The Contribution of Peer Tutoring in The Development of Motivation Among Students Toward Learning Biology at The Secondary Level

Irfan Ullah
Special Education Complex, Mardan, Pakistan

Javed Iqbal
Higher Education Department, Pakistan

Muhammad Kaleem
Bacha Khan University, Charsadda, Pakistan

Motivation is one of the essential factors in the learning process. This study investigates the role of peer tutoring in motivation development. In this study, the current research explored the contribution of peer tutoring in the development of motivation among students toward learning biology at the secondary level. The study's primary objective is to probe the impact of peer tutoring on the development of motivation for learning. A group of 20 10th-grade students was selected as a sample for peer tutoring from the ANSI school in Mardan using a random technique from a pool of 120 students.This study employed a qualitative research design, utilizing participant observation as a tool to assess key motivational factors, including interest level, engagement, and session preparation, among participants, to determinestudents' motivation toward learning. The behavioral data related to motivation observed during participant observation were analysed qualitatively using data coding and thematic analysis. The study's findings revealed that peer tutoring had played a beneficial role in developing motivation among tutors and tutees towards learning.It was found that confidence level and understanding of theteaching contents were enhanced among the tutors. At the same time, the tutees got a supportive and social environment where they were free to discuss and understand the learning content.The study has concluded that peer tutoring is an effective strategy for improving motivation in students at the secondary level.

*Keywords:*motivation, peer tutoring, interest, learning, development, observation

Peer tutoring is a teaching strategy (Fitz-Gibbon, 1988) in which students of diverse academic abilities assist one another by revising key topics. (Perrott, Davis, Vannest, & Williams, 2013). According to Powell (1997), tutoring is a strategy to support students' weak areas to help them perform well in academic activities. Tutoring is typically provided to help with homework and instill good study habits, often by older students, intelligent classmates, or professional individuals. Jokinen (2012) differentiated mentoring from peer tutoring based on the fact that mentoring occurs between older and younger persons, in which the mentor shares his/her knowledge and experience in learning situations through cooperation with each other in the workplace. In contrast, peer tutoring may occur among diverse groups that can easily interact with one another (Nawaz& Rehman, 2017).

The approach of peer tutoring is a new approach adopted in almost all countries (Arrand, 2014), and it was found to be effective in the development of academic performance. Rizve, 2012; Comfort and McMahon,2014; Ullah et al., 2018, interest (Klavina & Block, 2008) of the students in learning activities,

and has also brought a positive effect on the attitudes (Robinson et al., 2005; Tella, 2013) of the students towards course contents(Naseerali, 2013). Students with disabilities learn through peer tutoring effectively (Topping et al., 2003; Okilwa & Shelby, 2010; Lazarus, 2014; Klavina& Rodionova, 2015). Peer tutoring was also found to be effective in anger management (Gebes, 2011). It is also effective in managing social and emotional problems (Bowman-Perrott et al., 2014; Alegre et al., 2017). Furthermore, Uzuner, Yurt, and Aktas (2016) found that peer learning showed significant results in mathematics, science, physical training, and social studies. Interest development, improvement in academic performance, and the role of peer tutoring in managing social problems are all directly or indirectly components of motivation.

Motivation is abstract, which can not be directly observed or measured like other variables (Pakdel, 2013). Motivation is a force that compels and sustains an individual's behavior toward a specific activity, ultimately driving the achievement of a goal (Cherry, 2016). These motivational forces act as agents responsible for most of the work in the world (Volet & Jarvela, 2001). In order to make the learning effective, the teacher should develop the motivation of the students towards learning (Ebata, 2008; Goktepe, 2014), and the curriculum developer should bring those contents/experiences into the program that can arouse the motivation of the students towards learning (Muho & Kurani, 2013).

Factors that constitute the structure of motivation include effort, goal orientation, locus of control, self-efficacy, sense of self, self-esteem, self-regulation, and individual interest (Yunus & Ali, 2009; Arkhipova et al., 2017). These elements are named about a specific core struggle individuals face withphenomena(Muho & Kurani, 2013).Therefore, when designing any learning activity, the instructor should consider all these elements to give due weight to the students' motivational level (Miele & Scholer, 2018).When managing the peer tutoring session, the motivational structure should be considered to keep the students motivated.

