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FROM PASSIVE TO PROACTIVE: EFFECTIVENESS OF TQE ON CRITICAL THINKING AND STUDENTS LEARNING OUTCOMES IN SECONDARY SCHOOLS

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Abstract

The objective of this study was to explore the teacher's perception of the effectiveness of Think-Question-Explore (TQE) strategy in enhancing students learning outcomes and critical thinking. Meanwhile this study was finding out that how teachers implement the TQE strategies, their experiences with its use and their views regarding its impact on students learning and classroom engagement. A qualitative design with phenomenological approach was used to gain in-depth insight into teachers lived experiences. 10 participants were selected by purposive sampling from the selected secondary schools. Those teachers had experiences using the TQE strategy in the classroom. Data were collected through semi-structured interview, which allowing participants to express their perception and experiences in detail. Thematic analysis was analyzed to draw the conclusions. It identifies recurring themes related to structured implementation, enhanced learning outcomes, critical thinking development, student's engagement and confidence, professional support and challenges in using TQE. The findings revealed that teachers perceive the TQE strategies as an effective teaching approach to enhance students understanding to improve their critical thinking skills and increase classroom participation. The study concludes that while TQE is an effective teaching strategy for enhancing students learning outcomes, its effective implementation require proper training and institutional support. This study may contribute to improve the instructional practices and encouraging the adoption of student centered learning strategies in secondary schools.

Keywords: Think–Question–Explore (TQE) strategy; teachers' perceptions; learning outcomes; critical thinking; classroom engagement; secondary education

Introduction

In contemporary education, focuses on students critical think skills such as skill development, critically think on any phenomenon and active participations of the students. One of the best strategies is Think-Question-Explore (TQE). It offers the students to think deeply develop meaningful questions and find answers through research and debate method. This method is far beyond the traditional cramping infect it regulates the cognitive processes.

The theoretical foundation of TQE is connected with constructivist learning theory, according to this theory learners learnt through age and experiences. According to jean Piaget (1970) learning occurs when ones build a connection with its surroundings that activate it's understandings through

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cognitive processes. Similarly Lev vygotsky (1978) put emphasize on interaction and collaboration for the better learning processes. These TQE strategies fostering meaningful learning experiences within the classroom.

Research proves that questioning strategies enhance the students' active participation in the class. For instance chin and Osborne (2008) narrated that questions that developed by students are not only enhance their perspective infect improve their inquiry based learning. Similarly king (1994) said that to train the students to ask the questions and find their answers independently by research and inquiry method is accomplishing knowledge and improve academic standards. Moreover, Hattie (2009) has explained in his research that active learning strategies especially question answers and discussion methods put positive impact on students' performances. Apart from the multiple advantages of these strategies, at secondary level schools are still focusing on teacher centered approaches, which restrict students with content rather to think critically. In such circumstances students only pay attentions towards memorization rather than understanding, and that affects their grades. So, it is very much important to analyze the TQE advance strategies to improve students learning through practical and theoretical knowledge.

Background of the Study

In many secondary schools traditional teaching practices focuses on classroom practices such as cramping rather than critical thinking. Consequently, students face difficulties to develop higher order thinking skills, problem solving skills and deep thinking skills.

Research approved the inquiry based learning and questioning skills to improve learning but the implementation of such practices are limited (Chin & Osborne, 2008; King, 1994). Moreover, insufficient teachers training, outdated curricula, limited resources and lack of knowledge into the teaching practices. In the results, students face problems to think independently, develop authentic and meaningful questions and explore new knowledge. Furthermore, there is no scope of qualitative research on TQE and its impact on the real world classroom its practices especially in the secondary schools. Many qualitative researches focus to on achievement targets, gap between students understanding and teachers' experiences with all those techniques. This study seeks to deal with this gap by exploring the impact of TQE in the improvement of students learning from a qualitative approach.

Significance

This study is beneficial for the different stake holder in the field of education.Firstly, it is helpful to bring betterment in the teaching and learning because it gives the insight of effectiveness by applying TQE strategies in the teaching and learning processes especially enhance the students' critical thinking, their engagement with task and perceiving knowledge. Many research proved that active learning approaches put a positive impact on student's academia performance (Hattie, 2009), and this study elaborates the steps of TQE practices and its implementation in the secondary education.

