes test on English using new assessment techniques	0	6	30	0	44	56	2.8
Language skills like listening, speaking, reading, writing is taught appropriately	0	4	32	0	42	58	2.9
Education for Sustainable Development (ESDA) is included in lessons	0	7	29	0	67	33	2.8
Concept of Global Citizenship education is taught	0	5	31	0	47	53	2.9
Teachers use Rubrics to test students' learning.	0	6	30	0	44	56	2.8

Observation	Frequency			Percentage			<i>M</i>
	Observed (1)	Not Observed (1)	More emphasis recommen- ded (3)	Accomplish- ed very well (1)	Not Observed (1)	More emphasis recommen- ded (3)	
Teacher checks English Notebook regularly and gives feedback	0	0	36	0	0	100	3.0
Teacher uses jigsaw reading and concept map techniques	0	4	32	0	56	44	2.9
Teacher asks questions regarding how students feel about a lesson	0	9	27	0	25	75	2.8
Teacher tells the students about websites related to your lesson	5	5	26	56	14	31	2.6
Teacher teaches how to talk frequently in English	0	11	25	0	58	42	2.7
English lesson includes listening practice also	5	14	17	19	67	14	2.3
Teacher teaches about critical thinking in English class	4	7	25	25	47	28	2.6
Teaching of grammar and vocabulary are given appropriate time	0	17	19	0	47	53	2.5
There is a lot of writing activity in class	0	24	12	0	67	33	2.3
Teacher teaches ethics and good citizenship in during class	0	13	23	0	36	64	2.6
Students are given Performance Tasks exercise in class for assessment	5	16	15	14	44	42	2.3
Overall M Score	1	9	26	11	41	48	2.7

Table 4.20 shows the data related to classroom observation of pedagogies practiced by the Primary School Teachers (PSTs) in their English language class of grade V. Checklist rating of three male (03) and three female (03) English language classrooms, where six lessons each were observed, is shown in this table. Data indicates that checking of

notebooks regularly and giving of feedback was accomplished very well as it gained an average 3.0 rating, while rating on ‘Language skills like listening, speaking, reading, writing are taught appropriately’, ‘Concept of Global Citizenship education is taught’, ‘Teacher uses jigsaw reading and concept map techniques’ was 2.9. Moreover, 2.8 rating was observed on ‘Teacher takes test on English using new assessment techniques’, ‘Education for Sustainable Development (ESDA) is included in lessons’, ‘Teachers use Rubrics to test students’ learning’, ‘Teacher asks questions regarding how students feel about a lesson’ while the rating on ‘Teacher Teaches English using New Pedagogical Methods’, and ‘Teacher teaches how to talk frequently in English’ was 2.7. Classroom observation yielded a rating of 2.6 on ‘Teacher keeps teaching from the textbook only’, ‘There are a lot of activities to perform by the students’, ‘Teacher tells the students about websites related to your lesson’, ‘Teacher teaches about critical thinking in English class’, and ‘Teacher teaches ethics and good citizenship in during class’, while rating on ‘Teaching of grammar and vocabulary are given appropriate time’ was 2.5. ‘English lesson includes listening practice also’ and ‘There is a lot of writing activity in class and ‘Students are given Performance Tasks exercise in class for assessment’ had a rating of 2.3. Overall average rating of the observation checklist was 2.7 which shows that teachers were nearly accomplishing the practice of newly learned pedagogies in their English language class taught to Grade V students.

The table indicates that the overall mean score is 2.7 out of 3, indicating generally good implementation of new teaching methods and techniques, while, 48% of observations were rated as "Accomplished very well", 41% as "More emphasis recommended", and only 11% as "Not Observed". It is also found that Notebook checking and feedback (100% accomplished very well, M=3.0), Teaching language skills appropriately (58%

accomplished very well, M=2.9), Use of concept maps and jigsaw reading (44% accomplished very well, M=2.9), Global citizenship education (53% accomplished very well, M=2.9).

Table 4.21: *Triangulation matrix of Process Evaluation*

Type of Data	Results	Validation
Teachers Questionnaire	<p>The overall average mean score is 3.6, indicating a generally positive perception about being Critically aware, self-directed, reflective, and analytical, and able to adapt to the Single National Curriculum 2021.</p> <p>The overall average mean score is 3.7, indicating a generally positive perception while individual statement means range from 3.5 to 3.8, showing relatively consistent opinions across different aspects of assessment training.</p> <p>The overall average mean score is 3.6, indicating a generally positive perception while individual statement means range from 3.5 to 3.9, showing relatively consistent opinions across different aspects of new pedagogies.</p>	Full convergence
Classroom Observation Checklist	<p>Analysis of classroom observation checklist data indicates that the overall mean score is 2.7 out of 3, indicating generally good implementation of new teaching methods and techniques</p> <p>"Our training has focused heavily on student-centered learning approaches. Teachers are now better equipped to design interactive lessons that encourage critical thinking and problem-solving, which aligns with the new curriculum's emphasis on 21st-century skills."</p>	Full convergence
Interview	<p>"I hope, teachers will maintain reflective journals which will encouraging them to critically analyze their teaching practices and student outcomes on a daily</p>	Full convergence

basis."
 "The teachers have learned the 'Think-Pair-Share' technique. This strategy encourages students to think individually about a topic, discuss it with a partner, and then share their ideas with the whole class, promoting active participation and critical thinking."
 "Our training introduced teachers to creating and using analytic rubrics. They now understand how to break down complex tasks into specific criteria, making assessment more objective and providing clearer feedback to students."

Table No. 4.21 indicates that there is consistency across results based on three different data sources regarding the implementation of newly learned pedagogies and skills by the trainee teachers and practicing them in their English classroom to the students of grade-V. The results from each data source reinforce the findings and indicate strong triangulation. Alignment of results across different types of data suggests a potentially reduced methodological bias that helps reaching a comprehensive over view of the process level of the training programme which indicates successfulness of the programme.

4.4 Product Evaluation

4.3.2 Data Analysis of Students' Questionnaire

Table 4.22: *Gender-wise Percentage of Students*

Gender	Male	Female	N
	74	61	135
Percentage	54.81	45.19	100

Table No. 4.22 table shows that 54.81% (74) of the students who responded to the students' questionnaire were male while 45.19 (61) students were female.

Table 4.23: *Opinion of Students about their English Teacher's Teaching Practice in their Class*

	SDA (1)		D (2)		NDA (3)		A (4)		SA (5)		M
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	
Your Teacher Teaches English in New Teaching Style	9	12	14	19	15	20	55	74	42	57	3.8
Your teacher keeps teaching from the textbook only	7	9	18	24	14	19	61	82	35	47	3.7
There are a lot of activities taught in your English lesson	8	11	15	20	15	20	59	80	38	51	3.8
You are learning more language skills like listening, speaking, reading, writing.	11	15	13	18	11	15	44	59	56	76	3.9
Teacher uses jigsaw reading and concept map in your English Class	6	8	10	14	9	12	47	63	63	85	4.1
Teacher teaches you how to talk frequently in English	4	5	7	9	0	0	51	69	69	93	4.2
Your English lesson includes listening practice also	8	11	11	15	7	9	64	86	45	61	3.9
Your teacher teaches you about critical thinking in your English class	5	7	9	12	2	3	58	78	61	82	4.2
You are taught grammar and vocabulary regularly	11	15	8	11	4	5	63	85	49	66	4.0
There is a lot of writing activity in your English class	19	26	17	23	14	19	39	53	46	62	3.6
Average	9	12	12	16	9	12	54	73	50	68	3.9

Table 4.23 above depicts the class V students' opinion about the English teachers' teaching practiced in their class. ($M=4.2$) was gained on 'Your teacher teaches you about critical thinking in your English class', and 'Teacher teaches you how to talk frequently in English' which shows that students were more than agreed to these statements, while they

were also agreed to the statement of ‘You are taught grammar and vocabulary regularly’ having ($M= 4.0$). Moreover, score on ‘You are learning more language skills like listening, speaking, reading, writing’, and ‘Your English lesson includes listening practice also’ was ($M=3.9$) which indicates an almost agreement from the respondents on these statements. The score on ‘There are a lot of activities taught in your English lesson’, and ‘Your Teacher Teaches English in New Teaching Style’ was ($M=3.8$), while ‘Your Teacher keeps teaching from the textbook only’ and ‘There is a lot of writing activity in your English class had ($M= 3.7$) and ($M=3.6$) respectively. An overall score of ($M=3.6$) regarding Opinion of Students about their English Teacher’s Teaching Practice in their Class shows that there was nearly an agreement from the students on this aspect.

Table No. 4.24: *Opinion of Students about Citizenship Education*

	SDA (1)		D (2)		NDA (3)		A (4)		SA (5)		M
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	
You are taught about Education for Sustainable Development (ESD).	7	9	11	15	8	11	55	74	54	73	4.0
You are taught about global citizenship education during your English class	9	12	8	11	3	4	67	90	48	65	4.0
Your teacher teaches you ethics and good citizenship in English class	5	7	2	16	14	19	35	47	69	93	4.1
Average	7	7	10	10	8	8	52	52	57	56	4

According to table No. 4.24, the score on ‘Your teacher teaches you ethics and good citizenship in English class was ($M=4.1$) while statements ‘You are taught about Education for Sustainable Development (ESD)’, and ‘You are taught about global citizenship education during your English class had the score of ($M=4.0$) which indicates agreement from the students regarding teaching of citizenship education in their English class. Overall score of this practice was ($M=4.0$).

