

Critical Thinking Skills among the *Tes/ Pre-Service Teachers*

Sumati Muniandy³, Jasmine Jain¹, Ramesh Nair², Wan Sarah Haiina Wan Jusoh³, Shyielathy Arumugam³

¹School of Education, Faculty of Social Sciences & Leisure Management, Taylor's University, Malaysia, ²Academy of Language Studies, Universiti Teknologi MARA Research Fellow, Accounting Research Institute, Malaysia, ³Institute of Teacher Education Malaysia, Ipoh Campus

Corresponding Author Email: sumati8888@gmail.com

To Link this Article: <http://dx.doi.org/10.6007/IJARBS/v15-i3/25161> DOI:10.6007/IJARBS/v15-i3/25161

Published Date: 26 March 2025

Abstract

The process of critical thinking involves an intellectually rigorous method of actively and adeptly understanding, applying, analysing, synthesising, and/or assessing information acquired or produced through observation, experience, reflection, argument, or communication, serving as a framework for beliefs and actions. This approach to learning emphasises the importance of evaluating facts, assessing reality, and correcting inaccuracies to promote the emergence of new ideas. Nevertheless, comprehensive studies and educational assessments have revealed a troubling pattern among pre-service teachers: a deficiency in critical thinking skills. This shortcoming not only restricts their capacity for self-reflection and informed decision-making but also undermines their preparedness to effectively teach and model critical thinking in the classroom environment. Research objectives are to investigate the critical thinking ability among the pre-service teachers and examine ways to improve the critical thinking skills among the pre-service teacher. This study utilised simple random sampling and convenience sampling to collect quantitative and qualitative data. 77 respondents answered the questionnaire survey from the total population of 85. There were 8 participants who voluntarily took part in the interview. The analysis shows that pre-service teachers possess a very good level of critical thinking skills. It is, therefore, essential that critical thinking is included as a central teaching component in teacher training.

Keywords: Critical Thinking, Education, Teacher Training, Pre-Service Teachers

Introduction

In the current era characterised by rapid change and an abundance of information, the necessity for critical thinking has reached unprecedented levels. Skills in critical thinking empower people to evaluate information impartially, consider various viewpoints, and arrive

at well-founded conclusions. With the swift dissemination of misinformation and the emergence of intricate global issues requiring creative approaches, the importance of independent and logical thought has grown significantly (Bosica et. al, 2021).

The examination of critical thinking skills is essential, as these abilities form the foundation for effective communication, decision-making, and problem-solving. They enable individuals to tackle challenges in academic, professional, and personal realms by promoting rational thought, minimising biases, and enhancing the quality of judgments (Şentürk, 2021). In the realm of education, critical thinking empowers students to challenge assumptions and construct well-supported arguments. Within the workplace, it improves decision-making and problem-solving skills, resulting in more effective business strategies and innovation. Additionally, critical thinking plays a vital role in responsible citizenship. In a time when digital media and social networks prevail, the capacity to differentiate between credible information and misinformation is crucial for making informed choices. By focusing on the study and enhancement of critical thinking skills, individuals are better prepared to engage in meaningful conversations, assess evidence, and contribute to society in a more informed and rational way. Due to its importance in multiple facets of life, prioritising the development and improvement of critical thinking skills in education, professional training, and daily interactions is essential. This research intends to examine the different aspects of critical thinking, its uses, and methods for cultivating these vital skills in individuals (Amin et al., 2020).

The education sector must adequately prepare for the significant impacts and contributions that individuals can make to society. In the era of the Fourth Industrial Revolution, it is important to create high-quality jobs that can compete globally (Amin et al., 2020). The education sector is facing new challenges due to the rapid development of technology, information and communication (Amin et al., 2020). This growth has not only simplified our lives, but also posed particular challenges for educators, whose goal is to produce effective outcomes that demonstrate mastery of technology, information and communication, while fostering skills such as critical thinking. In the swiftly changing realm of education, critical thinking has become a vital competency for educators. This ability allows teachers to analyse, assess, and synthesize information, which in turn helps them cultivate dynamic learning environments and tackle intricate challenges in the classroom. For English language educators, this skill is especially important as it prepares them to navigate various linguistic and cultural landscapes, enhance students' analytical skills, and incorporate critical pedagogical methods. In Malaysia, the importance of critical thinking within teacher education is highlighted by national goals aimed at developing globally competent citizens and educators. Nevertheless, the degree to which pre-service teacher education successfully fosters critical thinking in future English language teachers is still insufficiently examined (Howard et. al, 2021) .

Programmes for pre-service teacher education aim to prepare aspiring educators with the essential knowledge, skills, and dispositions required for effective teaching. Critical thinking is frequently emphasised as a key competency evaluated throughout all courses, ranging from language pedagogy to curriculum studies. This holistic approach theoretically demonstrates an awareness that critical thinking spans across various disciplines, impacting all facets of teaching and learning. However, in practice, the development of these skills within pre-service teacher education is laden with difficulties, especially within the Malaysian

context. The focus on critical thinking within teacher education is in harmony with international movements aimed at equipping educators for classrooms in the 21st century. In the realm of teacher education, skills are demonstrated through reflective practice, instructional decision-making, and lesson planning. For those training to be English language teachers, critical thinking involves creating lessons that prompt language learners to analyse, question, and build understanding that goes beyond mere rote memorisation (Howard et. al, 2021).