Secondly, this study is beneficial for the teachers because it introduce the application of classroom instructions such as questioning, inquiry based learning etc. When teachers understand the real

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classroom practices with TQE strategies than they adapt more efficient pedagogical practices those are more relevant to the constructivist principles (Piaget, 1970; Vygotsky, 1978).

Thirdly, the findings of this study are providing guidance for the curriculum developers and educational policymakers, especially put emphasize on students centered approaches in secondary school curricula. By giving importance to the TQE a practice deny the rote learning and promotes the meaningful knowledge and skill development among students.

Lastly, this study contributes to the existing knowledge by dealing with limited qualitative research in TQE. It provides the deepest knowledge of students and teachers experiences consequently, offering valuable insight for future research and educational improvement.

Research Objectives

1. To explore how the Think–Question–Explore (TQE) strategy is implemented in secondary school classrooms.
2. To investigate teachers' and students' perceptions on the effectiveness of TQE in improving students' learning outcomes.
3. To explore the influence of TQE-strategy on students' critical thinking skills, classroom participation and engagement.
4. To identify the challenges and barriers that teachers and students face during the implementation of the TQE strategy.
5. To investigate the professional support, training needs and recommendations to improve the implementation of TQE in secondary schools.

Research Questions

1. How is the Think–Question–Explore strategy used in secondary school classrooms?

2. Do teachers and students believe that Total Quality Education is really making a difference, in the way students learn and understand things?

3. What is the effect of the TQE strategy on students' critical thinking, participation and engagement in the classroom?

4. What are the challenges and barriers experienced by teachers and students in the implementation of the TQE strategy?

5. What professional support, training and improvements are required to ensure effective TQE implementation in secondary schools?

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Literature Review

One of the main trends in contemporary educational research has been the transition from traditional teacher-centered pedagogy to student-centered and inquiry-based learning. Increasingly, scholars agree that passive learning environments inhibit students' development of higher order thinking skills, especially in the areas of critical thinking, problem-solving and engagement. Conversely, active learning methods such as questioning and exploration have been observed to substantially boost students' cognitive growth and conceptual comprehension.

As also shown in literature, questioning is most often associated with critical thinking. Questions are not just a tool of assessment, but a powerful tool of teaching that encourages higher order thinking. Well-designed questions help students to analyse, evaluate and synthesise which will improve students' critical thinking skills" (Tofade et al., 2013). Higher order questions can help us move beyond rote memorization to a deeper understanding of concepts. Badly written questions can actually limit learning and intellectual engagement (Tofade et al., 2013). This closely mirrors the 'Question' element of the TQE strategy which promotes purposeful and structured questioning as a form of cognitive activation.

Recent empirical studies have also supported the effectiveness of student-generated questioning strategies. For example, Nur et al. (2023) conducted research on the "Thinking Empowerment by Questioning (TEQ)" method and found a significant increase in the students' conceptual knowledge and critical thinking skills in the context of biology education. Similarly, Muhamad Dah et al. (2023) showed that structured questioning protocols such as the Investigable Questioning Formulation Technique (IQFT) improve students' capacity to formulate meaningful and investigable questions, thus boosting inquiry and deeper learning. These findings provide strong empirical backing for the integration of questioning frameworks in classroom instruction.

In addition to questioning, another important aspect of effective pedagogy is learning through exploration. Exploration invites students to actively engage with the content, construct knowledge and take ownership of their learning journey.Mishra and Iyer (2015) found that problem-posing activities where students generate their own questions support exploration-based learning and increase students' engagement and understanding of complex concepts. This explorative dimension is part of the TQE framework because it allows learners to explore, analyse and relate new knowledge to past experiences.

The theoretical basis of these strategies is the constructivist learning theory, which stresses that knowledge is actively constructed through interaction, reflection, and inquiry. Constructivist approaches stress learner autonomy, social interaction and meaningful engagement with content. The use of models such as QEOSA (Question, Explore, Optimize, Show, Act) further demonstrates how structured questioning and exploration can improve learners' creativity and problem-solving skills (Cheng, 2012; see also Frontiers in Psychology, 2019).These models are similar to TQE in principle, thus TQE has a theoretical justification.