Table 4.25: *Opinion of Students about Using Web Resources*

	SDA (1)		D (2)		NDA (3)		A (4)		SA (5)		M
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	
Teacher tells you about the websites related to your lesson	7	9	11	15	9	12	59	80	49	66	4.0
Average	7	9	11	15	9	12	59	80	49	66	4.0

The table 4.25 shows that students were agreed with the statement of ‘Teacher tells you about the websites related to your lesson’ which had the score of ($M=4.0$), which shows agreement of students’ opinion in this regard.

Table 4.26: *Opinion of Students about Assessment*

	SDA (1)		D (2)		NDA (3)		A (4)		SA (5)		M
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	
Teachers take test on English in new style	6	8	8	11	7	9	59	80	55	74	4.1
Teachers use Rubrics to test your learning.	1	1	5	7	11	15	71	96	47	63	4.2
Teacher checks your English Notebook regularly and gives feedback	9	2	6	8	7	9	65	88	48	65	4.0

	<i>SDA</i>		<i>D</i>		<i>NDA</i>		<i>A</i>		<i>SA</i>		<i>M</i>
	<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	<i>(6)</i>	<i>(7)</i>	<i>(8)</i>	<i>(9)</i>		
	<i>Freq.</i>	<i>%</i>	<i>Freq.</i>	<i>%</i>	<i>Freq.</i>	<i>%</i>	<i>Freq.</i>	<i>%</i>	<i>Freq.</i>	<i>%</i>	
Teacher asks you questions regarding how you feel about a lesson	4	5	7	9	4	5	58	78	62	84	4.2
You are given Performance Tasks exercise in English class	3	4	4	5	0	0	68	92	60	81	4.3
Average	5	4	6	8	6	8	64	87	54	73	4.2

Students were asked about their opinion regarding the use of new assessment techniques used by the English teachers in their class. According to table No. 4.26, a score of (M=4.3) was gained on ‘You are given Performance Tasks exercise in English class which indicates a high score of agreement from the students on this statement, while score of (M=4.2) was gained on ‘Teacher asks you questions regarding how you feel about a lesson’ and ‘Teachers use Rubrics to test your learning’ similarly. The score on ‘Teachers take test on English in new style’ and ‘Teacher checks your English Notebook regularly and gives feedback’ was (M=4.1) and (M=4.0) respectively. An overall score of (M=4.2) on this aspect of English teachers’ practice of newly learned assessment techniques in their English class to the students of Grade V shows a high score of agreement.

Table 4.27: *Comparison of Teachers and Students Responses related to Product Evaluation*

Data Source	Level	Frequency	Percentage	Mean	Chi-Square (χ^2)	p-Value
Teachers’ Questionnaire	SDA	60	6.7	4.0	42.5866	9.488
	D	105	11.7			

	NDA	85	9.5	
	A	507	56.4	
	SA	142	15.8	
	SDA	8	5.6	
	D	10	7.4	
Students' Questionnaire	NDA	8	6.0	4.0
	A	57	42.0	
	SA	53	38.9	

χ^2 value calculated $\alpha = 0.05$, $df = 4$

Table 4.27 shows that the calculated value of Chi-Square for teachers' questionnaire and students' questionnaire (42.5866) was much greater than the critical value (9.488) which indicates a great difference of significance between the opinion of teachers and students regarding practicing of newly learned pedagogies in the class of English for grade-V students. However, overall mean score on both the questionnaires was the same (4.0) which shows agreement from both teachers and the students about classroom practices.

4.5 Analysis of Interview of Master Trainers

In depth structured interviews of 20-30 minutes duration were conducted with five Master trainers for triangulation and validation of the quantitative data.

4.5.1 Coding

The interviewees were assigned codes as MT1, MT2, MT3, MT4, MT5 for identification and confidentiality.

4.5.2 Introduction

All the participants were highly qualified having M. Phil., MS degrees in English and/or Linguistics. They were experienced subject specialists having teaching experience from 10-15 years while all of them had at least seven (07) years' experience of conducting training programmes pertaining to different areas of English language teaching under Quaid-e-Azam Academy of Educational Development (QAED).

4.5.3 Key responses

A juxtapose of key responses from the five interviews on major themes and related codes is presented below in table No. 4.27

Table 4.28: *Key responses from the interviews*

Theme	Codes	Key Response
Alignment of Training Modules with Single National Curriculum guidelines,	SNC-Training Alignment Content Coverage / Gaps in Coverage	"The training content aligned quite well with the 'One Nation One Curriculum' vision." "The alignment was strong. We spent a good amount of time discussing how this new curriculum aims to create unity in education." "I have mixed feelings about the alignment. It did a good job of explaining the overarching goals but had faults in exactly converting the guidelines into training material."
Training Effectiveness	Overall, Success / Effectiveness Strengths and Weaknesses of Training Impact on Teachers Training module components,	"Overall, I'd say the training was moderately successful. It provided a good introduction to the SNC and its objectives, but I feel it fell short in terms of practical implementation strategies. We provided the 'what' of the classroom practice, but not enough of the 'how'."
Content Adequacy / Skill-Specific Training	Skill Coverage / Acquisition Modification Suggestions Delivery Method Training Structure	"I feel significantly more confident about training of grammar and vocabulary after this training. The sessions provided a comprehensive

	New Teaching Strategies / Pedagogical Innovations Adequacy of training model	overview of modern grammar teaching methodologies, particularly the emphasis on teaching grammar in context rather than in isolation. However, while I feel very confident about training of teaching vocabulary, I still have some reservations about addressing more complex grammatical structures. I would have appreciated more practical examples for teaching grammar"
Training Model / Online Training Experience	Current Model Evaluation Trainer Effectiveness Sources and environment of the training programme Communication between the trainers and the trainees	"We did a pretty good job, all things considered. We used chat feature for group discussions, which helped. We also incorporated interactive questions throughout the sessions. This feature was always active, allowing for ongoing Q&A. It wasn't the same as being in a room together, but it was more engaging than I expected."
SNC Implementation	Implementation Challenges / Practical Challenges Implementation Readiness	"While the training covered a lot of ground, I feel there were some gaps. The academic subjects were well-covered, but I think more time could have been devoted to discussing the implementation of the SNC in diverse classroom settings. Pakistan has a wide range of school environments, from urban private schools to rural public schools, and I believe the training should have provided more tailored strategies for these different contexts. Also, the component of parental involvement, which is mentioned in the SNC, was barely touched upon."
Professional Development / Post-Training Support	Ongoing Professional Development Follow-up Needs	"To be honest, I'm still feeling a bit overwhelmed. The training included many new approaches, which is good, but I'm struggling to see how they can be implemented in large classrooms with limited resources. I think the teachers need more support as they try to adapt."
Teacher Competencies / Preparedness	Teacher Confidence / Confidence Levels	"I feel that teachers were quite well-prepared, actually. The training was comprehensive and

Assessment	Areas for Improvement Assessment Tools / Techniques	provided them with a lot of resources. Of course, there will be challenges when they start implementing, but I feel that teachers have a solid foundation to work from. "The most valuable part in my opinion was component about the new assessment techniques. The sessions on creating rubrics and designing performance tasks were good for the participants. I think these will really help the teachers evaluate student learning more effectively."
Improvement Suggestions / Continuous Improvement	Missing / Ineffective Modules Strengths and weaknesses of the training programme Future steps for making the training programme better	"I would recommend extending the duration of the program to allow for more in-depth exploration of complex topics. Additionally, incorporating a classroom implementation phase with follow-up support would help teachers better translate their learning into practice."

In view of the key responses shown in table 4.27 above, on different interview questions, this table indicates that the training modules were generally aligned well with the 'One Nation One Curriculum' vision. However, there were mixed feelings about the practical implementation of these guidelines. The training was considered moderately successful. It provided a good introduction to the SNC and its objectives but fell short in offering practical implementation strategies. Master trainers felt more confident in certain areas for instance grammar and vocabulary training, but less so in others for instance complex grammatical structures. There was a desire for inclusion of more practical examples and implementation strategies. The online model was relatively successful, incorporating interactive elements like chat features and ongoing Q&A sessions. While not equivalent to in-person training, it was more engaging than expected. The training covered academic subjects well but lacked adequate discussion on implementing SNC in diverse

classroom settings. There were gaps in addressing the varying needs of urban private schools versus rural public schools. Some trainers felt overwhelmed by the new approaches but struggled to see how they could be implemented in large classrooms with limited resources. There was a clear need for ongoing support. Overall, trainers were considered well-prepared with a solid foundation, though challenges in implementation were anticipated. The training on new assessment techniques, including creating rubrics and designing performance tasks, was highly valued.

4.5.4 Question-wise summary of the responses from Master Trainers

4.5.4.1 Alignment of SNC with Training Module

The responses were generally positive, with some reservations. Most trainers felt that the content aligned well with the 'One Nation One Curriculum' vision. They noted that the training effectively conveyed the overarching goals of creating unity in education through a standardized curriculum. However, some trainers expressed mixed feelings, pointing out that while the big-picture alignment was good, there were challenges in translating the guidelines into practical training material. A few responses indicated that the training could have done more to explore how the vision would be implemented across different regions of Pakistan.

