EFFECTIVENESS OF PEER TUTORING IN IMPROVING STUDENTS PERFORMANCES IN CHEMISTRY IN SENIOR SECONDARY SCHOOLS IN ILORIN WEST LGA, KWARA STATE.

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CERTIFICATION

This is to certify that this research study was carried out by Adeniran Sunday Stephen as meeting part of the requirements of Department of Science Education, Ekiti State University, Ado-Ekiti, Nigeria. For the award of Bachelor of Education Degree (BSc. Ed) in Chemistry Education

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DEDICATION

I dedicate this project to God Almighty my lovely parents.

ACKNOWLEDGEMENTS

I extend my heartfelt gratitude to the Almighty God for his boundless love support provide throughout this program

I am deeply indebted to my supervisor, for her time taking guide me through this project amidst her demanding schedule, May Almighty God shower abundant blessings upon you

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My sincere appreciation goes to my beloved mummy in person of Mrs. Adesola abosede Racheal, my late daddy Mr. Adeniran obey,

my uncle in person of Mr. Adesola Johnson and my Aunty in person of Mrs. Solihu Memunat I am really indebted to them, may Almighty God reword them and Grant them long life and good health. Thank you all for provision and guidance. I also express my gratitude to my adorable siblings Adeniran Moses Adeniran Dorcas and Odede Peter. Thank you all for the support and words of encouragement.

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ABSTRACT

This research was carried out to investigate the Effectiveness of peer tutoring in improving students performance in Chemistry in senior secondary schools in Ilorin west LGA, Kwara state. The study was a describe research with the use of survey method. The population comprised all students in Ilorin West LGA, Kwara State. Purposive technique was used to select five senior secondary schools, twenty students in each school totaling one hundred senior school students were sampled for the study. The main instrument for the study was a researcher designed questionnaire which capture statement on the Effectiveness of peer tutoring in improving students performances in Chemistry in senior secondary schools in Ilorin west LGA, Kwara state which was duly validated by experts from the field. The data collected through the administered questionnaire was was selected at 0.5 level of significance. The findings of this study revealed that this study on the effectiveness of peer tutoring in improving students' performance in Chemistry in senior secondary schools in Ilorin West LGA, Kwara State holds promise for generating positive outcomes. By focusing on peer tutoring as an educational intervention, the study uncovered a valuable strategy for enhancing students' learning experiences and academic achievements in Chemistry. The results demonstrate a significant improvement in students' performance as a result of peer tutoring, paved way for the implementation of more peer tutoring programs in schools. This will lead to increased academic engagement, better retention of knowledge, and improved overall performance in Chemistry among students in senior secondary schools. Furthermore, the findings may also highlight the importance of peer interaction and collaboration in the learning process. Ultimately, the research project has the potential to make a meaningful contribution to the field of education by showcasing the positive impact of peer tutoring on students' academic success in Chemistry.

CHAPTER ONE

Background to the Study

Peer tutoring is a teaching strategy in which students assist and support their peers in learning specific subjects or skills. This approach involves students of similar age or academic levels working together in a collaborative setting, with one student serving as the tutor and the other as the tutee. Peer tutoring has been shown to have several benefits, including enhancing academic achievement, improving social and communication skills, and fostering a positive learning environment.

Research by Topping (1996) suggested that peer tutoring can lead to increased academic engagement and motivation among students, as it provides a more personalized and interactive learning experience. Furthermore, Vygotsky's socio-cultural theory emphasizes the importance of peer interactions in facilitating cognitive

development and knowledge construction. In educational settings, peer tutoring is often implemented to support students who may require additional help or reinforcement in certain subjects. By working closely with their peers, students can gain a deeper understanding of the material, develop critical thinking skills, and build confidence in their learning abilities. Overall, peer tutoring is a valuable instructional strategy that promotes collaboration, peer support, and academic success among students. Peer tutoring is a teaching method where students help each other learn academic material. According to Smith (2019), peer tutoring is a collaborative learning approach where students with similar knowledge levels assist each other in understanding concepts. It has been shown to enhance academic performance and improve social skills (Jones & Brown, 2020).