The learning process is not a simple phenomenon (Dutta & Crossan, 2005); instead, many factors work collectively during the process of learning (Lim& Morris, 2009). Among these components is the motivational force (Ramli, 2014; Eddy-U, 2015), which is provided to the learners from different perspectives. The relation of learning and motivation isinterdependent (Abass, 2008). Thus, motivation is a source of energy for the learning process (Packer, 2004).

Different methods are used for the development of the motivation of students, which various researchers presentand are listed here;

- The behavior of the teacher in academic problems, as well as non-academic problems, should be supportive of their students. The adaptation of supportive behaviorpromotes the abilities, motivation, and interests among students in academic activities(Lanzinger, 2009).
- Students should be involved in the lesson planning, target setting, and learning strategies. Whenlearners understand the learning process and its outcomes, they will be more motivated to learn. Same during planning a peer tutoring session,tutors were engaged in lesson planningand target setting (Hattie, 2012).
- An appealing and exciting environment should be created for learning in the classroom because it has a momentous effect on the students. Keeping in view this idea, a supportive and attractive environment is provided for the peer tutoring sessions(Greany, 2005).
- Curiosity for learning should be fostered among students to facilitate effective teaching. So the contents of peer tutoring were presented in such a mannerthat students were waiting for upcoming sessions (Rehman &Haider, 2013).
- For maintaining motivation among the students, proper rewards should be given to deserving students, irrespective of personal discrimination(Leuven, Oosterbeek, & Klaauw, 2010).
- It is considered necessary for developing confidence levels and motivation (Ang, 2006) that students should be given responsibilities in classroom activities. Similar to peer tutoring, tutors take on a teaching role, gaining confidence, while the tutee can interact confidently with their colleague tutors.

- Group activities should be encouraged in the classroom. During group activities, students engage in socialisation, which can enhance their autonomy and motivation, and peer tutoring is an example of group activities (Reeve &Jang, 2006).
- The discussion of success stories from well-known individuals in history or society also motivates students to learn more effectively (Leuven, Oosterbeek, & Klaauw, 2010).

Motivation is considered an important factor in learning. However, the nature of humans is also very complex, and in this regard, the nature of motivation is equally diverse and cannot be fully described by a single school of thought. Individual differences in humans cause this diversification. According to Williams and Williams (2011), the primary ingredients that remain dominant in the learning process are the more successful students who are motivated intrinsically, as compared to students who are motivated extrinsically through rewards and other forms of reinforcement (Lei, 2010). The teacher is the primary agent of motivation in the classroom, playing a crucial role in developing students' motivational levels(Weinstein& Romano, 2010). Legg and Wilson (2009) discussed how the contents of learning experiences significantly raise students' motivational levels. Among the learning experiences, peer tutoring was tested to find its role in developing the students' motivation.

Theoretical Background of Motivation in Learning

Greeks and Romans are credited with initiating the study of motivation in business and education when their philosophers contributed their knowledge about motivation (Bonner, 2011). According to the Greeks, desires, pains, and pleasures are the three main factors that stimulate motivational activities in an individual's daily life (Pakdel, 2013).According to Ford (1992), motivation was ascribed to both internal and external factors at the beginning of the 20th century, including incentives, needs, reinforcements, and initiatives, which were beyond a person's control. At this time, the primary objectives of life were to fulfil needs and ensure self-protection (Larrick, 1993). In the central decades of the 20th century, mental processes and emotions were given importance in motivation (Ferguson, 1989). At the end of the 20th century, theories of motivation gained importance, and as a result, the concept of motivation was extensively explored, leading to the formulation of many theories of motivation (Miner, 2005; Steel & Konig, 2006).

According to Role Theory, as proposed by Robert Merton, an individual's social role in a given context plays a significant role in their life (Biddle, 2013). These roles have their duties and responsibilities (Eagly et al., 2000). This theory is based on the statement that "Behavior adheres to the role and not to the actor," e.g., when a person becomes a teacher, the role of teaching will bring modification in the behavior of this person (Turner, 2001). So, when a tutor assumes the role of a teacher, their behavior towards the students changes. Responsibility is also an important aspect of tutoring (Leung, 2019). According to this theory, tutoring can lead to observable changes in the attitudes and behavior of tutors (Galbraith & Winter bottom, 2011). In the case of tutees, the tutors are closer to tutees as compared to the teacher, and as a result, improvement is recorded in behavior as well as in academic performance in most of the studies (Powell, 1997; Rizve, 2012; Comfort and McMahon, 2014; Ullah et al., 2018; Leung, 2019) conducted in tutoring. Peer tutoring in the Zone of Proximal Development was another recommendation made by Vygotsky for students participating in academic activities(Vygotsky,1987).