In Malaysia, the theoretical incorporation of critical thinking into pre-service teacher education is widespread, with competencies in CT evaluated throughout different courses. For instance, students in pedagogical courses might be tasked with critically assessing teaching strategies, whereas those in language courses are pushed to scrutinise linguistic theories. Nonetheless, despite this integration, indications reveal that nurturing profound critical thinking abilities is a challenging endeavour. Pre-service teachers frequently find it difficult to move beyond superficial comprehension to advanced levels of thinking, underscoring a gap between the expectations set by the curriculum and the actual results achieved (Tan et al., 2018).

One factor contributing to pre-service English language teachers' difficulties in acquiring critical thinking abilities is their past educational background. Exam-oriented learning has long been a priority of Malaysia's secondary school system, despite its emphasis on meeting high academic standards. This method places more emphasis on learning facts and memorising information than it does on higher-order cognitive abilities like critical thinking and problem-solving (Bakir, 2015).

Research has repeatedly shown that Malaysian secondary schools place little emphasis on critical thinking. For example, Song et al. (2020) discovered that the national curriculum's strong emphasis on standardised testing fosters an atmosphere in which pupils are rewarded for memorising facts by heart rather than using their critical thinking skills. In a similar vein, Tan et al. (2018) noted that secondary school teachers are under tremendous pressure to finish the curriculum and get pupils ready for important tests, leaving little time for encouraging critical thinking. As a result, many students have inadequate CT abilities when they start pre-service teacher education programs, making them unprepared to handle the higher-order thinking demands of their training.

The education of aspiring teachers is significantly impacted by the secondary level's lack of preparedness. Pre-service English language instructors may find it difficult to complete assignments requiring analytical review or reflective practice if they lack a solid basis in critical thinking. For instance, individuals could find it difficult to evaluate the efficacy of instructional materials or critique educational practices. This disparity emphasises how urgently pre-service teacher education must fill the gap by giving aspiring educators the critical thinking abilities they were denied in secondary school (Song et al., 2020)

In light of secondary school education's shortcomings in promoting critical thinking, pre-service teacher education must assume the duty of filling this gap. It is not only an academic exercise but also a professional necessity for pre-service English language teachers to cultivate critical thinking skills. Lack of critical thinking abilities makes it more difficult for

educators to adopt reflective practices, develop creative teaching strategies, or successfully meet the varied requirements of their pupils (Howard et. al, 2021) .

The importance of critical thinking increases when it comes to teaching English. Teaching language entails more than just teaching vocabulary or grammar; it also entails giving students opportunity to interact meaningfully with the language. In order to support language learning and critical engagement, pre-service teachers must be able to create lessons that inspire students to enquire, deduce, and create meaning. For example, assignments like evaluating media messages, discussing current events, or analysing literary texts all need a high degree of critical thinking from both teachers and students (Tan et al., 2018).

Nevertheless, it is still unclear how well Malaysian pre-service teacher education programs promote critical thinking. Critical thinking has received little attention as a separate field of study in Malaysian teacher education research, which has mostly concentrated on broad pedagogical competences or subject-specific expertise. Furthermore, little empirical research has been done on how pre-service programs handle the particular difficulties that English language instructors have in cultivating critical thinking skills (Şentürk, 2021).

Theoretical Framework

Constructivist Theory

Constructivist theory, established within the works of Vygotsky (1978) and Piaget (1970), gives a perfect hypothetical establishment for this ponder. It sets that learning is a dynamic, helpful handle where people construct information through intuitive with their environment and others. Within the setting of educator instruction, constructivism emphasises:

- **Active Learning:**

Pre-service instructors lock in in intelligent and experiential exercises, such as lesson arranging and classroom discourses, to build their understanding of educating and basic considering.

- **Social Interaction:**

Learning happens inside a social setting, where collaboration with peers, educator coaches, and guides shapes basic considering improvement.

- **Scaffolding:**

Teachers provide support to trainee teachers and continuously exchange ideas with them in order to promote freedom and fundamental commitment.

By applying constructivist hypothesis, this study can investigate how pre-service teachers' encounters and intuitive in their programmes contribute to the development of critical thinking skills.

Critical Thinking

Critical thinking is the process of using the intellect to analyse, assess, estimate, and elucidate misleading information. Attention, classification, selection, and assessment are examples of mental processes that reflect the capacity for critical thinking (Valtonen et al., 2021). This encompasses a number of ideas, including aptitudes, behaviours, and cognitive and metacognitive capabilities, as well as personality traits, reasoning, and thinking. Furthermore, critical thinking calls for the use of abilities like analysis, synthesis, evaluation, and summarisation. According to Kholid (2021), critical thinking encompasses the capacity to solve issues and make well-informed decisions. The ability to assess the claims of others and the

capacity to comprehend and analyse an issue in order to find potential solutions are both crucial components of critical thinking abilities. The process of actively and skilfully understanding, applying, analysing, synthesising, and/or evaluating knowledge generated or received by observation, experience, reflection, reasoning, or communication as a guide to belief and action is known as critical thinking. It is a method of teaching that places an emphasis on analysing the facts, appreciating reality, and correcting errors in order to foster the growth of new ideas. Nevertheless, despite their potential, a number of variables, including a lack of ability, can hinder people from becoming more adept in analytical thought (Akayoglu et al., 2020).