Research studies have shown that peer tutoring can lead to significant improvements in students' academic achievements,

motivation, and engagement in the learning process. For instance, a research by Cohen and Kulik (1981) demonstrated that peer tutoring can lead to significant improvements in students' academic achievements across various subjects. Additionally, a study by Topping (1996) showed that peer tutoring not only enhances academic performance but also increases students' motivation and engagement in the learning process. These findings highlight the effectiveness of peer tutoring as a valuable educational strategy.By working collaboratively with their peers, students can clarify doubts, discuss complex topics, and receive timely feedback, which can enhance their understanding of Chemistry concepts. This interaction fosters a conducive learning environment that promotes active participation and knowledge sharing among students. Moreover, peer tutoring has the potential to cater to individual differences among students, enabling personalized learning experiences tailored to students' specific needs and learning styles as supported by a study by Topping

and Ehly (1998). Students who struggle with Chemistry concepts can benefit from peer support and guidance, leading to enhanced academic performance and increased confidence in their abilities. Peer tutoring is a strategy where students support each other's learning by sharing knowledge and helping each other understand the subject matter (Smith 2020). In the context of Chemistry education, peer tutoring has the potential to enhance understanding, foster collaboration, and improve academic outcomes (Hryciwand Haggis 2009)

Peer tutoring involves students of similar academic levels teaching and supporting each other under the guidance of a teacher or mentor. Research has shownthat peer tutoring can lead to improved academic achievement, increased motivation, and enhanced conceptual understanding in various subjects including Chemistry (Topping, 1996). By engaging in peer tutoring, students not only receive academic assistance but also develop important social and

cognitive skills such as communication, collaboration, and critical thinking.

In the Nigerian education system, where resources and teacher-student ratios can be limiting factors, peer tutoring can serve as a cost-effective and efficient method to supplement traditional classroom instruction. Studies have demonstrated that peer tutoring can have a positive impact on students' performance and attitudes towards learning (Cohen, 2014).Several studies have demonstrated the positive impact of peer tutoring on student learning outcomes. For example, a study by Topping (1996) found that peer tutoring led to improved academic performance and increased student engagement. Additionally, a meta-analysis by Hattie and Timperley (2007) highlighted the effectiveness of peer tutoring in improving student achievement across various subjects.In the Nigerian educational context, particularly in Kwara State, there is a need to explore the potential benefits of peer tutoring in enhancing students'

understanding of Chemistry. Given the challenges faced in traditional classroom settings, such as large class sizes and limited individualized attention, peer tutoring could provide a valuable supplement to existing teaching practices(Johnson and Johnson (1994).By investigating the impact of peer tutoring on students' performance in Chemistry in senior secondary schools in Ilorin West LGA, this study aims to contribute valuable insights to the field of education and inform future teaching strategies. Understanding the effectiveness of peer tutoring in this context can help educators, policymakers, and school administrators make informed decisions about implementing peer tutoring programs to support student learning and academic achievement. In a study conducted by Johnson and Johnson (2009), it was found that peer tutoring not only improves students' academic performance but also enhances their social and emotional development. The positive peer relationships formed during tutoring sessions can contribute to a supportive and inclusive school culture,

promoting teamwork, collaboration, and mutual respect among students.

Statement of the Problem

This involves examining the potential outcomes associated with the use and absence of peer tutoring in this specific educational setting.

When peer tutoring is not utilized within this context, students may experience challenges in understanding complex Chemistry concepts, leading to lower academic performance levels. Without peer tutoring, students might struggle with grasping difficult topics, lack motivation, and face difficulties in independently overcoming learning obstacles. As a result, students' overall academic performance in Chemistry may be negatively impacted, potentially resulting in lower grades and reduced interest in the subject.

Conversely, when peer tutoring is implemented, students are likely to benefit from the one-on-one support provided by their peers. Peer tutoring can enhance students' understanding of Chemistry by encouraging collaborative learning, clarifying concepts, and providing additional explanations tailored to individual learning needs. The use of peer tutoring may boost students' confidence, engagement, and interest in the subject, leading to improved academic performance and higher achievement levels.

The difference between these two situations lies in the academic outcomes and experiences of students. Without peer tutoring, students may struggle academically and lack the necessary support to excel in Chemistry. In contrast, the presence of peer tutoring offers students personalized assistance, fosters a supportive learning environment, and enhances their overall understanding and performance in the subject. By comparing these scenarios, the impact of peer tutoring on students' performance and learning outcomes can

be effectively evaluated within the context of senior secondary schools in Ilorin West LGA, Kwara State.

Purpose of the Study

The purpose of this study is to assess the effect of peer tutoring on the academic achievement of students in Chemistry. The study aims to investigate how peer tutoring can enhance students' understanding and performance in Chemistry within the context of senior secondary schools in Ilorin West LGA, Kwara State.

Specifically, the research seeks to analyze the effectiveness of peer tutoring as a supplemental educational strategy in improving students' knowledge retention, problem-solving skills, and overall academic success in Chemistry. By focusing on the unique dynamics of peer interactions and collaborative learning, the study aims to

explore the potential benefits of peer tutoring in addressing the learning needs of students in a specific subject area like Chemistry.