Skinner explored various external factors that can influence the manipulation of intended behavior in both positive and negative directions (Skinner, 2014). Rewarding and appreciating good behavior lead to the desired behavior (Gütherk, Irlenbusch, & Rockenbach, 2009; Smith et al., 2015; Afandi, 2017), whereas punishment yields unwanted results (Elbla, 2012). However, due to individual differences, the same stimuli do not produce the same results for different individuals (Lai, 2011). In peer tutoring, both the tutor and tutee may act asstimuli for each other to enhancethe motivation level for learning. At the same time, some aspects of motivation were elevated in some studies, like (Austin, 2008; Razak & See, 2010; Silvia, 2012; Renninger &Hidi, 2015; Arrand, 2014).

According to Stipek (1996), intrinsic factors are stronger than extrinsic factors in motivating individuals. In line with this,Meichenbaum (1977) gives the idea of cognitive manipulation and presents the model of "Cognitive Behavior Modification" (CBM). According to this model,an individual's behavior can be modified by controlling their inner cognitive processes, such as suppressing and ignoring negative habits or memories, and encouraging positive behaviors (Harris, 1982). According to this model, students' motivationcan be developed by modifying the internal cognitive elements of the students. Staats, Minke, Goodwin, and Landeen, (1967); Wulfert, Blanchard, Freidenberg & Martell, (2006);, like the use of emotional attachment of students with each other Schoeps, et al (2020), or acting the role of teacher for tutorsDe Smet, Van Keer, De Wever, and Valcke, (2010), or learning form colleague are some of the factors Robinson, Schofield, and Steers-Wentzell, (2005) showed positive indicators which may be manipulated further for motivation enhancement among students in this study.

Maslow's theory is the hierarchy of human basic needs,and the theorist Maslow placed drives for learning at the secondary level after the fulfillment of basic needs. (Bauer & Erdogan, 2012).The Existence Readiness and Growth (ERG) theory of Clayton Alderfer (1940-2015) has also supported Maslow's theory, suggesting that the drive for learning is at the secondary level of needs. (Bauer & Erdogan, 2012).According to the Drive theory of Clark Hull (1940), the desire for learning is one of the acquired natures of humans, which means that motivation towards learning can be manipulated.(Rehman & Haider, 2013).

Numerous studies have been conducted to explore practical ways of motivating and engaging students in learning (Blumenfeld, Kempler, & Krajcik, 2006), as motivation is the catalyst for cognitive activities (Brophy, 2013). Among these, one is Keller,a professor, who presented the ARCS(Attention, Relevance, Confidence, and Satisfaction) model of motivation(Malik, 2014). The model emphasisesmaintaining Attention, Relevance, Confidence, and Satisfaction to keep the students motivated (Keller, 1987). The implementation of the model reported positive results in maintaining the students' motivational levels (Li, K.,& Keller, 2018).

In light of the above-mentioned theories, peer tutoring integrates the elements mentioned, such as social responsibility, confidence development, and adopting the role of teacher for effective learning,especially when the students are in the zone of proximal development, where students can get help from their colleagues and learn effectively.

Contents and Procedure of the Peer Tutoring
The researcher selected three untaught chapters of 10th-grade Biology: Inheritance, Biotechnology, and Man and His Environment. Thirty lesson plans from these chapters were developed for peer tutoring sessions. Each lesson plan was discussed and taught to tutors a day earlier by the researcher, who provided proper guidance for the progression of the study. Tutors received specific training on how to teach various components of the plan and were guided on how to assist their tutees effectively. The researcher supervised the entire process to prevent misconduct and save time. During the session, as part of the peer tutoring, observations were recorded by the researcher as a participant observer.