The development of critical thinking abilities is crucial for aspiring teachers. These abilities are essential for both their own professional development and teaching their students. However, a worrying tendency among pre-service teachers has been revealed by thorough research and educational evaluations: a lack of critical thinking skills. This shortcoming not only prevents them from reflecting on themselves and making informed judgements, but it also makes them less prepared to teach and demonstrate critical thinking in the classroom (Polat & Aydın, 2020). Even while critical thinking is taught in teacher preparation programs, there is still a significant gap between the theoretical understanding of these abilities and their actual application. The problem at hand is made more complex by a number of factors, including the inconsistent quality of critical thinking instruction offered in teacher preparation programs, the emphasis placed on subject knowledge and standardised testing over sophisticated cognitive skills, and the lack of frequent and relevant opportunities for aspiring teachers to engage in critical thinking during their preparation (Akayoglu et al., 2020). Thus, the research objectives of the study are to investigate the critical thinking ability among the TESL pre-service teachers and to explore ways in which TESL pre service teachers adopted in improving their critical thinking skills. The research questions are as follows:

1. what is the TESL pre-service teachers' level of critical thinking skill?
2. how do the TESL pre-service teachers improve their level of critical thinking skill?

As a result, many new teachers are not equipped with the critical thinking abilities needed to successfully negotiate the complexities of modern education. Future educators frequently graduate with inadequate critical thinking abilities, despite the supposed need of critical thinking in education. This disparity results from teacher preparation programs that prioritise pedagogical expertise and subject-matter expertise over the cultivation of higher-order thinking. As a result, prospective educators could struggle to evaluate intricate instructional issues, critically evaluate their methods, and make wise choices in ever-changing classroom environments (Howard et al., 2021). This limitation restricts their capacity to encourage critical thinking in upcoming pupils in addition to impeding their own professional growth. Although critical thinking is emphasised in theoretical components of teacher preparation, prospective teachers frequently do not have the opportunity to put these abilities to use in actual classroom situations. In order to address this issue, it is crucial to acknowledge pre-service teachers' critical thinking abilities and how they develop them, as well as to look into effective strategies for enhancing these abilities in teacher education programme. This will make it possible for us to provide pre-service teachers with the resources they need to foster a culture of critical thinking in their future classrooms, which will eventually improve students' academic performance (Samaras et al., 2022).

Many aspiring teachers are unable to apply these abilities to their teaching practice because of the disconnect between theory and practice, which leads to a superficial knowledge of critical thinking. Teachers may not be equipped to handle the complexity of the current classroom because they are rarely given reflective practice and problem-solving exercises during their training (Sutiani et al., 2021). This makes the situation much more difficult. Pre-service teachers' critical thinking abilities are not consistently developed, and the outcomes differ significantly according to the calibre and emphasis of the teacher education program. While some programs may just briefly address these fundamental abilities, others may successfully include critical thinking into their courses. There are differences in how new teachers are prepared as a result of this discrepancy: some are prepared to encourage critical thinking in their pupils, while others are not (Akayoglu et al., 2020). Therefore, the study's research goals are to find out how well TESL pre-service teachers can think critically and to look into strategies for helping them do so.

The necessity for aspiring teachers to cultivate critical thinking abilities has drawn a lot of attention in the quickly changing educational landscape of today. Teachers are realising increasingly that effective teaching and learning depend on their capacity to interpret, assess, and synthesise material. This need is made worse by the complexity of the modern classroom, where teachers must constantly innovate and adapt to the varied demands of their pupils as well as the rapid improvements in technology. Aspiring educators can enhance their own analytical abilities and impart these vital skills to prospective pupils by following a sound curriculum that emphasises the development of critical thinking abilities. As a result, critical thinking skills development becomes a key component of teacher education programs, empowering students to approach problems in a critical and innovative way. Future teachers' educational experiences are significantly shaped by the range of cognitive skills and dispositions that are included in the concept of critical thinking (Erdoğan, 2020). According to the theoretical framework, critical thinking is an integrated strategy that calls on educators to cultivate the cognitive abilities and underlying attitudes necessary for sound decision-making and problem-solving. It is not just a collection of discrete skills. As stated in (Mwalongo et al., 2014), it is vital to understand the relationship between critical thinking skills and thinking dispositions, as contextual circumstances can considerably influence one's critical thinking ability. Additionally, by encouraging participation and creativity—two essential components of critical thinking—interdisciplinary initiatives, including those integrating digital technologies and the arts, can enhance this framework even more (Godley, et al., 2015).

For TESL (Teaching English as a Second Language) pre-service teachers in particular, critical thinking is a crucial skill in teacher education. It gives teachers the tools they need to critically assess data, make wise choices, and encourage critical thinking in their pupils. Critical thinking abilities, according to Halpern (2014), entail deliberate, self-controllable judgement that permits people to do interpretation, analysis, evaluation, inference, and explanation based on context and evidence. The ability to think critically allows TESL pre-service teachers to promote analytical reading, arguments supported by evidence, and cultural sensitivity in their classrooms, which puts them in a unique position to impact the education of the future generation (Wallen, 2022). Teachers must negotiate a variety of viewpoints and potential biases in instructional materials in multilingual and multicultural classrooms, therefore these abilities are essential (Demirtaş & Güneş, 2020). According to

Demirtaş and Güneş (2020), cognitive flexibility aids in addressing the challenges of instructing multicultural and multilingual students. Critical thinking aids in addressing potential biases in teaching materials and procedures as well as in sensitively navigating cultural variations, according to a different study by Michelot et al. (2022). When it comes to handling behavioural problems and successfully integrating technology in the classroom, teachers who possess excellent critical thinking abilities are better prepared (Khalid et al., 2021)