However, the responses revealed several perceived gaps in the training content. While trainers generally felt that core academic subjects were well-covered, they identified several areas that needed more attention for implementation strategies for diverse classroom settings, particularly in resource-constrained environments, parental involvement, which was mentioned in the SNC but not adequately addressed in the training, adaptation of the curriculum for students with special needs or learning

difficulties, practical implementation strategies, especially for challenging environments, and integration of local context and cultural elements while maintaining curriculum standardization.

In conclusion, the responses suggest that while the training was comprehensive in covering academic content, it fell short in addressing the practical challenges of implementing the curriculum across Pakistan's diverse educational landscape. Trainers felt that more attention to these practical aspects would have improved the overall effectiveness of the training program.

4.5.4.2 Knowledge and Skills Related to Competencies

The responses on questions related to this theme were mixed. Some trainers felt the training provided useful strategies for encouraging student participation and improving oral communication skills, including innovative techniques for oral presentations. However, others indicated that while oral communication was addressed, more time could have been spent on practical exercises. Overall, there seems to be a recognition of some improvement in this area, but also a desire for more in-depth, practical training on teaching oral communication skills.

The responses suggest that the training provided a good overview of modern approaches to teaching reading comprehension, with a particular emphasis on critical analysis of texts. Some trainers found the section on developing critical thinking skills through guided reading exercises especially helpful, noting that it provided concrete strategies for classroom use. However, there was also a sentiment that while reading comprehension was covered, the training could have delved deeper into techniques for

fostering critical thinking skills across different subjects. The overall impression is that this area was addressed, but there's room for more comprehensive coverage.

The responses also showed a range of confidence levels, with a generally positive trend. Many trainers reported feeling significantly more confident about teaching grammar and vocabulary, particularly appreciating the comprehensive overview of modern grammar teaching methodologies and the emphasis on teaching grammar in context. The training on vocabulary instruction was consistently praised, with trainers feeling very confident in this area. However, some trainers expressed reservations about teaching more complex grammatical structures and indicated a desire for more practical examples. There was also a distinction made between confidence in teaching basic versus advanced grammar topics, with some trainers feeling they needed more guidance on the latter. Overall, the training seems to have boosted confidence in teaching grammar and vocabulary, but with some areas still needing further development.

4.5.4.3 Critical Awareness and Adaptability

The responses from master trainers regarding the Single National Curriculum (SNC) training reveal a mixture of positive outcomes and areas for improvement. The training successfully provided a solid theoretical foundation, helping trainers understand the objectives and direction of the new curriculum. Particularly valued were the sessions on new assessment techniques and the emphasis on teaching methods like contextual grammar instruction.

However, a common theme across responses was the need for more practical implementation strategies. While trainers felt they grasped the 'what' of the new

curriculum, many expressed a desire for more guidance on the 'how', especially for adapting to diverse classroom settings and resource-limited environments.

The training did foster reflective and analytical thinking among the trainers. Interactive elements of the training, discussions about implementing the SNC in various contexts, and the introduction of new assessment techniques all contributed to this. Some trainers noted that even identifying gaps in the training prompted them to be more analytical about their own practice.

Despite these positives, many trainers felt only moderately prepared to implement the new curriculum, citing concerns about practical challenges in real classroom settings. This suggests a need for more hands-on, practical training and ongoing support as they begin to implement the SNC.

It can be concluded that, while the training laid a good foundation and encouraged reflective teaching practices, there's a clear opportunity to enhance future training sessions with more practical examples, implementation strategies, and structured reflection activities to better prepare teachers for the realities of implementing the new curriculum across Pakistan's diverse educational landscape.

4.5.4.4 New Pedagogies and Assessment Techniques

The master trainers' responses reflect a mix of enthusiasm for new teaching and assessment strategies imparted during the training, along with realistic concerns about implementing these techniques by the teachers in their classrooms.

The training introduced several innovative teaching approaches, particularly in language instruction, such as teaching grammar in context, new oral presentation techniques, and integrating various language skills. Trainers expressed excitement about

these new methods and seemed eager about how the teacher will apply them in their teaching.

Regarding assessment tools, the training appears to have been quite effective. Many trainers reported feeling significantly more confident in teaching using rubrics and performance tasks after the sessions. They appreciated the practical aspects of the training, such as hands-on experience in creating rubrics and designing performance tasks. This area of the training seems to have been particularly well-executed and impactful.

However, when considering the implementation of these new techniques, trainers anticipated several challenges. These challenges ranged from practical concerns like time constraints and resource limitations to more systemic issues such as ensuring consistency across different teachers and environments. They also recognized potential resistance from students and parents accustomed to traditional teaching and assessment methods.

Overall, the responses suggest that the training was successful in introducing new pedagogical and assessment techniques, boosting trainees' confidence in these areas. However, it also highlighted the gap between theory and practice, with trainers expressing concern about the realities of implementing these new approaches in diverse classroom settings. This indicates a need for ongoing support and possibly further training focused on practical implementation strategies as educators begin to apply these new methods in their schools.

4.5.4.5 Online Training Experience

The responses indicate that trainers employed various strategies to create an interactive online environment. These included using chat features for discussions, incorporating interactive questions, maintaining an active Q&A feature, and utilizing

various online tools to encourage participation. While acknowledging that it wasn't the same as face-to-face interaction, the trainers' efforts to foster engagement were generally appreciated and seen as effective given the constraints of the online format.

Overall, the online training experience seems to have been a positive surprise for many participants. While it couldn't fully replicate the benefits of in-person training, the trainers' efforts to create an interactive environment, combined with the inherent advantages of online learning, resulted in a generally successful experience. However, there's room for improvement in addressing the challenges unique to the online format, such as maintaining engagement over long periods and incorporating more hands-on activities.

4.5.4.6 Overall Training Effectiveness

Most master trainers felt the training was largely effective in preparing them for SNC implementation, with effectiveness ratings ranging from moderate to very well-prepared. Most valuable aspects indicated in the responses included comprehensive coverage of SNC components and learning outcomes, hands-on workshops for practicing new teaching methodologies, focus on student-centered learning approaches, modules on integrating technology in teaching, emphasis on developing critical thinking and problem-solving skills, training on collaborative learning techniques, coverage of formative and summative assessment techniques, modules on integrating local content into the standardized curriculum, focus on cross-curricular connections. However, some areas need improvement also, such as, strategies for implementing in resource-constrained settings, adapting curriculum for students with special needs, addressing cultural and linguistic diversity, time management techniques for teachers, guidance on assessing soft skills, strategies for multi-grade teaching, parent and community engagement strategies,

techniques for remedial teaching, curriculum pacing and coverage within the academic year, strategies for managing large class sizes.

The responses indicate that while the training was generally perceived as effective in covering the core aspects of the SNC, there are several areas where master trainers feel additional support or guidance is needed. These insights can be valuable for refining future training programs to better prepare educators for successful SNC implementation across diverse educational contexts in Pakistan.

4.5.4.7 Suggestions for Improvement

Master trainers suggested enhancing future programs with modules on differentiated instruction, technology integration, formative assessment, classroom management, and social-emotional learning. To improve online training, they recommend increasing interactivity, adding visual demonstrations, offering flexible scheduling, providing practical resources, and incorporating real-world scenarios. For post-training support, they proposed regular webinars, mentorship programs, resource libraries, periodic check-ins, and collaborative platforms for teacher networking. These recommendations emphasize practical, hands-on learning experiences and ongoing support to help teachers apply and expand their skills over time, focusing on real-world application and continuous professional development.

4.6 Summary

Analysis of data collected to find the answers to the research questions of this study indicates that content of Single National Curriculum documents and training modules for online teacher training programme were mostly aligned. Teachers' opinion about the online teacher training on Single National Curriculum was positive and they thought that they had

learned new pedagogies, new assessment techniques, they became able to teach their students in accordance with the guidelines set in Single National Curriculum, which could be verified by the classroom observation and responses by class V students which also indicated that newly learned skills, pedagogies and assessment techniques were almost fully practiced in the English language class by the English language teachers.

Moreover, interviews of Mater Trainers indicate some shortcomings of online teacher training program in terms of content alignment of training modules although, but their overall opinion about the training programme was also positive. However, they suggested inclusion of new modules and segments in future training programme along which follow up of the training which corresponds to almost all the results of teachers' and students' questionnaires and rating of observation checklist. In conclusion, the online training programme was successful in disseminating the knowledge and skills to Primary School Teachers for teaching of newly implemented Single National Curriculum to students of Grade V.

CHAPTER V

Summary, Findings, Discussion, Conclusions and Recommendations

5.1 Summary

The core research issue of the study was to evaluate successfulness of online teachers training programme for implementation of Single National Curriculum (SNC) by using Stufflebeam (2003, 2017) CIPP (Context, Input, Process, Product) model. A concurrent mixed method research design including both the qualitative and quantitative data collection and analysis techniques was used to reach the answers to research questions. Segregation of the study as well as chapters corresponds to CIPP Model and Research Questions of this study.