The Impact of Peer Tutoring on Students'Motivation
Numerous studies have been conducted on peer tutoring across diverse sample sizes worldwide, some of which are listed here to analyse the effectiveness of peer tutoring on various dependent variables. For example, Clarkson and Luka (2002) studied the experiences of media students and their approaches towards learning from their tutors. A questionnaire was employed as a data-gathering tool.Findings revealed that both tutors and tutees enjoyed the learning experience during peer tutoring sessions. However, due to the diversity of the students' backgrounds, some tutees reported responses that were not in favour of peer tutoring. Eisenkopf (2008) explored the impact of peerlearning on students'motivation along with learning. All the literature cited in the study supported peer tutoring,with some deviations due to the mishandling of the phenomenon.The study's findings revealed a significant effect on both tutors and tutees. The study also recorded some impact on the motivation level of both partners.   Austin (2008) conducted her Master's

degree thesis toinvestigatethe influence of peer learning experiences on subjects, such as mathematics and motivation towards learning at the elementary level in one of New York's urban schools. Strong motivation was observed among the students towards learning mathematics from their peers. Cheng and Ku (2009) noted positive results of reciprocal peer tutoring on students' motivational level and attitudes. Razak and See (2010) examined the differences between in-person and virtual peer learning in the field of statistics, wherea significant effect was found on motivation and academic performance. The impact of peer tutoring on the motivation and conceptual understanding of college studentsat the Physics Department was explored by Gok (2012). A significant effect was found on conceptual understanding, but no impact was observed on students' motivation and interest in learning. Arrand (2014) studied peer tutoring qualitatively by collecting responses from media students using a questionnaire, narrative inquiry, and a self-evaluation sheet. The study aimed to examine students' opinions on the multifaceted nature of peer tutoring, a topic that has already been explored in the literature. The study's findings confirmed the existing literature's claim that peer tutoring makes a significant contribution to learning from peers and the development of motivation.

After reviewing the literature mentioned above, it becomes evident that motivation plays a vital role in the learning process. It acts as an internal drive to achieve academic goals. Sustaining motivation among students using traditional teaching methods can be complex. Peer tutoring is a social and democratic learning approach where students of different academic levels help each other by sharing ideas and strategies. By giving students the roles of both teacher and learner within a democratic learning environment, peer tutoring encourages emotional engagement, personalised attention, strong motivation, and effective learning.

While international research has confirmed the effectiveness of peer tutoring in improving academic performance, attitudes, and inclusion, there is limited research in the context of Pakistan, particularly in terms of its impact on secondary students' motivation. This study aims to address this gap by examining how peer tutoring influences students' motivation to learn biology. The research is based on motivational and learning theories such as Vygotsky's Zone of Proximal Development and Role Theory, which emphasise the importance of social interaction and responsibility in learning. Using qualitative methods like participant observation and thematic analysis, the study seeks to understand the subtle behaviors and experiences of students involved in peer tutoring. The findings are expected to provide clear evidence in support of the integration of peer-assisted strategies into mainstream classrooms and fostering more engaging, student-centred teaching approaches in Pakistani secondary schools.

Aim of the Study
To investigate the impact of peer tutoring on the development of motivation among secondary-level students.

Research Question
To what extent does peer tutoring contribute to the motivation of students towards learning in biology at the secondary level?

Method
This study is a qualitative component of a doctoral dissertation examining the effect of peer tutoring on the academic achievement of secondary-level students in biology. The significant steps adopted for completion of this study include;

Population and Sample
The study population consisted of 433405 students who were enrolled in secondary schools in 2016-17 at grade 10 in Khyber Pakhtunkhwa (EMIS, 2015). The peer tutoring program was implemented in a secondary school in Mardan, Khyber Pakhtunkhwa. A sample of 20 students was selected for peer tutoring from the ANSI school in Mardan through random selectionfrom120 students. The median of the pre-test results was used as the cut-off criterion. The pre-test, which covered three previously taught chapters of biology in the tenth grade, was administered to a sample of students, creating two groups: high achievers and

low achievers. Low performers were nominated as tutees, and high achievers as tutors. Following that, 10 pairings were created so that students could choose their tutors and learn from their selected collaborators.

Research Instruments
Participant Observation

Participant observation was employed as a qualitative tool to assess the students' motivation towards learning. The research drew on the idea of using participant observation, as described by Colvin (2007). The researcher was personally involved in the study, acting as a monitor and close observer, and collected diverse information from the students about their experiences. Creswell (2015) and Kumar (2018) recommended participant observation as the most effective tool for assessing student motivation towards learning through peer tutoring.