Furthermore, critical thinking for TESL pre-service teachers includes abilities like systematicity, intellectual curiosity, problem-solving, and open-mindedness. These characteristics encourage the development of critical literacy, foster student involvement, and improve professional competences (Michelot et al., 2022). For TESL pre-service teachers, critical thinking abilities are beneficial. The abilities provide individuals the capacity to assess various viewpoints, conduct unbiased information analysis, and reach well-reasoned conclusions. These abilities are essential for managing situations in the classroom and in the real world, minimising prejudices, and guaranteeing improved results (Alsaleh, 2020). Moreover, critical thinking fosters rational problem-solving and methodical analysis. It encourages flexibility and creativity in TESL pre-service instructors to tackle problems including integrating technology and handling a range of student demands (Demirtaş & Güneş, 2020; Alsaleh, 2020). Alsaleh (2020) mentioned that critical thinking fosters creativity and adaptability in addressing a variety of challenges by improving the capacity to analyse and synthesise information. This helps to make communication clearer and more effective, particularly in collaborative and interdisciplinary settings.

Critically thinking TESL teachers are more likely to develop into reflective practitioners. They promote both professional and personal growth by continuously evaluating and modifying their teaching strategies in response to feedback and self-evaluation (Bandura, 1994; Zed & Koomen, 2010). In his research, Wallen (2022) also discovered that critical thinking-driven reflective practices enable TESL teachers to continuously evaluate and enhance their instructional strategies, promoting professional development and intellectual curiosity. Similarly, critical thinking encourages intellectual curiosity and a dedication to lifelong learning, according to Alsaleh (2020). It enables people to actively pursue knowledge and practise introspection, both of which are essential for both professional and personal growth. In a similar vein, Celik (2021) claimed that critical thinking in education includes the capacity to pose complex queries, challenge the accuracy of data, and evaluate causes and supporting evidence. Developing introspective and adaptable teachers who can handle a variety of classroom situations requires these qualities. For TESL pre-service teachers, critical thinking is essential since it shapes their approach to teaching and motivates their pupils. Teachers who possess strong critical thinking abilities can help their pupils acquire comparable abilities, equipping them to handle challenging situations both within and outside of the classroom. Fundamentally, critical thinking skills enable teachers to develop into reflective professionals who possess strong analytical, evaluative, and decision-making skills in addition to being excellent English teachers (Erdoğan, 2020).

Methodology

This research was carried out using mixed method approach. The researchers administered the questionnaire survey which was then followed by a semi-structured interview. There were

77 pre service TESL teachers who were randomly selected out of the population pre service teachers 85 who answered the questionnaire and 8 pre-service teachers took part in the semi-structured interview using convenience sampling. The data obtained from the questionnaire was analysed using descriptive analysis and semi-structured interview was analysed using thematic approach. The questionnaire survey was adopted from the previous study (Ardi et al., 2023). The results of the questionnaire reliability test using the Cronbach Alpha formula a value of 0.93 was obtained in their study. Hence, one can infer that the questionnaire is a valuable tool for evaluating the critical thinking abilities of students. The interview questions were checked by an expert who has been active in the field of education.

Analysis and Findings

Table 1 shows the demographic of the sample.

Table 1

Demography Of the Sample

GENDER	FREQ
Male	18
Female	59

The sample of TESL pre-service teachers consisted of 77 participants, with a notable gender imbalance. A majority of the participants were female, totalling 59, while the remaining 18 were male. This significant difference in gender representation highlights the predominance of females in this group of pre-service teachers.

In terms of mean analysis, the researcher uses the classification table from (Shyielathy Arumugam, 2019; Jamil Ahmad, 2002; Mohamad Yazid Mohamad, 2017) which is shown below.

Table 2

Classification Mean

Score Mean	Interpretation of Score Mean.
1.00 to 2.33	Low
2.34 to 3.66	Moderate
3.67 to 5.00	High

(Arumugam, 2019; Ahmad, 2002; Mohamad, 2017)

Score mean from 1.00 to 2.33 indicates that mean value is at the low level. Score mean from 2.33 to 3.66 indicates that the mean value is at the moderate level and score mean from 3.67 to 5.00 indicates that mean value is at the high level. Referring to this indication, the findings of the research questions one was reported as below.

RQ1: What is the TESL pre-service teachers' level of critical thinking skill?

The analysis of critical thinking skills among TESL pre-service teachers, based on the survey data, reveals several key aspects related to problem-solving, analysis, and reflection on learning materials.