The objectives of the study were to evaluate Teacher Training Programme with respect to suggested pedagogies in Single National Curriculum, 2021., to examine the Teacher Training Modules in light of instructional strategies, to compare the content of Training Modules in the light of suggested Assessment Techniques, to investigate the opinion of teachers in the light of training imparted in pedagogies and instructional strategies, to explore the opinion of students of class V with respect to classroom pedagogies practiced by English language teachers, and to study perception of Master Trainers about teachers' training. The research questions were based on the objectives of the study; however, they were also integrated with four components of CIPP evaluation model in a way that research question 1 aligns with the Context level of the CIPP model because it asks about the alignment of training modules with the Single National

Curriculum (SNC) guidelines, which helped evaluate the context in which the program operates. Similarly, research question 2 relates to the Input level. It assesses the proficiency of English language teachers in relation to the SNC competencies, benchmarks and standards, which are inputs to the training program. Moreover, the research questions 3, 4, and 5 correspond to the Process level of the CIPP model as they focus on the effects of training, teachers' perceptions and implementation of new pedagogies, and the incorporation of newly learned methodologies into classroom practice. These questions evaluate how the program is being implemented. Lastly, research questions 6 and 7 align with the Product level of the CIPP model for evaluating the outcomes of the training program from the perspectives of students and Master Trainers, which helps evaluate the program's effectiveness and impact.

Thus, to achieve the objectives of the current study, nine hundred (464 male, 436 female) teachers who took the Online Teacher Training on Single National Curriculum were included in the study as a sample. These teachers were selected by using stratified convenience sampling from each stratum of trainee teachers from each of the nine administrative divisions of Punjab (100 respondents from each Division). Apart from that, 135 randomly selected students (74 male, 61 female) of grade V were also included in this study. Moreover, classroom observation checklist was used as a data collection tool whereby 6 lessons of English for Grade-V each from 6 public schools (3 male, 3 female) were observed. As a concurrent mixed method design requires the data through interviews should also be collected for triangulation purposes, a structured interview of five experienced master trainers was also conducted.

Therefore, this chapter discusses findings and results of the study to evaluate effectiveness of online teacher training programme for implementation of Single National Curriculum in public schools of Punjab, by using Stufflebeam's (2003) CIPP model of programme evaluation. Conclusions are drawn from the data analysis and discussed, recommendations are given and implications for any further research in the field are discussed.

5.2 Findings

In this section, findings based on data analysis are presented with respect to evaluation of Context, Input, Process, Output and Product (CIPP) of the training programme corresponding to research questions for each component of the evaluation model.

5.2.1 Findings related to research question 1 (Context Evaluation)

- 1- 60% of the content areas from the SNC document are covered in the training module, while 40% of the content areas from the SNC document appear to be missing from the training module. Moreover, Writing Skills have the highest number of slide references in the training module (Table 4.1).
- 2- 45% of the benchmarks from the SNC document are covered in the training module while 55% of the benchmarks from the SNC document appear to be missing from the training module, and Benchmarks related to linguistic expressions, role plays, punctuation, and sentence structures are not addressed in the training module (Table 4.2).
- 3- The training module shows strong alignment with the SNC document in areas related to language mechanics (pronunciation, vocabulary) and writing skills, however, there are significant gaps in coverage for several important content

areas outlined in the SNC document. Resultantly, the depth of coverage varies considerably among the aligned topics, with vocabulary receiving the most attention (Table 4.3).

- 4- It can be inferred that there is partial alignment between the SNC document and the training module content and Writing Skills received the most comprehensive coverage in the training module. On the other hand, Oral Communication Skills are well-represented in the training module. Therefore, there are potential gaps in the training module's coverage of certain SNC content areas.
- 5- There is partial alignment between the SNC document benchmarks and the training module content where more than half of the benchmarks from the SNC document are not explicitly addressed in the training module. Similarly, the coverage of benchmarks in the training module appears to be limited in depth. The training module focuses more on specific language elements rather than comprehensive skill development.
- 6- Due to uneven coverage of SNC guidelines in the training module, some critical components of the SNC document are not addressed in the training module.
- 7- The findings related to the first research question were that although many aspects of the guidelines from Single National Document were kept intact in the training modules for Online Teacher Training programme of English language teachers of Primary level, the training modules were not fully and completely aligned with the Single National Curriculum guidelines with respect to representation of related content in them.
- 8- Triangulation matrix for context evaluation by focusing on the alignment between English Language teacher training modules and the Single National

Curriculum (SNC) guidelines shows that 60% of the SNC content areas regarding competencies are covered in the training module, while 40% are missing while Only 45% of the SNC benchmarks are covered in the training module, with 55% missing, similarly, there is partial alignment between the SNC document and the training module, with uneven coverage of content areas.

- 9- Writing Skills have the highest number of slide references in the training module.
- 10- Some critical components of the SNC document are not addressed in the training module as specific benchmarks related to linguistic expressions, role plays, punctuation, and sentence structures are not addressed in the training module.
- 11- Teachers generally have a positive view of the alignment between SNC and the training modules regarding competencies as majority of teachers agree that the alignment between SNC components and training was well elaborated in terms of benchmarks and standards.
- 12- Views of the master trainers in this regard indicate convergence with the results of the content analysis while their views diverge from the teachers' opinion.

5.2.2 Triangulation of quantitative and qualitative data for context evaluation

- 13- Triangulation of quantitative and qualitative data presented in a triangulation matrix, showed that the SNC guidelines were partially covered in the training modules where some of the components proposed by SNC guidelines were either not present or partially present in the training modules (Table No. 4.4).

5.2.3 Findings related to research question 2 (Input Evaluation)

- 14- A large majority (75%) agree or strongly agree that participants were comprehensively introduced to SNC's nature and scope.

- 15- 69% agree or strongly agree that the modules had sufficient content for learning new pedagogies according to SNC.
- 16- 76% agree or strongly agree that the alignment between SNC components and training was well elaborated.
- 17- 85% agree or strongly agree that one module is not sufficient to cover all SNC guidelines for teaching English.
- 18- 62% support the idea of developing separate modules for classes I-II and III-V.
- 19- most responses indicate satisfaction with the training's alignment to SNC, there's also strong agreement (85%) that one module is insufficient for all aspects of teaching English according to SNC guidelines.
- 20- The training modules are generally perceived as well-aligned with SNC where Teachers feel they were adequately introduced to SNC's scope and nature. Therefore, there's a strong sentiment that more comprehensive or separate modules may be beneficial.
- 21- Despite overall satisfaction, there's recognition of potential gaps or areas for improvement.
- 22- Findings related to second research question were that teachers were given updated knowledge and skills related to competencies, standards, and benchmarks, suggested in Single National Curriculum, 2021 in the training modules and the same were disseminated to the participants of the training programme, hence the training was successful in this regard (Table No. 4.10).

5.2.4 Findings related to research question 3 (Input Evaluation)

- 23- There's general agreement (70% A or SA) that trainees were taught how to teach oral communication skills.
- 24- 75% agree or strongly agree that teaching pronunciation, stress patterns, and intonation were included in the training.
- 25- There's a notable weakness in training related to teaching literary text analysis, with 41% disagreeing or strongly disagreeing that this was adequately covered.
- 26- Training on appropriate formal and informal communication in different social settings appears to be lacking, with 56% disagreeing or strongly disagreeing.
- 27- There's moderate agreement (69% A or SA) that teaching creative writing was part of the training.
- 28- 75% agree or strongly agree that trainees were explained about benchmarks of learning English for grade-V according to SNC.
- 29- The training program appears to be more effective in teaching core language skills and mechanics and there are significant gaps in areas related to literary analysis and social communication skills. Therefore, teachers generally feel well-informed about SNC benchmarks for grade-V English. Hence, the training seems to have a balanced approach to both receptive (comprehension) and productive (writing) skills.
- 30- Considering the opinion of the teachers on teachers; questionnaire the finding related to research question three was that English language teachers gained knowledge in terms of their being critically aware, self-directed, reflective, and

analytical, and had the ability to adapt to the Single National Curriculum 2021 (Table No. 4.11).

5.2.5 Findings related to research question 4 (Input Evaluation)

27. Teachers feel most confident in their ability to teach formal and lexical aspects of language and oral communication skills after the training.
28. There's relatively consistent agreement across various language teaching skills (reading, writing, critical thinking), with means ranging from 3.6 to 3.7.
29. 78% of teachers agree or strongly agree that they've gained competency in teaching appropriate ethical and social development to students.
30. While still positive, teachers express slightly less confidence in areas related to Education for Sustainable Development and global citizenship education.
31. 76% of teachers agree or strongly agree that they can teach reading and critical thinking skills after the training.
32. 75% of teachers feel they have learned new pedagogies to teach writing skills.
33. The training program appears to have successfully improved teachers' confidence across a range of English language teaching skills, resultantly, there's a strong focus on core language skills (oral communication, reading, writing) and formal aspects of language.
34. The training has addressed broader educational concepts like ethical development and critical thinking, while, areas related to global perspectives (ESDA and global citizenship) show slightly lower, but still positive, results.
35. Teachers' opinion about practicing new pedagogies and Assessment Techniques was positive regarding learning of these skills in their training and practicing them

in their English language class while teaching English to students of Grade V (Table No. 4.12).

5.2.6 Findings related to research question 5 (Input Evaluation)

36. There's strong agreement that the training components were well-designed for participation (87% A or SA) and that objectives were clearly stated (85% A or SA).
37. A significant majority (33% D or SD) felt that the duration allocated for training was not appropriate.
38. There's a clear preference for face-to-face training over online training (56% D or SD with the statement that online is better).
39. Despite the preference for face-to-face training, many found it easier to participate from home (76% A or SA).
40. There are mixed feelings about the ease of communicating with trainers online (41% D or SD vs. 47% A or SA).
41. Most participants (66% A or SA) felt the trainers were well-versed and competent for online training.
42. Many participants (27% D or SD) reported not having all the required facilities for easy participation.
43. Despite some challenges, most participants (66% A or SA) felt the training succeeded in achieving its objectives.
44. The training program has strong structural elements, with clear objectives and well-designed components but there are significant concerns about the duration of the training.