Design of the study

This study was a qualitative component of an experimental study, "Effect of Peer Tutoring on Academic Achievement of Students at Secondary Level in the Subject of Biology," conducted at the ANSI school in Mardan. One of the study's objectives was to explore students' motivation during peer learning.

Selection of Participants for the Study

There were 120 students enrolled in the 10th-grade biology class, divided into four sections. Twenty students were randomly selected, and then a pre-test was administered to the sample. The pre-test scores led to the formation of two groups based on the median score. The students whose scores were above the median were nominated as tutors, and the students whose scores were below the median were nominated as tutees.

Tutor Training

According to Clarkson and Luca (2002), a training program should be arranged for tutors because tutors are novices. Therefore, training sessions were arranged for tutors before the treatment sessions. The training focused on the structural and operational aspects of peer tutoring, while also emphasizing the psychological basis of both tutees and tutors. The training was also found to help reduce management problems, as noted by Smith (2010).

Data Collection

As this study was part of a doctoral dissertation, the data regarding student motivation measurements were collected through participant observation and further analyzed in the following steps, as described by Creswell (2012).

Participant Observation (Transcriptional View)

This study lasted for seven weeks. The treatment sessions included tutor training, preparation for tutoring, and various other activities. In all these steps, the researcher was involved and engaged, acting as a participant observer and extensively noting the students' experiences, behavior, and attitudes, which led to a decision about the students' motivation towards learning.

The school administration allocated a computer lab for tutoring sessions because it was the only available room and a suitable location, given its multipurpose nature. The researcher played the role of a participant observer and noted the students' behavior towards learning through field notes, in a narrative and extensive manner. Every session of peer tutoring was pre-planned and involved a well-developed lesson plan.

Before each session of peer tutoring, the tutors were oriented correctly on the content and various approaches to teaching. During these preparatory sessions, tutors attempted to satisfy themselves by asking questions about teaching materials and occasionally about the nature of the tutees. The contents were also provided to tutors one day earlier in a complex form for preparation.

Before the start of every session, the contents and central theme of the lesson plan were properly oriented to both tutors and tutees. They were also informed about the target objectives to be achieved by the practice and then allowed to proceed correctly.

The peer tutoring program was monitored and assessed by the researcher, who provided necessary guidance and assistance as needed. Both the tutors and tutees interacted during the tutoring process by asking questions about the content. The researcher played the role of motivator and encouraged both the tutors and tutees to participate and interact. Tutees were encouraged to ask as many questions as possible to their partners in order to achieve satisfaction. Some topics, such as Mendel's law of independent assortment and protein synthesis, were challenging, and most pairs appeared confused in such situations. The researcher explained the contents to all members of the pairs and then allowed further peer tutoring to enhance the students' comprehension level.

Students demonstrated high motivation, as evidenced by their reflections during peer tutoring sessions, including waiting for the session, regular attendance, and completing all necessary arrangements before the researcher's arrival. These behaviors demonstrated the participants' motivation in the tutoring sessions. Thirty lesson plans were developed for the session, comprising five 45-minute lesson plans per week, and the procedure of peer tutoring continued for six weeks. Moreover, to foster motivation, each day was dedicated to a pair of students. Their pictures were pasted on the title page of the plan, so all they were waiting for was to receive the complex form of the plan to find out to whom the plan was dedicated.

During peer tutoring sessions, it was noted that participants asked the researcher different questions about the study's nature and objectives. They also inquired about higher educational studies and shared their thoughts on their future.

They were surely discussing peer tutoring with their classmates, which led them to the researcher for inclusion in the peer tutoring program. However, it was not possible to include other students, but to show their motivation for peer learning.

It was the teenage age of the students, during which they are usually in a flighty mood, which makes them very naughty. However, here the situation was different, all the participants had shown very obedience and interest, except in a few cases where some disciplinary issues were noted. All the necessary preparations and arrangements, including the pasting of charts and cleaning of the white board, were performed by the participants. They never involved the researcher in classroom activities. One negative thing noted was that two pairs were repeatedly caught in personal discussions due to their close friendship. Enjoyment and relaxation were observed among the participants during the peer tutoring sessions.