Table 3

Critical Thinking Skills among TESL Pre-Service Teachers

ITEM	STRONGLY DISAGREE	DISAGREE	AGREE	STRONGLY AGREE	MEAN
1. I can analyse the main issues regarding the learning material being studied.	0.00%	1.30%	84.42%	14.29%	3.13
2. I am able to reveal existing facts about the learning material.	0.00%	3.90%	76.62%	19.48%	3.16
3. I will always ask until I get it.	0.00%	9.09%	61.04%	29.87%	3.21
4. I can analyse questions according to the learning materials.	0.00%	2.60%	80.52%	16.88%	3.14
5. I will try to give the right response when the lecturer asks	0.00%	0.00%	66.23%	33.77%	3.34
6. I debate different points of view with my group mates to find the best solution.	0.00%	6.49%	63.64%	29.87%	3.23
7. After discussing with friends, I can distinguish between right and wrong opinions	0.00%	0.00%	61.04%	38.96%	3.39
8. I can choose reasons that are suitable, relevant to the problem, and systematic from the whole problem.	0.00%	1.30%	75.32%	23.38%	3.22
9. I use a variety of sources to research a problem or topic until I find the right answer.	0.00%	3.90%	58.44%	37.66%	3.34
10. I find it satisfying to keep trying to find solutions to difficult problems.	0.00%	7.79%	55.84%	36.36%	3.29
11. In practical and experimental activities, I can understand instructions easily.	1.30%	9.09%	68.83%	20.78%	3.09
12. Before sending assignments to lecturers, I double-check the work.	0.00%	0.00%	46.75%	53.25%	3.53
13. I try to find out information about the learning material well.	0.00%	1.30%	63.64%	35.06%	3.34
14. I try to find the right source of reading about the	0.00%	1.30%	55.84%	42.86%	3.42

problem/issue being studied.

15. I look for alternative answers, when there are answers to problems that do not yet have a strong enough theory of evidence.	1.30%	7.79%	66.23%	24.68%	3.14
16. I consider the situation and conditions as a whole regarding the answer to the problem I am looking for.	0.00%	0.00%	75.32%	24.68%	3.25
17. I can determine my own conclusions from the experiments conducted.	0.00%	6.49%	70.13%	23.38%	3.17
18. I try to be firm when drawing conclusions based on the circumstances.	0.00%	3.90%	72.73%	23.38%	3.19

A significant majority of TESL pre-service teachers feel confident in analysing the main issues of learning material, with 84.42% agreeing and 14.29% strongly agreeing (Mean: 3.13). This suggests that the cohort is well-equipped to dissect and understand the core elements of their learning content.

Most respondents believe they are capable of revealing existing facts about the material (76.62% agree, 19.48% strongly agree, Mean: 3.16). Furthermore, when it comes to persistent questioning until clarity is achieved, 61.04% agree, and 29.87% strongly agree (Mean: 3.21). This indicates a strong inclination towards thorough understanding through inquiry.

Engaging in debates to reach the best solutions is a common practice, with 63.64% agreeing and 29.87% strongly agreeing (Mean: 3.23). Additionally, after group discussions, a large proportion can distinguish between right and wrong opinions (61.04% agree, 38.96% strongly agree, mean: 3.39), indicating effective collaborative critical thinking.

Teachers are able to choose relevant and systematic reasons from various problems, with 75.32% agreeing and 23.38% strongly agreeing (Mean: 3.22), emphasising a logical approach to solving problems.

55.84% of respondents agree, and 36.36% strongly agree that they find satisfaction in solving difficult problems (Mean: 3.29), which reflects their resilience and commitment to finding solutions.

When faced with a problem or topic, many pre-service teachers use multiple sources to research and find the correct answer (58.44% agree, 37.66% strongly agree, Mean: 3.34). This demonstrates their ability to critically evaluate resources and synthesise information.

53.25% strongly agree they double-check their work before submitting it to lecturers (Mean: 3.53), which reflects a meticulous approach to academic work. Also, many find they understand practical and experimental instructions easily (68.83% agree, Mean: 3.09).

In addition, interview findings also showed that pre-service teachers have a clear understanding of critical thinking and its benefits. The excerpts are shown below. Participant 7 mentioned that,

"... critical thinking is about the ability to think independently and approach problems with a clear, open and rational mindset." (P7)

The assertion highlights that critical thinking encompasses the capacity to independently assess and analyse situations or challenges without being swayed by biases or inappropriate influences. It underscores the necessity of fostering an open and rational mindset, which entails being receptive to various viewpoints and employing logic and evidence to reach conclusions.

"It involves questioning, assessing evidence and considering alternatives..." (P6)

"It enables teachers to make informed decisions, adapt to diverse student needs, and navigate the complexities of the classroom environment." (P5)

This understanding implies that critical thinking entails not just problem-solving skills but also the capability to challenge assumptions and tackle issues with objectivity. It demands intellectual rigor and the bravery to form one's own opinions rather than depending exclusively on the views or biases of others.

In conclusion, the TESL pre-service teachers display strong critical thinking skills in various aspects, including analysing materials, engaging in discussions, conducting thorough research, and persisting through complex problems. These skills are fundamental for their growth as educators, preparing them to manage classroom challenges effectively and foster critical thinking in their future students.

RQ2: How do the TESL pre-service teachers improve their level of critical thinking skill?

From the interview, almost all the teachers were positive in taking various initiatives to improve their critical thinking skills. These are some of the themes derive from the teachers' responses.

Multitasking and Decision-Making

Some educators practise critical thinking in fast-paced settings by participating in tasks which require both multitasking and quick decision-making. Attempting to complete two or more activities at once is known as multitasking. People who are able to multitask and think critically in a fast-paced setting are able to manage several tasks at once.

"I have sought out opportunities to enhance my critical thinking skills by engaging in activities that require multitasking and complex decision making." (P3)

Reflective Practices

Reflective practice emerged as a core approach to improving critical thinking skills. For example, Participant 2 remarked,

"I have made reflective practice a cornerstone of my growth" (P2)

Reflective practice forces us to scrutinise the material, examine the underlying assumptions and consider alternative perspectives.