45. While online training presents some advantages (like ease of participation from home), it's generally less preferred than face-to-face training due to technical challenges and communication difficulties in the online format were notable issues for some participants. However, despite challenges, the training is perceived as largely successful in meeting its objectives (Table No. 4.13).
46. The training appears to have covered a wide range of assessment techniques, including rubrics, new procedures, affective domain assessment, and the use of progression matrices.
47. There's strong agreement (75% A or SA) that techniques to assess students' affective domain were included in the training.
48. 79% of teachers agree or strongly agree that they can prepare and use marking schemes according to SNC guidelines.
49. A high percentage (81% A or SA) understand the use of the Progression Matrix for assessing language skills across grades I-V.
50. While still positive, teachers express slightly less confidence in using new assessment tools like performance tasks and self-assessment (72% A or SA).
51. 74% of teachers agree or strongly agree that they were trained on developing and using rubrics for assessing language skills.
52. The training program has successfully covered various aspects of assessment techniques aligned with SNC guidelines therefore, teachers feel confident in their ability to use new assessment procedures and understand progression matrices.
53. There's a strong focus on assessing both cognitive and affective domains in language learning, while teachers generally feel prepared to use new assessment

tools, this area shows slightly lower confidence compared to others (Table No. 4.14)

54. There's strong agreement (81% A or SA) that new pedagogical practices were added to the training.
55. 75% of teachers agree or strongly agree that the training included skills for utilizing textbooks.
56. 75% of teachers feel the training enhanced pedagogies related to listening, speaking, reading, and writing skills.
57. 68% agree or strongly agree that they were trained in using web-based resources for teaching English.
58. 77% of teachers agree or strongly agree that new teaching strategies like jigsaw reading and concept maps were part of the training.
59. While still positive, there's less strong agreement (58% A or SA) that the training fulfills all current pedagogical needs of English Language teachers.
60. 70% agree or strongly agree that training related to editing and notebook checking was included, but this area shows slightly lower agreement compared to others.
61. The training program has successfully introduced new pedagogical practices and teaching strategies and there's a strong focus on practical skills like textbook utilization and language skills development through the integration of web-based resources in the training reflects an awareness of modern teaching tools. While the training covers a wide range of areas, some teachers feel it may not fully address all their pedagogical needs (Table No. 4.15).

62. The most pressing concern of the teachers appears to be the provision of technical resources for trainees, suggesting that many teachers may lack the necessary tools for effective online learning.
63. There's a significant desire for more frequent training, with many teachers suggesting bi-annual sessions and a notable portion of teachers prefer face-to-face training over online methods.
64. Some teachers feel the need for more training related to real-life language situations, indicating a desire for practical, applicable skills, while not the most frequent suggestions, there are requests for more focus on specific language skills like vocabulary building, grammar, and pronunciation.
65. Some teachers feel the need for longer training periods, on the other hand, there's recognition of the need to tailor training to different socio-economic backgrounds of learners.
66. The online training program seems to face challenges related to technical resources and possibly accessibility for some teachers because there's a demand for more frequent and possibly longer training sessions. Similarly, some teachers prefer traditional face-to-face training methods over online approaches, however, there's a desire for more practical, real-world application in language training and the current focus on specific language skills may need some adjustment (Table No. 4.16).
67. The most significant issue appears to be a lack of frequent communication between trainers and trainees, suggesting that the online format may be hindering effective interaction.

68. A notable portion of respondents identified a lack of technical facilities as a missing aspect, indicating that some teachers may struggle with the technological requirements of online training.
69. Some teachers feel that the duration of the training is insufficient, suggesting that more time may be needed to cover the content effectively.
70. A small but notable percentage of respondents mentioned issues with the availability of training content, suggesting that access to materials may be a challenge for some.
71. Technical infrastructure and support appear to be inadequate for some participants.
72. The current duration of the training may not be sufficient to cover all necessary content effectively while, the online format struggles to replicate the benefits of physical interaction in traditional training settings (Table No. 4.17).
73. The overwhelming demand for more activities suggests that teachers want a more hands-on, practical approach to their training. Similarly, there's a significant interest in incorporating more multimedia use in the training, indicating a desire to leverage technology in teaching, as a notable portion of respondents recognize the importance of soft skills in teaching, suggesting a need for training beyond just subject knowledge.
74. The teachers request for more focus on teaching vocabulary highlights a specific area where teachers feel they need additional support showing interest in learning about new pedagogies, indicating that teachers are open to innovative teaching methods. Similarly, the suggestion for case study-based modules shows a desire for training that relates directly to real classroom situations with requests for

modules on time management and the teacher as a role model indicate an interest in broader professional development topics (Table No. 4.18).

5.2.7 Triangulation matrix of input evaluation

75. It can be inferred that the training was largely successful in conveying the alignment between SNC and the training modules, new assessment techniques and pedagogies were well-received and effectively taught, however, there are gaps between perceived and actual preparedness in some areas, particularly in practical implementation. Moreover, technical resources and follow-up support are needed and integration of technology in teaching was not sufficiently covered while there's a need for more practical activities and better communication during training (Table No. 4.19).

5.2.8 Findings related to research question 6 (Process Evaluation)

76. Students recognize the use of new teaching styles and techniques like jigsaw reading and concept maps.

77. There's a strong focus on encouraging frequent English speaking in class.

78. Students perceive a significant emphasis on critical thinking in their English classes.

79. While speaking is strongly emphasized, other skills like listening and writing may need more attention.

80. There's a notable reliance on textbook teaching, which may limit exposure to diverse materials.

81. Regular instruction in the areas of teaching of vocabulary and grammar is well-perceived by students.

82. Students generally agree that their English lessons involve many activities.

83. The English teaching practices are generally well-received by students, with high agreement on most aspects as teachers are successfully implementing some innovative teaching methods and focusing on critical thinking skills and there is a strong emphasis on spoken English, which is positively perceived by students while many aspects of language learning are covered, writing activities seem to be less prominent. Despite the use of new teaching styles, there's still a heavy reliance on textbook-based instruction (Table No. 4.20).

5.2.9 Triangulation matrix of process evaluation

84. There's full convergence between the teachers' questionnaire results (M=3.9 out of 5) and the master trainer's interview. (Table No. 4.21).

85. The training successfully communicated the alignment between the Single National Curriculum (SNC) and the training modules, while Partial convergence is observed where teachers rated the aspect of training on knowledge and skills relatively high (M=3.6), the master trainer felt that more time could have been spent on these areas.

86. The area of the training of critical awareness and adaptability also indicates partial convergence. Teachers' ratings (M=3.6) suggest moderate confidence, but the master trainer's comment implies that more support may be needed for practical implementation.

5.2.10 Findings related to research question 7 (Product Evaluation)

87. Students perceive that their English classes cover various aspects of citizenship education, including ESD, global citizenship, and ethics.

88. There is a particularly strong emphasis on teaching ethics and good citizenship in English classes.

89. A high percentage of students (90% agree, 65% strongly agree) recognize the teaching of global citizenship education in their English classes.
90. Education for Sustainable Development is well-integrated into English classes according to student perceptions.
91. The similar mean scores across all three areas suggest a balanced approach to citizenship education.
92. Citizenship education is effectively integrated into English language teaching therefore, students are highly aware of and positively perceive the inclusion of citizenship topics in their English classes. Similarly, there's a strong emphasis on ethical education and good citizenship within the context of English language learning. However, global perspectives and sustainable development concepts are successfully incorporated into English lessons (Table No. 4.22).
93. A substantial majority of students (46%) report that their teachers inform them about lesson-related websites.
94. 46% of students agree or strongly agree that teachers provide information about lesson-related websites (Table No. 4.23).
95. Teachers are widely perceived to be implementing new assessment techniques and practices and there's a high level of student awareness and agreement about these new teaching and assessment methods as performance tasks and rubrics are the most recognized new practices. However, regular feedback through notebook checking is common and teachers are engaging students emotionally by asking about their feelings towards lessons (Table No 4.24).

96. There is a significant difference between the opinion of teachers and students regarding practicing of newly learned pedagogies in the class of English for grade-V students.
97. Overall mean score on both the questionnaires was the same (4.0) which shows agreement from both teachers and the students about classroom practices.

5.3 Discussion

Main focus of this study was to evaluate the success of online teacher training programme for implementation of Single National Curriculum, 2021. Among several models of programme evaluation, CIPP model by Stufflebeam (2017) was used for this purpose. This model presents comprehensive method for evaluating a training programme by going through Context, Input, Process and Product involved in an educational training programme, hence CIPP. As compared to other evaluation programmes, that can be considered appropriate for corporate training evaluation (Kirkpatrick, 2006) or its other supplementary models (Philips, 1998), or similar models like Kaufman's five level model (Deller, 2021), CIPP model is used mostly for educational training programme evaluation (Abdul, et al., 2020).