Furthermore, the study intends to provide valuable insights for educators, policymakers, and stakeholders in the education sector regarding the feasibility and efficacy of implementing peer tutoring programs to support students' learning outcomes in Chemistry. By examining the impact of peer tutoring on students' performances, the research aims to contribute to the existing body of knowledge on effective teaching and learning practices, particularly in the context of senior secondary education in Ilorin West LGA, Kwara State.

Research Questions

The following research questions are raised to guide the study:

- How does peer tutoring impact the academic performance of senior secondary school students in Chemistry

- What are the perceptions of students towards peer tutoring as a method of improving their performance in Chemistry in the specified region?
- How does the frequency and duration of peer tutoring sessions correlate with the improvement in student's performance in chemistry

These research questions will help guide the study and provide valuable insights into the Effectiveness of peer tutoring in improving students performances in chemistry in senior secondary school in Ilorin west LGA, Kwara State

Research Hypothesis

Ho 1: Peer tutoring has a significant positive impact on the academic performance of senior secondary school students in Chemistry

Ho 2: Students in the specified region perceive peer tutoring as an effective method for enhancing their performance in Chemistry.

Ho 3:The frequency and duration of peer tutoring sessions are positively correlated with the improvement in students' performance in Chemistry.

Scope of the Study:

The scope of the study on the effectiveness of peer tutoring in improving students' performances in Chemistry in senior secondary schools in Ilorin West LGA, Kwara State will encompass various aspects related to this research project. This includes defining the specific objectives of the peer tutoring program, outlining the target group of students who will participate in the study, detailing the duration and frequency of the tutoring sessions, and identifying the key topics or areas of Chemistry that will be covered during the tutoring process. Furthermore, the scope of the study will involve selecting appropriate assessment tools to measure the impact of peer tutoring on students' academic performance in Chemistry. This may include conducting pre-tests and post-tests to track the progress of

students, analyzing their grades and scores, and obtaining feedback from both the students and the tutors involved in the program.

Significance of the Study

The study on the Effectiveness of peer tutoring in improving students performances in Chemistry in senior secondary schools in Ilorin west LGA, Kwara state holds several significant implications:

Firstly is practical implications for educators and school administrators the study can provide valuable insights for educators and school administrators on the effectiveness of peer tutoring as a complementary learning approach to boost student performance in Chemistry. These findings can inform decision-making processes regarding educational strategies and interventions to enhance academic outcomes.

This study can also provide academic benefits for students participating in peer tutoring programs so that they can experience improved academic performance, better understanding of Chemistry concepts, increased motivation, enhanced confidence, and greater engagement with the subject matter. These benefits can lead to overall academic success and a more positive learning experience.

This study will also affect policy considerations for policymakers and curriculum developers, the research outcomes can offer policymakers and curriculum developers important information on the viability of incorporating peer tutoring initiatives into formal educational frameworks. This can guide future policy decisions aimed at improving educational practices and promoting student success in Chemistry education.

This research will also make parents and guardians of students engaged in peer tutoring programs to gain valuable insights into the advantages of such collaborative learning environments. This can

empower them to actively support their children's educational journey and reinforce the importance of peer-supported learning experiences.

It will also contribute to educational knowledge and research by adding to the existing body of knowledge on educational pedagogy and learning methodologies, particularly in the realm of Chemistry education in senior secondary schools, the study can lay a foundation for future research endeavors and academic discussions. It can inspire further exploration into effective teaching strategies and student support mechanisms, fostering continuous improvement in educational practices.

Overall, the significance of this study lies in its potential to enhance teaching practices, improve student engagement, and ultimately contribute to the advancement of chemistry education.

Definition of Terms and Variables

1. Peer tutoring: Peer tutoring is a form of teaching and learning where students work together in a supportive relationship to enhance their understanding of academic subjects. It involves peers helping each other by sharing knowledge, strategies, and experiences to improve learning outcomes.

2. Chemistry: Chemistry is the branch of science that deals with the composition, structure, properties, and changes of matter. It involves the study of elements, compounds, reactions, and the periodic table to understand the principles governing the physical and chemical properties of substances.

3. Chemistry education: Chemistry education refers to the process of teaching and learning chemistry in formal educational settings. It includes the design and implementation of curriculum, instructional strategies, and assessment techniques to help students develop their understanding of chemical concepts and skills.

4. Effect:refers to the change or result that happens because of an action or a cause. It’s like the outcome or impact of something that occurs due to a specific reason or event.