Professional Development

Several teachers actively sought professional development opportunities through workshops, courses, and peer discussions. Participant 2 noted,

"I have actively sought out diverse perspectives by engaging with a wide range of educational theories, attending professional workshops, and participating in discussions with peers and mentors." (P2)

This fosters the idea that through lifelong learning, however, in order to develop a critical thinking, we must never abandon to learn and confront different educational theories. This statement also indicates a desire for personal and professional growth. It is vital to seek out multiple angles by exposing ourselves to various educational frameworks, attending professional development seminars, and engaging in dialogue. An interpretation like that demonstrates a willingness to learn and to adapt. By actively engaging with different viewpoints, they demonstrate intellectual curiosity, a willingness to challenge their own beliefs and a desire to broaden their understanding — qualities that are essential for critical thinking and effectiveness in a professional environment.

On another note, *participant 5* said that,

"I have found that while I have participated in various activities designed to promote critical thinking, such as professional development workshops, they often lack practical applicability or follow-up support, making it difficult to see a tangible impact."

The statement highlights an important challenge in promoting critical thinking: the discrepancy between theoretical activities and their practical implementation. Activities such as professional development workshops are well-intentioned, but often do not achieve the desired results.

Habitual Intellectual Engagement

In addition to training and workshops, teachers also cultivate their reading habits and play chess. Participant 5 and 6 articulated as below,

"I seek diverse perspectives through reading, discussions, and professional development which challenges my assumptions and broadens my understanding." (P5)

"I have improved my critical thinking skills by playing chess, which teaches me to anticipate moves, analyse consequences, and adapt strategies and essential skills." (P6)

These pursuits demonstrate a blend of strategic thinking, intellectual curiosity, and a commitment to personal development. The first statement demonstrates a proactive approach to critical thinking by highlighting the significance of actively seeking out other viewpoints. To question their own opinions and increase their knowledge, the individual reads, has conversations, and participates in professional development activities. This shows a dedication to lifelong learning and receptivity to different points of view, two qualities that are essential to developing an all-encompassing and critical attitude. According to the second claim, playing chess strategically is linked to the growth of critical thinking. Chess players develop their ability to predict other players' moves, assess results, and adjust their tactics. In addition to enhancing their problem-solving abilities, these abilities show how strategic thinking may be used in a variety of real-world scenarios. Together, these assertions provide a thorough approach to fostering critical thinking via systematic practice and scholarly investigation. Nevertheless, *participant 4* cited this,

To be honest, I can't think of a single exercise that made me much better at critical thinking. I now see that I might not have actively looked for opportunities to hone this ability, and I should focus on it going forward."

The phrase expresses an understanding that, although critical thinking is a useful ability, cultivating it frequently calls for deliberate work. This realisation leads to a crucial conversation on why people may find it difficult to develop their critical thinking skills and how taking initiative might promote development. Critical thinking is a talent that needs intentional effort rather than being a natural aptitude. While attending seminars or taking part in organised activities might help introduce fundamental ideas, they are rarely enough on their own. The potential for significant change is left unrealised if opportunities to put these ideas into practice are not actively sought. Critical thinking, for instance, entails assessing assumptions, evaluating data, and drawing logical conclusions—skills that need to be regularly practiced in a variety of settings in order to become instinctive.

Proactive Attitude towards Lifelong Learning

A proactive approach to learning was apparent in all of the responses. Pre-service teachers showed a dedication to critical thinking, which is characterised by searching out different points of view, questioning presumptions, and investigating novel ideas. According to the study's findings, pre-service teachers had favourable opinions on teaching critical thinking. Some of the research findings from a review of the pertinent literature were comparable to this one. A study by Kizilhan and Demir (2022) and Valtonen et al. (2021) demonstrated a moderately good correlation between teacher candidates' attitudes towards teaching critical thinking and their performance on the critical thinking standards. The study by Saputro et al. (2020) likewise yielded a similar outcome. On the other hand, the study's findings differed from those of Khalid et al. (2021), who found that obstacles to encouraging the development of critical thinking skills in the classroom included issues with teachers' readiness to evaluate students' critical thinking abilities, a lack of relevant resources, and inadequate prior knowledge of critical thinking.

Discussion

The conclusions drawn from the quantitative and qualitative data offer a comprehensive picture of the critical thinking abilities and improvement strategies of TESL pre-service

instructors. Although the results show positive, a number of important insights point to potential problems and areas that require more thought. Based on their capacity to do research, analyse learning materials, and solve problems, the quantitative results show that TESL pre-service teachers have a solid foundation in critical thinking. An encouraging degree of engagement with critical thinking processes is suggested by the high mean scores across items including systematic reasoning (Mean: 3.22), group discussions (Mean: 3.39), and tenacity in problem-solving (Mean: 3.29). Though the mean score (3.09) was comparatively lower in experimental and practical situations, the results also indicate limitations in the practical application of these skills. This disparity calls into question how well critical thinking abilities translate from abstract talks to practical applications. Additionally, rather than indicating deeper cognitive engagement, the high agreement levels (e.g., 53.25% strongly agreeing they double-check assignments) may reflect superficial diligence. Although these behaviours are admirable, they might not adequately capture the complexity of critical thinking, which calls for not only adherence but also creative problem-solving and idea synthesis. The qualitative results show that pre-service teachers take an active approach to honing their critical thinking skills. A dedication to self-improvement is shown through pursuits like chess, contemplative practice, and interaction with different viewpoints. Though helpful, the dependence on organised seminars and professional development could indicate an externalised approach to skill-building, where pre-service teachers rely on official direction rather than encouraging self-motivation for personal improvement. Participants cited contemplative practice and multitasking as important tactics, for instance, but these methods need closer examination. While multitasking can be helpful in hectic settings, it can also impair critical thinking skills and dilute focus. Reflective practice requires a disciplined approach to challenging presumptions and successfully integrating feedback, yet it may be underutilised without the right scaffolding or guidance (Ma & Luo, 2021)