After the approval of Single National Curriculum (SNC) for classes I-V for the academic session 2021-2022, an online teacher training programme was carried out by Quaid-e-Azam Academy of Educational Development (QAED) in Punjab. More than for hundred thousand Primary School Teachers (PSTs) and Elementary School Teachers (ESTs) from public and private sectors were given a three-days online training. The training modules were segregated in three categories as Science, Math and Arts. Among the primary school teachers who were included in the Arts category, those who took part in the training of teaching of English subject to the students of class five, were subjects of

this study. Having an international scope and importance, English language textbooks, there teaching and teacher training is very important for both the teachers and the students. Through different training programmes, teachers become familiar with new pedagogies, upgrade their knowledge and their ability to transfer the subject matter to the students is enhanced. As the Single National Curriculum (SNC) is designed to move towards students centered curriculum, content and pedagogies, from traditional teacher centered approach, this paradigm shift could only be implemented through training of concerned teachers.

However, due to prevailed COVID-19 lockdown and allied circumstances, instead of a face-to-face training, and online Web 2.0 model of training was adopted in which the participants were to take part in this training online from their respective home place. In this context, it was even more important to evaluate this training programme in terms of its successfulness related to the modules of training as well as the mode of training.

Contrary to the proposed training duration of six days, the online training duration was limited to one-day for each subject area that resulted in affecting complete alignment of the content of training modules with the guideline provided by National Curriculum Committee (NCC), this aspect is noted by Mordica & Nicholson-Tosh (2013). The trainees of the online training programme got updated knowledge and skills during their training, related to competencies, standards, benchmarks, and SLOs suggested in Single National Curriculum, 2021. These areas were partially reflected through the content of the training modules and were disseminated to the participants of the training programme; hence the training was successful in this regard. The training goals, objectives, and expected competencies were Clearly communicated to all trainees to ensures they understand the purpose and intended outcomes of the training. To give roadmap of the training, trainees

were provided with a training curriculum and schedule that outlined the forthcoming content, activities, and assessments. To allow the trainees to prepare and review the main ideas of training content beforehand, they were distributed relevant training materials, resources, and references. Feedback sessions, and progress reviews were a regular part of training to monitor the level of understanding of the trainees to assess their learning progress. Trainees were encouraged to actively participate in discussions, activities, and knowledge-sharing to reinforce the training guidelines. All these aspects of the alignment of curriculum guidelines with a training programme are pointed out in theory by Gonzales, et al. (2012).

English language teachers gained knowledge in terms of their being critically aware, self-directed, reflective, and analytical, and had the ability to adapt to the Single National Curriculum 2021 which was verified by the opinion of students in this regard and rating of classroom observation checklist. In theory, Alsaleh (2020), is of the opinion that critical awareness is recognized as one of the most important thinking skills and one of the most important indicators learning quality. Similarly, being analytical needs to be incorporated into the curriculum training and teaching approaches and so that they can be sequenced at school. Technology based online training might promote such skills. Teaching approaches taught in this training may pave the gap in teaching skills in terms of being self-directed and reflective.

One of the research questions of this study was related to trainee teachers' opinion about practicing new pedagogies and assessment techniques which yielded positive opinion from the respondents regarding learning of these skills in their training and practicing the newly learned skills while English language to students of Grade V. In

research, Slaughter and Cross (2021), Rust (2017), Singh, et al. (2022) have also pointed out the similar results in their studies. According to Singh, et al. (2022), teachers had a positive opinion about learning and practicing new pedagogies and assessment techniques in their training as they demonstrated good awareness and mastery of different assessment strategies, including alternative, formative, and summative assessments. Similarly, research results of Slaughter and Cross (2021) indicated that teachers recognized the difference between traditional, standardized exams and alternative assessments that focus on the learning process and higher-order thinking skills and they were able to incorporate a variety of alternative assessment strategies in their English language classes, such as observations, self-assessments, peer assessments, and portfolio assessments as they viewed these assessment techniques more effective in identifying students' learning strengths and weaknesses by successfully applying these new pedagogies and assessment techniques in their Grade V English language classes. These studies also indicated that teachers found new assessment techniques helped them to engage students more actively in the learning process. Hence, the results of this indicate that the teachers had a very positive view of the new pedagogies and assessment techniques they learned and were able to effectively implement them in their Grade V English classes, leading to improved student learning.

All the five interviewees were highly qualified and well experienced in teacher training and have a long history of collaboration with institutes like QAED, British Council regarding conduct of teacher training both in face to face and online mode. They are well equipped with latest web and online skills and use of technological resources for training purpose. They are also well versed in their subject areas and have expertise in communication skills. They have been preparing training modules and presentations for different levels of teacher training. In this perspective, the content of training modules was

appropriate and almost in-line with the curriculum guidelines, as observed by Tayyab, et al., (2022).

New Pedagogical Methods were instructed with emphasis on teaching by doing during the training sessions. Teachers were updated in getting knowledge and practice about new assessment techniques were instructed like scoring rubrics and performance tasks. Ideas of global citizenship education were part of the training module. Keeping the training coherent with the guidelines by Single National Curriculum documents, use of notebook for feedback was taught. Zaman, et al., (2021) also are of the same view in terms of successful implementation of Single National Curriculum.

However, the duration of the training was short as compared to proposed six (6) days training by Single National Curriculum committee. All the training modules were appropriate and in accordance with the Single National Curriculum guidelines but they need to be updated and more content related to textbook teaching as suggested by Irfan (2021). As the duration of training was short, there could have been more modules included in the training if it had appropriate duration. Moreover, as observed by Rauf, Ayub & Batool (2022), a more time consuming pre service training is suggested.

There are advantages and disadvantages of online training that include less and unequal opportunity for the trainees to equally interact with the trainer. Although it can be got while being at home, it requires technical resources like fast speed internet, a laptop to get full benefit. In the future, and blend of face-to-face and online training should be adopted. Overall, this teacher training programme was successful in achieving its goals as concluded by Raja and Wei (2014) also. Nonetheless, teachers faced some problems while participating the training online from home which, some other research work has also

indicated, such as Vicky (2016) Mandukwini (2016) and (Alsubaie, 2016; Patnakar, 2013). Interview data provided additional information as pointed out in previous research (Altun, & Yucel-Toy., 2015; Jemberie, & Awan., 2021; Shah, 2019). Follow-up study and mentoring of the trainees should be carried out so that Single National Curriculum can be fully implemented in the classroom of English. Moreover, all the PSTs who completed the online training should be evaluated and their teaching should be assessed. Results of such follow-up and evaluation should be used to update the training modules and content of training.

5.4 Conclusions

The findings of this study yielded following conclusions;

5.4.1 Context evaluation

1. The training module partially aligns with the SNC document, with a strong focus on Writing Skills and Oral Communication Skills, however, there are significant gaps in the training module's coverage, particularly in Formal and Lexical Aspects of Language and Appropriate Ethical and Social Development. The depth of coverage for the addressed benchmarks is insufficient, potentially leading to incomplete teacher preparation, resultantly, the training module's focus on specific language elements may result in an imbalanced implementation of the SNC benchmarks. Similarly, Critical areas such as communication skills, writing structures, and punctuation are underrepresented in the training module. The uneven distribution of content coverage in the training module might have led to an imbalanced implementation of the SNC and the training module may not

adequately prepare students for all aspects of the curriculum as outlined in the SNC document.

5.4.2 Input Evaluation

2. Teachers feel informed about SNC and its alignment with the training, however, there's a perceived need for more extensive or specialized training modules as the current module, while valuable, may not be comprehensive enough to cover all SNC guidelines for English teaching.
3. The training program has successfully covered many essential aspects of English language teaching as there are clear areas of strength in core language skills, which form a solid foundation for English instruction but some areas, particularly those involving higher-order thinking (literary analysis) and practical application (social communication), need significant improvement. Nonetheless, the training program has effectively communicated SNC benchmarks, aligning with curriculum standards.
4. The training program has effectively enhanced teachers' perceived competencies in teaching various aspects of English language as teachers feel well-prepared to address both language skills and broader educational goals like ethical development and critical thinking. However, while global perspectives are included, there may be room for strengthening these areas in the training. Resultantly, the training program have achieved a good balance between developing technical language teaching skills and broader educational competencies.
5. The core design of the training program is strong, with clear objectives and participatory components, however, the shift to online training has been met with

mixed results, presenting both advantages and challenges. The duration of the training is a significant area of concern that needs addressing. While trainers are generally seen as competent, the online format may be limiting effective communication. Similarly, the technical infrastructure for online training may not be uniformly available to all participants.

6. The training program has effectively enhanced teachers' perceived competencies in using a variety of assessment techniques for English language teaching making the teachers feel well-prepared to align their assessment practices with SNC guidelines by inclusion of the affective domain assessment techniques is a notable strength of the program. While new assessment tools are covered, there may be room for more practical training in this area.
7. The training program has effectively introduced teachers to new pedagogical practices and strategies for English language teaching and there is a good balance between traditional (textbook-based) and modern (web-based) teaching approaches in the training as the program seems to cover core language skills comprehensively. While generally successful, there may be room for improvement in addressing all pedagogical needs of English Language teachers and students.
8. The online training program, while likely necessary, especially during pandemic times, faced several challenges in implementation and acceptance, there's a clear need for better technical support and resources for trainees as the frequency and duration of training sessions may need to be reconsidered. Similarly, the content of the training could benefit from more practical, real-world applications. Hence, there's room for improvement in addressing the diverse needs of teachers and their students.