Research on integrated instructional strategies also shows that the combination of thinking, questioning and exploration results in better learning outcomes. For example, Sagala et al. (2019) compared different active learning strategies and found that strategies integrating multiple cognitive processes improved students' conceptual understanding substantially more than

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strategies with a single approach. Likewise, inquiry-based teaching methods have been shown to improve students' analytical thinking and engagement by encouraging them to ask questions, explore, and construct knowledge together.

These approaches have well documented benefits, but implementation challenges as shown by several studies. Teachers are not trained, don't have time and don't know how to use questioning and inquiry-based strategies effectively in their classroom practice. Teachers are not trained, don't have time and don't know how to use questioning and inquiry-based strategies effectively in their classroom practice. Moreover, much of the curriculum and textbooks still focus on lower order thinking skills, limiting students' opportunities for meaningful inquiry.

There have been many writings on questioning strategies, inquiry based learning and constructivist pedagogy but not much research on integrated frameworks like TQE, especially in secondary education. Existing research has focused on the individual components (e.g. questioning or inquiry), rather than the interaction of the components as a coherent instructional strategy. But maybe more importantly, there is a lack of qualitative research on the lived experience and perception of teachers implementing strategies like these.

Therefore, the present study aims to fill this gap with an in-depth study on the strategy Think–Question–Explore (TQE) in real classroom settings. The study aims to understand how integrated student-centered approaches can lead to better critical thinking, engagement, and meaningful learning at the secondary level through understanding teachers' perceptions, instructional practices, and experiences.

Methodology

The study used the qualitative research method by applying the approach of phenomenology to collect the lived experiences of the participants. Data was collected by semi structured interviews of the selected secondary school teachers. Purposive sampling technique was used to select the sample of 10 secondary school teachers. Collected data was analyzed by thematic analysis approach. Researcher developed the codes and themes to draw the conclusions from the collected data.

Data Analysis

This thematic analysis was conducted on qualitative responses collected by secondary school teachers regarding their experiences and strategiesof implementation on Think-Question-Explore in the classroom. The Braun and Clark's six step technique was used for thematic analysis.

Theme 1: Structured Implementation of TQE in classroom practices

Teachers describe the TQE as a structured and student centered strategy that includes the reading or viewing content, individual reflection small group discussions and whole class synthesis. Moreover, the role of a teacher is a facilitator rather than a lecturer.

Theme 2: Positive Impact on Learning Outcomes and Conceptual Understanding

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Teachers continuously described that TQE improves the student understanding and promotes the conceptual understanding instead of memorization through rote learning.

Theme 3: Development of Critical Thinking and Inquiry Skills

One most important theme that describes TQE strengthens higher order thinking skills like analysis, reasoning, interpretation, and inquiry skills.

Theme 4: Increased Student Engagement, Participation, and Confidence

Teachers observe the improvement in students' confidence, participation and enthusiasm, particularly those students who normally less talkative starts communicating their stance at the front of whole class.

Theme 5: Challenges and Barriers to Effective Implementation

Although teachers have positive perceptions but they still have to face challenge like time constraints, limited resources, large class size and students readiness.

Theme 6: Need for Professional Development and Institutional Support

Teachers' puts emphasize on the importance of training, planning, time, instructional support and administrative support.

Overarching interpretation

Findings suggested that teachers consider TQE as the most effective inquiry based strategy that makes students active learner who construct knowledge rather than the passive learner who just get information. However, the effectiveness of this approach is totally depends upon the proper preparation, classroom resources and institutional support.

Discussion

The findings of the study show that teachers consider the Think–Question–Explore (TQE) strategy to be an effective, student-centered teaching approach that improves students' learning outcomes. According to teachers, TQE does not limit students to memorization; instead, it gives them opportunities to understand concepts in depth, ask questions, and actively take part in the learning process. This method also increased the students' involvement and engagement, and self-confidence in the classroom especially for the students who are usually quiet and do not speak much. Teachers said TQE helps students develop critical thinking and inquiry skills such as analysing and interpreting lessons rather than rote-learning information.

However the study also found some problems that made it hard to use TQE effectively.Teachers said the main issues were not having time having too many students in a class not having enough resources and not getting proper training. Some teachers also mentioned that TQE is difficult to make fully effective without institutional support and limited professional development opportunities. The study concludes that TQE can be an effective teaching strategy to improve students' understanding, involvement and higher order thinking skills. However, successful implementation of TQE requires adequate teacher training, adequate classroom resources and strong administrative support.

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