The announcement of the termination of peer tutoring shocked all the participants, and they all requested that the practice be continued to complete the entire biology course. This was the enhanced level of motivation that was induced by peer tutoring among the participating students. The study was also delightful for the researcher, and he made an effort to minimize personal biases and preferences, as well as any extra work.

Coding
The observations collected as a participant observer were then scrutinized word by word, and the text words that conveyed the concepts for which they had been examined were underlined. Each underlined text was allotted a code word (phrase) and noted in the margin of the sheet. Similarly, the entire transcription was coded, with each code framed in a textual box. Codes of the same idea were clustered together, and each cluster led to the formation of a theme, which represented an idea, as the investigation progressed.

Results

The current study aimed to examine how peer tutoring influences students' motivation to learn biology at the secondary level. Data was collected qualitatively through participant observation of students involved in peer tutoring over seven weeks at a secondary school. The data were analyzed using thematic analysis, which revealed the following significant findings:

Active Preparation and Participation

- All 20 selected participants (tutors and tutees) showed a high level of readiness for the peer tutoring sessions. They were all present on the site and were anxiously waiting for the session. All the students were enthusiastic and committed to learn.
- Students came prepared, maintained regular attendance, and completed necessary classroom arrangements without the researcher's help.
- This behaviour reflects strong achievement motivation, consistent with Muho and Kurani's (2013) definition of motivated learners.

Curiosity and Engagement

- Both tutors and tutees demonstrated intellectual curiosity by repeatedly asking questions during training and tutoring sessions.
- Tutors sought clarification on content and teaching strategies from the researcher, while tutees actively engaged with the material and discussion, asking questions for better understanding.
- This finding aligns with the concepts mentioned by **Silvia (2012)**in his book that curiosity is an important component of intrinsic motivation.

Motivated Behaviour and Collaboration

Students displayed strong signs of intrinsic motivation during the entire peer tutoring sessions, such as:

- Consistent attendance
- Respectful communications with peers
- Engaged participation
- Sharing ideas

These behaviours are indicators of a motivated learner, as noted by Renninger and Hidi(2015).

Desire for Continuation

- As the peer tutoring session continued for six weeks, just for three chapters of 10th biology, and as the period of the peer tutoring session ended, all participants asked for peer tutoring to continue for the rest of the biology course. This showed a strong interest of the students in peer tutoring.
- This intense desire to extend the program of peer tutoring demonstrates deep emotional and academic interest in peer learning. This finding is aligned with findings explored by Fong, Schwab, and Armour (2006).

Minor Disciplinary Issues

A few disciplinary issues arose when participants were in relaxed conditions.
- For example, two pairs were occasionally distracted by personal friendships.
- These incidents emphasise the need for structured supervision, as noted by Galaviz (2009).

Description of the Themes

Similar codes were grouped, and the main idea extracted led to a theme; the following five themes were then developed.

1. All participants effectively met the requirements for the smooth conduct of peer tutoring sessions.
2. To gain a comprehensive understanding, participants were asked repeated questions during training and treatment sessions.
3. Regularity, interest, curiosity, respect, and sharing of ideas were observed among the participants.
4. Tutors and tutees strove to continue peer tutoring after completing the treatment sessions.