9. The effectiveness of the online training program might have hampered by communication challenges and technical limitations which posed as a barrier to full participation for some teachers, therefore, the program may need to be extended or restructured to allow for more comprehensive coverage of content. The online format, while necessary in some circumstances, could not fully replicate the interactive benefits of face-to-face training, so, there is room for improvement in the provision and accessibility of training materials.
10. The online teacher training program needs to shift towards a more practical, activity-based approach as there is a clear need to incorporate more technology and multimedia elements into the training such as soft skills development, that should be a key component of future training modules. Similarly, the program should include more focused modules on specific language teaching skills as teachers are interested in innovative pedagogies and real-world applications, suggesting a need for more dynamic and relevant training content.
11. The training was largely successful in conveying the alignment between SNC and the training modules, new assessment techniques and pedagogies were well-received and effectively taught, however, there are gaps between perceived and actual preparedness in some areas, particularly in practical implementation. Moreover, technical resources and follow-up support are needed and integration of technology in teaching was not sufficiently covered while there's a need for more practical activities and better communication during training.

5.4.3 Process Evaluation

12. Although, the teacher training program has successfully influenced classroom practices in many areas and the teachers are effectively balancing traditional and

new pedagogical methods, there is a need for more emphasis on certain language skills and assessment techniques. Moreover, the integration of global perspectives and citizenship education in English classes is a notable success. However, while progress is evident, there's still room for improvement in several areas of English language instruction.

5.4.4 Product evaluation

13. The English teaching practices have successfully incorporated innovative techniques and critical thinking skills as there is a positive focus on developing students' speaking skills and confidence in using English which has led to the balance of language skills could be improved, particularly in writing activities. While new teaching styles are being used, there's still room to reduce reliance on textbook-only instruction. However, students generally have a positive perception of their English classes, indicating successful implementation of many aspects of teacher training.
14. Teachers have effectively balanced language instruction with important citizenship concepts and students are gaining exposure to crucial global and ethical issues through their English lessons because a consistent high scores across suggest a well-rounded approach to citizenship education. The incorporation of these elements aligns well with modern educational goals of producing globally aware and ethically conscious students.
15. Teachers appear to have effectively integrated web resources into their teaching, as perceived by a large majority of students, resultantly, the use of web resources may be contributing to increased student engagement in lessons. However, despite the

overall positive response, there's still room for improvement, as indicated by the 24% of students who disagree and the 12% who are neutral.

16. Teachers appear to be successfully implemented new assessment and teaching strategies aligned with modern educational practices as students are highly aware of and responsive to these new methods and there is a strong emphasis on performance-based assessment and clear evaluation criteria like use of rubrics. Teachers are maintaining a balance between formal assessment and regular feedback.

5.4.5 Successfulness on Online Training Programme

The online teacher training programme was partially successful in aligning the SNC guidelines with the content of the training modules. Same trend of partial successfulness in materializing the training programme was evident by the opinion of the trainee teachers that resulted in lack in full implementation of the new pedagogies and related knowledge and skills in the English classroom. Similarly, the process phase of the training programme could not be considered fully successful, as many components of SNC were not being totally practiced in the English lessons. However, according to the students' opinion, they had started experiencing new pedagogical and assessment practices in their English lessons, not up to the expected level though, leading to the conclusion that the product phase was also partially successful. Although training programme of Primary School Teachers of English language successfully incorporated some of the SNC guidelines in training module, transferred to the teachers during training, which they implemented in their classroom practices and the students opined those practices to be experienced by

them, there is a need of improving the effectiveness of the programme through inclusion on new segments in training and perpetual follow up of the programme.

5.5 Recommendations

In the light of conclusions, it is recommended that;

1. Teacher training exclusively for English language teachers should be organized having time span of at least one week.
2. Newly developed modules of training of English language teachers should be included in the training having full coverage of SNC guidelines.
3. A hybrid or blended mode of training including Online and face-to-face training should be adopted to have better results of training.
4. QAED should conduct a comprehensive follow up study of Online Training of English Teacher on Single National Curriculum, to determine its effectiveness in terms of pedagogical practices adopted by the teachers and quantitatively measurable students learning outcomes
5. Teacher training guides for English language teachers should be prepared and disseminated to the teachers for reference and practice purposes.
6. English language teachers should be facilitated with technological resources for helping them in teaching listening and speaking skills to the students.
7. Language labs should be set up at primary level to develop speaking and listening competency in primary level students.

8. Teacher training and studies on pedagogical practices of English language teachers should be monitored and followed periodically so that benefits of teacher training can be gained at national level.

5.6 Suggestions for Future Research

1. Although, the research design, and data collection techniques adopted in this study were considered appropriate to probe research questions of this study, there is need to do more research on this area to gain more insight to the Single National Curriculum (SNC), its content, implementation, training, pedagogies, assessment, and results of the students who have been taught newly adopted English textbooks at primary and secondary level.
2. With the inclusion of upper elementary and secondary classes in the National Curriculum after 2021-22, there should be more research to evaluate successful implementation of National Curriculum at these levels.
3. A need analysis involving teachers of English for upper elementary and secondary levels should be conducted to propose better, upgraded and need based training programmes.
4. Keeping the recommendations based on results of this study in view, the review of Single National Curriculum English textbooks should be carried out.
5. Similarly, results of formative and summative assessment of English across primary and secondary level should be compared with the SNC objectives to determine effectiveness of Single National Curriculum implementation.

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Programs.

APPENDIX A
OPINION OF ENGLISH LANGUAGE TEACHERS ABOUT ONLINE
SNC TRAINING

Dear sir/mam! Assalaamu Alaikum,

Please spare 10-15 minutes of your precious time to fill out this questionnaire. Your valued responses will be used totally for research purpose, therefore, please do not give your personal information in response to any question.

Regards.

Instructions:

Please Tick (√) the appropriate boxes only.

Section A: Professional Information

1- Please tick (√) your gender.

Male Female

2- What is your age?

26-32 Years

33-39 Years

40-46 Years

47-53 Years

54-60 Years

3- How much Experience do you have in Teaching English at Primary Level?

06-10 Years

11-15 Years

16-20 Years

21-25 Years

More than 25 Years

4- What is Your Qualification? _____

5- How many English Teacher Training Programs have you participated in, during your service? _____

6- What was the longest training program you participated? (Only mention number of days of the training.) _____

Section B: Opinion about Online Training on SNC

Following are the statements about online SNC Training. There are five boxes against each statement. Please read every statement carefully and (√) the appropriate box according to your opinion as per following scale; Strongly Disagree (SDA), Disagree (DA), Neither Disagree or Agree (NDA), Agree (A), and Strongly Agree (SA).

		SDA	DA	NDA	A	SA
A- Alignment of SNC with Training Module						
A1.	This training was imparted in the light of the vision of 'One Nation One Curriculum'.					
A2.	The training modules had sufficient content for learning new pedagogies according to SNC.					
A3.	Participants were introduced comprehensively about nature and scope of SNC					
A4.	Alignment of different components of SNC and training were elaborated to the participants					
A5.	Some components of SNC are not fully included in training					
A6.	One module for all aspects of teaching English is not sufficient to cover all SNC guidelines					
A7.	Training modules for teaching of English to class I-II and III-V should have been developed separately					
B- Knowledge and skills related to competencies, standards, benchmarks, and SLOs.						
B1.	Trainees were taught how to teach of Oral Communication skills					
B2.	Teaching of pronunciation, stress patterns and intonation were included in training					
B3.	Training related to teaching of using appropriate formal and informal communication in different social settings					
B4.	Teaching of comprehension to students through different tasks to understand variety of texts was part of training.					

B5.	Training related to teaching students how to analyze literary text to seek information was imparted.					
B6.	Training modules included ways to teaching enhancement in vocabulary.					
B7.	Teaching of grammatical and lexical aspects of English language were part of training.					
B8.	Teaching of creative writing was imparted in training.					
B9.	Training included ways to learn writing fluent, accurate, focused, and purposeful English.					
B10.	Trainees were explained about benchmarks of learning English for grade-V according to SNC					
C- Critically aware, self-directed, reflective, and analytical, and ability to adapt to the Single National Curriculum 2021.						
C1.	Teachers were trained regarding teaching the concept of Education for Sustainable Development (ESDA).					
C2.	Pedagogy related to global citizenship education was also a part of this training.					
C3.	I have become able to teach oral communication skills (listening & speaking) after this training.					
C4.	I can teach reading and critical thinking skills to English Language Students after this training.					
C5.	I can teach formal and lexical aspects of language on basis of this training.					
C6.	I have learnt new pedagogies to teach writing skills in this training.					
C7.	I have gained competency for teaching aspects of appropriate ethical and social development to the students.					
D- General aspects of training.						
D1.	All the components were designed to facilitate full participation of the trainees.					
D2.	Objectives of the training were clearly stated before start of each module.					
D3.	Duration allocated for training was appropriate.					
D4.	Pace of the trainer during training sessions was appropriate.					
D5.	Online training is better than face to face training.					
D6.	It is easy to participate in training from home than to go to training center.					
D7.	It is easy to clearly communicate with trainer in an online training.					