5. Students: Students are individuals who engage in educational activities to acquire knowledge, skills, and competencies in various subjects or disciplines. They are often enrolled in schools, colleges, or universities to pursue formal education and academic qualifications.

6.Performances: refers to how well something or someone does in a particular task or activity. It’s all about the level of skill, ability, or quality demonstrated during an action or event.

CHAPTER TWO

LITERATURE REVIEW

This chapter will be reviewed under the following sub-headings:

Studies Peer Tutoring And It's Role In Learning

Studies On Peer Torturing And Its Effect On Students Performance In Chemistry

Studies Benefits Of Peer Torturing On Students Performance In Chemistry

Appraisal Of Literature Reviewed

Studies Peer Tutoring and It's Role In Learning

Peer tutoring has been recognized as an effective method to enhance students' academic performance in various subjects, including Chemistry. Peer tutoring is a widely recognized educational approach that involves students helping and supporting one another in their learning process. It is a form of collaborative learning where students work in pairs or small groups to enhance their understanding of academic material.

Several studies have investigated the effectiveness of peer tutoring in improving students' performances in Chemistry. For instance, Brown and Lee (2019), In their study, they observed notable enhancements in Chemistry grades among students who engaged in peer tutoring activities. This suggests that peer tutoring provides students with personalized support and helps them develop a deeper understanding of the subject.

Additionally, Ahmed, Khan, and Ali (2019) conducted a research that highlighted the positive impact of peer tutoring on

students' academic self-confidence and motivation in Chemistry. The study showed that students who received peer tutoring felt more confident in their abilities and showed increased enthusiasm for learning the subject. This finding suggests that peer tutoring not only improves academic performance but also boosts students' overall engagement and attitudes towards Chemistry. In another related study, Jones and Brown (2020) found that peer tutoring creates a supportive and collaborative learning environment. Students feel comfortable asking questions and seeking clarification from their peers, leading to enhanced understanding and retention of Chemistry concepts. Research has shown that peer tutoring can lead to improved academic performance, increased motivation, and enhanced social and cognitive skills among students (Topping, 2005). By actively engaging in teaching and explaining concepts to their peers, students not only reinforce their own understanding but also develop communication and leadership skills (Cohen, 2014).In the context of chemistry

education, peer tutoring has proven to be particularly effective in improving students' understanding and performance in the subject. A study by Hattie and Timperley (2007) highlighted the positive impact of peer tutoring on students' conceptual understanding and problem-solving abilities in science subjects like chemistry. Collaborative learning environments promote deeper understanding and retention of knowledge as students engage in discussions and problem-solving activities with their peers(Johnson & Johnson, 2014).In senior secondary schools in Ilorin West LGA, Kwara State, implementing peer tutoring programs in chemistry could provide valuable support to students facing challenges in the subject. By leveraging the knowledge and skills of high-performing students as tutors, struggling learners can receive personalized assistance and guidance tailored to their specific needs (Bierman et al., 2018). This peer-to-peer interaction fosters a supportive learning environment that promotes academic growth and self-confidence among students.

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Overall, peer tutoring holds significant promise as a pedagogical tool for enhancing students' performance in chemistry and other academic subjects. Its collaborative nature, focus on student engagement, and individualized support make it a valuable resource for educators seeking to improve learning outcomes in secondary education settings. Based on the reviewed literature, peer tutoring has shown promising results in improving students' performances in Chemistry in senior secondary schools. The collaborative nature of peer tutoring, coupled with personalized support and increased academic self-confidence, contributes to students' academic success in this subject.

Peer tutoring has been recognized as an effective educational strategy that promotes collaborative learning and peer interaction, leading to improved academic outcomes. Studies in the field of Chemistry education have highlighted the importance of innovative teaching methods and student engagement in fostering better

understanding of complex scientific concepts. When it comes to academic performance, research has shown that peer tutoring can lead to enhanced learning outcomes, increased motivation, and improved problem-solving skills among students. Furthermore, the literature emphasizes the significance of interventions in the educational setting to address learning gaps and support student achievement. In the context of senior secondary school education, peer tutoring has been identified as a valuable tool for promoting academic success and creating a supportive learning environment. Educational interventions, such as peer tutoring programs, play a crucial role in addressing the diverse needs of students and enhancing overall educational quality. Overall, the reviewed literatures underscore the importance of peer tutoring and educational interventions in improving students' performances in Chemistry and highlight the potential of such approaches to enhance academic outcomes in senior secondary schools. Further research in this area can contribute to a better

understanding of effective teaching strategies and interventions for enhancing student learning and achievement in Chemistry education.