5. Minor disciplinary problems were noted where relaxation is awarded to participants.
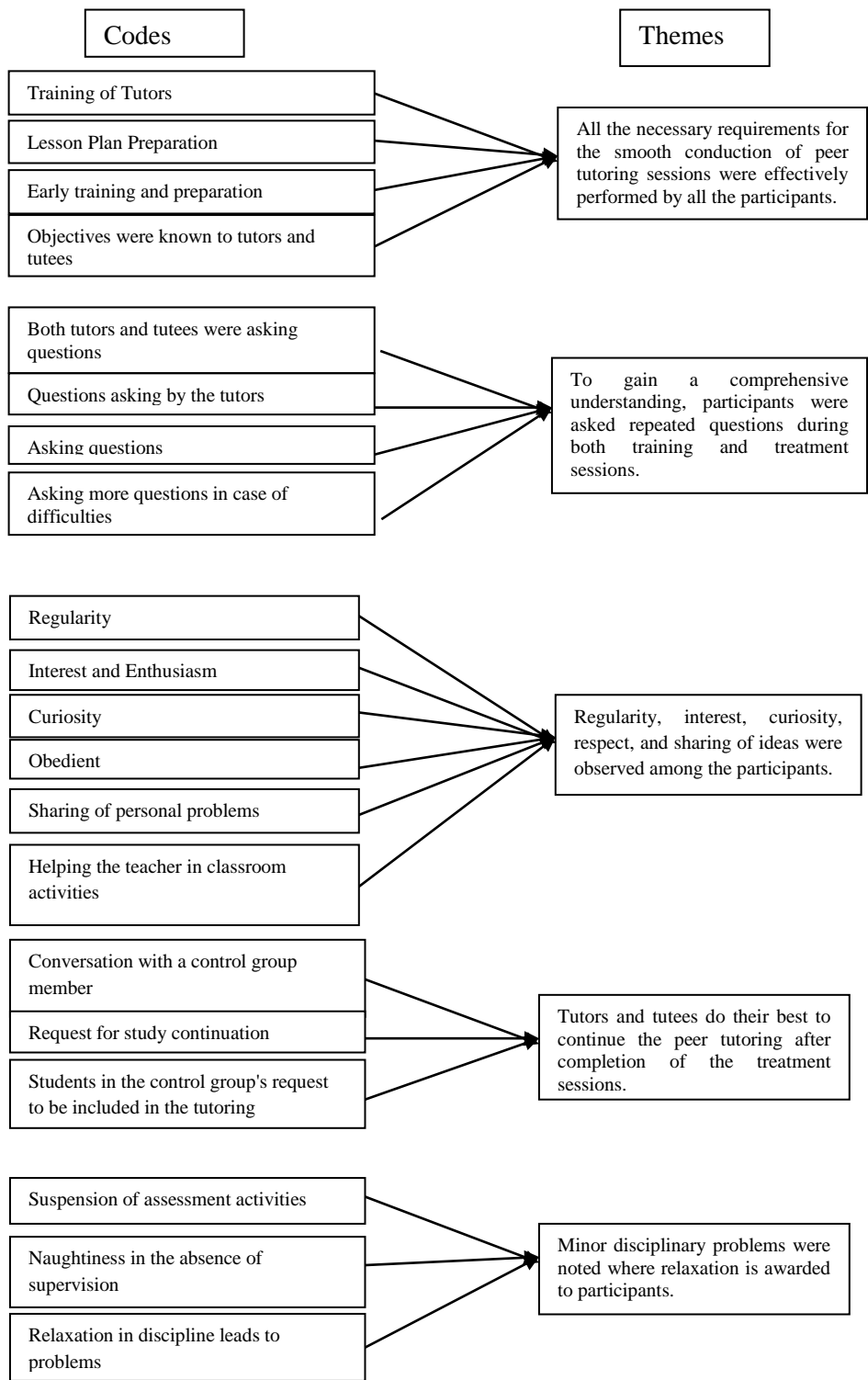
| Codes | Themes |

Codes column (left):

- Training of Tutors
- Lesson Plan Preparation
- Early training and preparation
- Objectives were known to tutors and tutees

→ All the necessary requirements for the smooth conduction of peer tutoring sessions were effectively performed by all the participants.

- Both tutors and tutees were asking questions
- Questions asking by the tutors
- Asking questions
- Asking more questions in case of difficulties

→ To gain a comprehensive understanding, participants were asked repeated questions during both training and treatment sessions.

- Regularity
- Interest and Enthusiasm
- Curiosity
- Obedient
- Sharing of personal problems
- Helping the teacher in classroom activities

→ Regularity, interest, curiosity, respect, and sharing of ideas were observed among the participants.

- Conversation with a control group member
- Request for study continuation
- Students in the control group's request to be included in the tutoring

→ Tutors and tutees do their best to continue the peer tutoring after completion of the treatment sessions.

- Suspension of assessment activities
- Naughtiness in the absence of supervision
- Relaxation in discipline leads to problems

→ Minor disciplinary problems were noted where relaxation is awarded to participants.