Tensions between Theory and Practice

One important theme that comes up is the gap between theoretical knowledge and real-world applicability. Although pre-service teachers clearly define critical thinking as including questioning, assessing the evidence, and taking alternatives into consideration, the quantitative results indicate that there may be variation in their capacity to consistently apply these concepts. For example, even though 75.32% of respondents say they take situational considerations into account (Mean: 3.25), this does not ensure that their judgements are sound or supported by in-depth research. This is tally with some of the participants' responses saying that they did not feel the depth of critical thinking skills even though they attended the related courses.

Broader Implications and Challenges

The results are consistent with previous research that emphasises favourable sentiments on critical thinking instruction (Kizilhan & Demir, 2022; Valtonen et al., 2021). They do, however, also highlight certain obstacles such as an excessive dependence on outside sources and the requirement for improved critical thinking integration into experimental and practical work. This is in line with Khalid et al. (2021), who contend that instructors' capacity to foster critical thinking in the classroom is hampered by a lack of resources and prior knowledge.

Furthermore, even when pre-service teachers show resiliency and a desire to do better, their approaches might not be comprehensive enough to handle the challenges of teaching in a

classroom. For example, playing chess and interacting with people from different backgrounds are beneficial, but they need to be combined with more intentional, situation-specific teaching strategies. verse and dynamic educational environments.

Conclusion, Implication, and Recommendation

Building an educational system that prioritises analytical and reflective learning requires encouraging teachers to think critically. To guarantee that teachers are prepared to foster these abilities in their kids, it is imperative to address systemic issues and incorporate critical thinking into teacher preparation and professional development. Teachers must be able to think critically in order to assess classroom dynamics, modify their teaching methods, and effectively assist a varied student body. Several studies support critical thinking as a core teaching ability and highlight that teachers must demonstrate these abilities in order to help students develop a similar mentality. Despite this widespread recognition, a critical evaluation reveals that the value of critical thinking is not always mirrored in practical training, despite its widespread theoretical recognition. There may be a disconnect between theory and practice since teacher preparation programmes frequently place more emphasis on pedagogical abilities and subject matter than on critical thinking. Developing pre-service teachers' critical thinking skills is an important but challenging endeavour. Even though research shows how important critical thinking is for teachers, current approaches to cultivating and gaining access to these abilities frequently fail due to problems with consistency, cultural relevance, and assessment reliability. Teacher education programs must take a more comprehensive and culturally aware approach to teaching and evaluating critical thinking if they are to effectively prepare teachers for the complex problems of the classroom. Subsequent investigations have to concentrate on resolving these constraints, specifically by means of longitudinal studies, integrating varied cultural viewpoints, and creating inventive evaluation techniques that precisely capture the subtleties of critical thinking in learning environments.

The present study investigated the pre-service teachers' critical thinking abilities. The results may have applications in teacher preparation programme. Incorporating critical thinking abilities into teacher preparation programs is advantageous. In an educational environment that is becoming more complicated, it is crucial for training successful teachers. Future teachers need to be able to critically examine, assess, and synthesise material as they interact with various educational theories and methods. They can tackle the various obstacles that arise in the modern classroom thanks to this skill set, particularly when it comes to integrating technology and fulfilling the requirements of different students. Additionally, critical thinking-focused programs create a setting in which aspiring teachers can show their students how to use these abilities, which can boost learning outcomes and general student engagement. Therefore, it is essential that critical thinking be incorporated into teacher education courses as a core teaching component. This guarantees that graduates possess both the theoretical understanding and the practical abilities needed to promote critical thinking in their own teaching. The significance of critical thinking skills cannot be overstated, as they are vital for making well-informed decisions, effectively addressing problems, and managing the intricacies of contemporary life. In a time marked by swift technological progress, pervasive misinformation, and escalating societal challenges, the capacity for critical thought enables individuals to assess information impartially, differentiate between facts and opinions, and arrive at logical conclusions.