D8.	Online training provides better interactive environment between the trainer and trainees than face to face training.					
D9.	All the trainers were well versed and competent according to the needs of online training.					
D10.	I had all the required facilities like internet and laptop/mobile phone to easily participate in this training.					
D11.	This training has succeeded in achieving its objectives.					
E- New Assessment Techniques						
E1.	Teachers were trained how to develop and use Rubrics for assessing language skills.					
E2.	Training of new Assessment Procedures were part of this Training.					
E3.	Techniques to assess students' affective domain were included in the training.					
E4.	I can prepare and use marking scheme for assessing students' communication skill according to SNC guidelines.					
E5.	I understand the use of Progression Matrix for assessing students' language skills across grades I-V according to standards set in SNC.					
E6.	I can use new assessment tools i.e., performance tasks, self-assessment, interpretive exercises to assess students' language competencies i.e., performance tasks, self-assessment, interpretive exercises.					
F- New Pedagogies						
F1.	Training included component of skills for utilizing the textbooks.					
F2.	Training related to editing and notebook checking was also included in training sessions.					
F3.	Teachers were trained regarding use of web-based resources for teaching of English.					
F4.	This training fulfills all my current pedagogical needs as a Teacher of English Language.					
F5.	New Pedagogical Practices were added in this Training.					
F6.	Focus of the training was to enhance pedagogies related to language skills like listening, speaking, reading, writing.					
F7.	New teaching strategies like jigsaw reading and concept map were part of the training modules.					

55. Do you have any suggestion to improve online training for Teachers of English teaching at Primary level?

56. What aspects were missing in this training and how they can be included in future training programs?

57. Which modules should be added in future online training programs?

Thank you very much for your cooperation

APPENDIX B

OPINION OF STUDENTS OF GRADE-V ABOUT TEACHING OF ENGLISH

Dear sir/mam! Assalaamu Alaikum,

Please spare 10-15 minutes of your precious time to fill out this questionnaire. Your valued responses will be used totally for research purpose, therefore, please do not give your personal information in response to any question.

Regards.

Instructions:

Please Tick (√) the appropriate boxes only.

Section A: Professional Information

1- Please tick (√) your gender.

Male

Female

Section B: Opinion about Online Training on SNC

Following are the statements about online SNC Training. There are five boxes against each statement. Please read every statement carefully and (√) the appropriate box according to your opinion as per following scale; Strongly Disagree (SDA), Disagree (DA), Neither Disagree or Agree (NDA), Agree (A), and Strongly Agree (SA).

		SDA	DA	NDA	A	SA
1.	Your Teacher Teaches English in New Teaching Style					
2.	Your teacher keeps teaching from the textbook only					
3.	There are a lot of activities taught in your English lesson					
4.	Teacher takes test on English in new style					
5.	You are learning more language skills like listening, speaking, reading, writing.					
6.	You are taught about Education for Sustainable Development (ESDA).					
7.	You are taught about global citizenship education during your English class					
8.	Teachers use Rubrics to test your learning.					

9.	Teacher checks your English Notebook regularly and gives feedback					
10.	Teacher uses jigsaw reading and concept map in your English Class					
11.	Teacher asks you questions regarding how you feel about a lesson					
12.	Teacher tells you about the websites related to your lesson					
13.	Teacher teaches you how to talk frequently in English					
14.	Your English lesson includes listening practice also					
15.	Your teacher teaches you about critical thinking in your English class					
16.	You are taught grammar and vocabulary regularly					
17.	There is a lot of writing activity in your English class					
18.	Your teacher teaches you ethics and good citizenship in English class					
19.	You are given Performance Tasks exercise in English class					

Thank you very much

APPENDIX C

SEMI-STRUCTURED INTERVIEW PROTOCOLS FOR MASTER TRAINERS

1. Alignment of SNC with Training Module:

- How well do you think the training content aligned with the vision of 'One Nation One Curriculum'?
- In your opinion, were all components of the SNC adequately covered in the training? If not, what was missing?

2. Knowledge and Skills Related to Competencies:

- How has the training improved your teachers' ability to teach oral communication skills?
- Can you describe how the training addressed the teaching of reading comprehension and critical thinking?
- How confident do you feel about your teachers' ability of teaching grammar and vocabulary after this training?

3. Critical Awareness and Adaptability:

- How has this training prepared your teachers to adapt your teaching methods to the new curriculum?
- What aspects of the training do you think will help your teachers become a more reflective and analytical teacher?

4. New Pedagogies and Assessment Techniques:

- Can you describe some new teaching strategies your teachers learned during the training?
- How has the training prepared your teachers to use new assessment tools like rubrics or performance tasks?
- What challenges do you anticipate for your teachers in implementing these new assessment techniques in their classroom?

5. Online Training Experience:

- How would you compare this online training experience to previous face-to-face trainings you've attended?
- What were the main advantages and disadvantages of the online training format?
- How did all the trainers manage to create an interactive environment in the online setting?

6. Overall Training Effectiveness:

- To what extent do you feel this training has prepared your trainees to implement the Single National Curriculum 2021?
- What aspects of the training did you find most valuable?
- Were there any areas you felt were not adequately addressed in the training?

7. Suggestions for Improvement:

- What additional modules or topics do you think should be included in future training programs?
- How could the online training experience be improved to better meet teachers' needs?
- What kind of follow-up support do you think would be helpful for the teachers after this initial training?

APPENDIX D

CLASSROOM OBSERVATION CHECKLIST

School Code: _____

Boys/Girls

Title of Lesson: _____

Observation Number: 1 2 3 4 5 6 Date: _____

Respond to each statement using the following scale:

1=Not observed 2=More emphasis recommended 3=Accomplished very well

	1	2	3
Teacher Teaches English using New Pedagogical Methods			
Teacher keeps teaching from the textbook only			
There are a lot of activities to perform by the students			
Teacher takes test on English using new assessment techniques			
Language skills like listening, speaking, reading, writing is taught appropriately			
Education for Sustainable Development (ESDA) is included in lessons			
Concept of Global Citizenship education is taught			
Teachers use Rubrics to test students' learning.			
Teacher checks English Notebook regularly and gives feedback			
Teacher uses jigsaw reading and concept map techniques			
Teacher asks questions regarding how students feel about a lesson			
Teacher tells the students about websites related to your lesson			
Teacher teaches how to talk frequently in English			
English lesson includes listening practice also			
Teacher teaches about critical thinking in English class			
Teaching of grammar and vocabulary are given appropriate time			
There is a lot of writing activity in class			
Teacher teaches ethics and good citizenship in during class			
Students are given Performance Tasks exercise in class for assessment			

APPENDIX E

CONSENT LETTER FOR PRINCIPALS AND PARENTS

Dear Parent/Guardian and School Principal,

Subject: **Consent for Research Participation - "Evaluating the Teacher Training Programme for Implementation of Single National Curriculum 2021"**

I am writing to request your permission for your child/student to participate in a research study conducted by Khalid Mahmood Shaheen from International Islamic University, Islamabad. This study aims to evaluate the effectiveness of the teacher training programme for implementing the Single National Curriculum 2021.

Study Details:

- Purpose: To assess how well teachers are implementing new teaching methods learned during their training.
- Procedures:
 1. Classroom observation of an English lesson
 2. A brief questionnaire for students about their learning experiences

Participation is voluntary, and you or your child may withdraw at any time without penalty. All information collected will be kept strictly confidential. No names or identifying information will be used in any reports or publications resulting from this study.

Potential Benefits:

- Contribution to improving teaching methods and curriculum implementation
- Opportunity for students to share their learning experiences

If you agree to your child's participation, please sign and return the attached consent form. If you have any questions, please contact the undersigned at 0304-2555679.

Thank you for considering this request.

Sincerely,

Khalid Mahmood Shaheen

Consent Form

I, _____ (parent/guardian name), give permission for my child, _____ (child's name), to participate in the research study "Evaluating the Teacher Training Programme for Implementation of Single National Curriculum 2021."

Parent/Guardian Signature: _____ Date: _____

I, _____ (principal's name), give permission for this research to be conducted in our school.

Principal's Signature: _____ Date: _____

APPENDIX F

CONSENT LETTER FOR MASTER TRAINERS

Dear Master Trainer,

Subject: Consent for Research Participation - "Evaluating the Teacher Training Programme for Implementation of Single National Curriculum 2021"

I am writing to invite you to participate in a research study conducted by Khalid Mahmood Shaheen from International Islamic University, Islamabad. This study aims to evaluate the effectiveness of the teacher training programme for implementing the Single National Curriculum 2021. As a master trainer, your insights and experiences are invaluable to this research.

Study Details:

- Purpose: To assess the effectiveness of the teacher training programme and its impact on curriculum implementation.
- Procedure: A structured interview lasting approximately 20-30 minutes.
- Topics: Your experiences with the training programme, perceptions of its effectiveness, and observations on curriculum implementation (a structured interview is attached).

Your participation is entirely voluntary, and you may withdraw at any time without any negative consequences. All information collected will be kept strictly confidential. Your name and any identifying information will not be used in any reports or publications resulting from this study.

Potential Benefits:

- Contribution to improving teacher training programmes and curriculum implementation
- Opportunity to share your professional insights and experiences

Potential Risks:

- Minimal risk of discomfort during the interview process

Data Protection:

- Interviews will be audio-recorded with your permission
- All data will be stored securely
- Data will be anonymized only in research outputs

If you agree to participate, please let me know through the contact number given at the end. If you have any questions or concerns, please don't hesitate to contact me at 0304-2555679. Thank you for considering this request. Your expertise is crucial to the success of this study and the ongoing improvement of our educational system.

Sincerely,

Khalid Mahmood Shaheen