Figure 1: data analysis and theme development

Theme Analysis

Maho and Kurani (2013) listed several enterprises, including the struggle for achievement, attachment to goals, emotional pressure for target achievement, efficiency in performance, and interest in

work, which were collectively referred to as motivation. The findings from the first theme concluded that the participants had made all the necessary preparations and received training for the smooth conduct of the peer tutoring program, as mentioned by Maho and Kurani (2013), who noted a struggle for achievement. In the second theme it was noted that curiosity was there among the participants for understanding the contents and for this purpose both tutors and tutees were asking questions for understanding which had confirmed the curiosity as mentioned by Silvia, (2012) that curiosity reduce ambiguity, information gap and negative thoughts and further curiosity was considered as one of the factors of intrinsic motivation for learning. In the third theme, it was concluded that Regularity, curiosity, interest, respect, and sharing of ideas were found among the participants. This was also noted by Renninger and Hidi (2015), who found that the power of interest for motivation is beneficial, regardless of age, and results in meaningful outcomes. In the case of education, policymakers are busy searching for and developing activities based on students' interests to maintain a high level of motivation among students. In the fourth theme, it was extracted from the codes that both partners strive to continue peer tutoring after the completion of the treatment sessions. Likewise, Fong, Schwab, and Armour (2006) found that continuity and attachment contribute to the adjustment and welfare of students in school and social contexts. In the last theme, it was noted that some Minor disciplinary problems arose among the participants due to the relaxation allotted to them. This finding aligns with the lines of research explored by Galaviz (2009) and Smith (2010), which suggest that a lack of external discipline leads to deviation from target objectives.

Discussion

To find the answer to the research question, "How much does peer tutoring contribute to students' motivation toward learning in biology at the secondary level?" the researcher collected data on student motivation through participant observation and then analyzed it using coding and theme development. (1) The findings concluded that both tutors and tutees made necessary preparations for the tutoring session, one of the elements of motivation described by Muho and Kurani (2013), which shows their efforts. (2) Their interest, classroom conduct, and constant questioning demonstrated their innate motivation. The same findings also align with those explored by Silvia (2012), who found that curiosity reduces ambiguity, information gaps, and negative thoughts. Furthermore, curiosity is considered one of the factors contributing to intrinsic motivation for learning. (3) Regularity, interest, respect, and sharing ideas were observed among the participants. Additionally, Renninger and Hidi (2015) and Robinson, Schofield, and Steers-Wentzell (2005) support the idea that the power of interest for motivation is highly beneficial, regardless of age, leading to meaningful outcomes. (4) Continuation in any activity reflects motivation, so the requests from tutors and tutees for extending sessions fall into the category of motivation, which was also confirmed by Fong, Schwab, and Armour (2006), who stated that continuity and attachment help with students' adjustment and welfare in school and social settings. Overall, significant motivation was noted among students toward learning by Austin (2008), Arrand (2014), and Razak and See (2010). (5) Some disciplinary problems were observed among the participants during relaxation periods, and Galaviz (2009) and Smith (2010) also highlighted that a lack of external discipline can lead to deviations from target objectives.

Conclusion

According to the available literature, both tutors and tutees were actively engaged in every tutoring session and ensured they were well-prepared, which may be seen as a sign of motivation. One type of intrinsic motivation is the interest and striving for learning, as evidenced by the questions asked by both tutors and tutees. This conclusion is also supported by empirical research. Regularity, interest, curiosity, respect, and the sharing of ideas were demonstrated by both tutors and tutees, which may indicate motivational components, as supported by other studies in this area. Both Tutors and tutees were in favor of continuing the peer tutoring program for the entire course, which demonstrates their intrinsic motivation for learning. Other studies have also found support for this finding, further confirming that peer tutoring develops motivation for learning. Some minor disciplinary problems were reported, where a small quantity of relaxation was offered, which leads to the conclusion that peer tutoring programs should be supervised and controlled.

Summarizing the key findings of the study, it is clear that peer tutoring has boosted the motivation of participating students. The social and democratic nature of the peer tutoring sessions enabled participants to interact meaningfully, building confidence and responsibility, and creating a positive learning environment. Additionally, analysis of the emerging themes from participant observation demonstrated that peer tutoring is not only a teaching method but also a motivational strategy that increases commitment and engagement with academic tasks in challenging subjects.

Recommendation

Teachers should praise and share the work of good performers because it develops the motivation and confidence of the students.The teacher should be familiar with the student's family and activities, and at least know the student's name. Asking students rarely is beneficial, as it fosters a positive learning environment.The study may be conducted on a diverse sample size with a combination of diverse genders to explore the motivation of the students further. The effects of peer tutoring may be explored in other aspects, such as socialisation development, career counselling, mutual understanding, and reduction in dropout rates.

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