References

- Alsaleh, N. J. (2020). Teaching Critical Thinking Skills: Literature Review. *The Turkish Online Journal of Educational Technology*, 19(1), 21–37.
- Ary, D., Jacobs, L. C., & Razavieh (2002). *Introduction to Research in Education*. USA, Belmont Thomson Learning.
- Akayoglu, S., Satar, H. M., Dikilitas, K., Cirit, N. C., & Korkmazgil, S. (2020). Digital literacy practices of Turkish pre-service EFL teachers. *Australasian Journal of Educational Technology*, 36(1), 85-97.
- Amin, S., Utaya, S., Bachri, S., Sumarmi, S., & Susilo, S. (2020). Effect of problem-based learning on critical thinking skill and enviromental attitude. *Journal for the Education of Gifted Young Scientists*, 8(2), 743-755.
- Bakir, S. (2015). Critical thinking dispositions of pre-service teachers. *Educational Research and Reviews*, 10(2), 225-233.
- Bandura, A. (1994). Self-efficacy. *Encyclopedia of human behavior*, 4(1), 71–81.
- Bosica, J., Pyper, J. S., & MacGregor, S. (2021). Incorporating problem-based learning in a secondary school mathematics preservice teacher education course. *Teaching and Teacher Education*, 102, 103335.
- Celik, S. (2021). Teacher education program supporting critical thinking skills: A case of primary school teachers. *Amazonia Investiga*, 10(41), 188–198.
- Demirtaş, H., & Güneş, M. (2020). Problem-solving and critical thinking in teacher education. *Educational Studies Journal*, 15(2), 45–58.
- Erdoğan, F. (2020). The relationship between prospective middle school mathematics teachers' critical thinking skills and reflective thinking skills. *Participatory Educational Research*, 7(1), 220-241.
- Godley, A. J., Reaser, J., & Moore, K. G. (2015). Pre-service English language arts teachers' development of critical language awareness for teaching. *Linguistics and Education*, 32, 41-54.
- Halpern, D. F. (2014). *Thought and knowledge: An introduction to critical thinking*. Psychology Press.
- Howard, S. K., Tondeur, J., Ma, J., & Yang, J. (2021). What to teach? Strategies for developing digital competency in preservice teacher training. *Computers & Education*, 165, 104149.
- Kizilhan, P., & Demir, E. (2022). A Study on the Relationship between Teacher Candidates' Attitudes towards Teaching Critical Thinking and Critical Thinking Standards. *Turkish Online Journal of Educational Technology-TOJET*, 21(4), 1-18.
- Howard, S. K., Tondeur, J., Ma, J., & Yang, J. (2021). What to teach? Strategies for developing digital competency in preservice teacher training. *Computers & Education*, 165, 104149.
- Khalid, L., Bucheerei, J., & Issah, M. (2021). Pre-service teachers' perceptions of barriers to promoting critical thinking skills in the classroom. *Sage Open*, 11(3), 21582440211036094.
- Kholid, I. (2021). Berpikir Kritis dalam Pemecahan Masalah Matematika. *Jurnal Arrisalah*, 7(1), 96–108. <https://jurnal.staimifda.ac.id/index.php/ar/article/view/18>.
- Kizilhan, P., & Demir, E. (2022). A Study on the Relationship between Teacher Candidates' Attitudes towards Teaching Critical Thinking and Critical Thinking Standards. *Turkish Online Journal of Educational Technology-TOJET*, 21(4), 1-18.
- Jamil Ahmad. (2002). *Pemupukan budaya penyelidikan di kalangan guru di sekolah: satu penilaian*. Fakulti Pendidikan, Universiti Kebangsaan Malaysia.

- Ma, L., & Luo, H. (2021). Chinese pre-service teachers' cognitions about cultivating critical thinking in teaching English as a foreign language. *Asia Pacific Journal of Education*, 41(3), 543-557.
- Michelot, F., Béland, S., & Poellhuber, B. (2022). A transnational comparative study of preservice teachers' critical thinking skills and metaliteracy self-efficacy. *Higher Education, Skills and Work-Based Learning*, 12(5), 866-883. <https://doi.org/10.1108/HESWBL-10-2021-0191>.
- Polat, Ö., & Aydın, E. (2020). The effect of mind mapping on young children's critical thinking skills. *Thinking Skills and Creativity*, 38, 100743.
- Samaras, S. A., Adkins, C. L., & White, C. D. (2022). Developing critical thinking skills: Simulations vs. cases. *Journal of Education for Business*, 97(4), 270-276. <https://doi.org/10.1080/08832323.2021.1932703>.
- Saputro, A. D., Atun, S., Wilujeng, I., Ariyanto, A., & Arifin, S. (2020). Enhancing pre-service elementary teachers' self-efficacy and critical thinking using problem-based learning. *European Journal of Educational Research*, 9(5), 765-773.
- Şentürk, C. (2021). Effects of the blended learning model on preservice teachers' academic achievements and twenty-first century skills. *Education and Information Technologies*, 26(1), 35-48.
- Song, B. K., Lim, L. Y., & Rengiah, S. (2020). The Development and Validation of a Critical Thinking Skills Inventory: RASCH and Confirmatory Factor Analysis Approaches. *Available at SSRN 3571365*.
- Sutiani, A., Situmorang, M., & Silalahi, A. (2021). Implementation of an inquiry learning model with science literacy to improve student critical thinking skills. *International Journal of Instruction*, 14(2), 117-138.
- Tan, J. P. L., Caleon, I., Ng, H. L., Poon, C. L., & Koh, E. (2018). Collective creativity competencies and collaborative problem-solving outcomes: Insights from the dialogic interactions of Singapore student teams. *Assessment and teaching of 21st century skills: Research and Applications*, 95-118.
- Valtonen, T., Hoang, N., Sointu, E., Näykki, P., Virtanen, A., Pöysä-Tarhonen, J., Häkkinen P, Järvelä S, Mäkitalo K & Kukkonen, J. (2021). How pre-service teachers perceive their 21st-century skills and dispositions: A longitudinal perspective. *Computers in Human Behavior*, 116, 106643.
- Wallen, N. (2022). Critical thinking dispositions and teacher self-efficacy among pre-service teachers. *International Journal of Progressive Education*, 18(1), 116-133.
- Zee, M., & Koomen, H. M. Y. (2010). Teacher self-efficacy and its effects on classroom processes, student academic adjustment, and teacher well-being: A synthesis of 40 years of research. *Review of Educational Research*, 81(1), 49-101.