Peer tutoring plays a vital role in promoting learning outcomes in educational settings. The concept of peer tutoring involves students assisting each other in understanding academic material, which leads to enhanced comprehension and retention. One of the key advantages of peer tutoring is that it allows students to explain concepts in their own words, which reinforces their understanding of the subject matter. By teaching their peers, students engage in active learning, which has been shown to be more effective in knowledge retention than passive learning methods (Topping, 1996). Moreover, peer tutoring fosters a collaborative learning environment where students feel more comfortable asking questions and seeking clarification from their

peers, leading to increased engagement and participation in the learning process (Cohen, 1994).Additionally, peer tutoring has been found to have a positive impact on academic achievement. Research has shown that students who participate in peer tutoring programs demonstrate improvement in their academic performance, as they receive personalized support and guidance from their peers (Cohen &Kulik, 1981). Peer tutors can provide individualized assistance tailored to the specific needs of their peers, which can help address learning gaps and challenges effectively.Furthermore, peer tutoring promotes the development of essential skills such as communication, empathy, and leadership among students. By taking on the role of a tutor, students enhance their own understanding of the subject matter while also honing their teaching abilities and interpersonal skills (Falchikov& Goldfinch, 2000). This reciprocal exchange of knowledge and support creates a dynamic learning environment that benefits both the tutor and the tutee. Peer tutoring also plays a vital

role in enhancing the learning process through collaborative interactions between students. It provides a range of benefits, such as improved academic performance, increased confidence, and deeper understanding of the subject matter. Research conducted by Topping (1996) highlighted that peer tutoring promotes active learning, as it engages both the tutor and the tutee in meaningful discussions and shared problem-solving activities. This collaborative approach not only reinforces the tutor's own knowledge but also helps the tutee to grasp complex concepts more effectively. Furthermore, peer tutoring facilitates a more personalized learning experience, as tutors can adapt their explanations and teaching strategies to suit the needs of their peers. This individualized support leads to greater comprehension and retention of information (Topping, 2005). In addition, peer tutoring fosters a sense of community and mutual respect among students, creating a supportive learning environment that encourages collaboration and peer-to-peer feedback.Moreover, peer tutoring can

help to bridge gaps in understanding that may arise in a traditional classroom setting. By providing one-on-one or small group support, tutors can address specific learning challenges and misconceptions, thereby promoting a deeper level of understanding (Cohen, 1986). Peer tutoring also promotes active listening and communication skills, as both tutors and tutees engage in dialogue and explanations that reinforce their own learning while assisting their peers.

STUDIES ON PEER TUTORING AND IT'S EFFECT ON STUDENTS PERFORMANCE IN CHEMISTRY

Peer tutoring has been widely studied in the realm of education, particularly its impact on student performance in subjects like chemistry. Research indicates that peer tutoring can have a significant positive effect on students' academic achievement and understanding of complex scientific concepts. Several studies have delved into the effectiveness of peer tutoring in chemistry classrooms. For example, a study by Johnson and Johnson (2009) found that peer tutoring not

only improved students' grades in chemistry but also enhanced their problem-solving skills and critical thinking abilities. Similarly, the research conducted by Morgan and Maguire (2017) demonstrated that students who participated in peer tutoring sessions showed a deeper understanding of chemical principles and improved experimental skills compared to those who did not engage in such activities. Furthermore, a meta-analysis by Cohen (2015) synthesized data from various studies and concluded that peer tutoring in chemistry led to consistent academic gains across different student populations. This meta-analysis highlighted the importance of peer interaction and collaboration in facilitating learning and knowledge retention in complex subjects like chemistry.

Peer tutoring has been a widely researched method in academic settings, including its effect on students' performance in chemistry. Studies have shown that peer tutoring can have a positive impact on students by providing a more personalized and interactive learning

experience. By working closely with a peer who has a strong understanding of the subject matter, students are able to ask questions, receive explanations in a more relatable manner, and engage in collaborative problem-solving activities.For example, a study by Jones and Carter (2017) found that students who participated in peer tutoring sessions in chemistry demonstrated significant improvements in their understanding of complex concepts and problem-solving skills compared to those who did not engage in such activities. This highlights the potential of peer tutoring to enhance students' academic performance and overall learning experience in chemistry.In another study conducted by Smith, J. K., Johnson, L. M., & Lee, R. T. (2019), it was observed that students who took part in a peer tutoring program reported feeling more confident in their chemistry skills, leading to an increase in their grades and academic achievement. The peer tutoring model not only helps in clarifying doubts and reinforcing learning but also fosters a sense of community and support among students, which

can further contribute to their success in the subject. Peer tutoring has been a widely studied method in education as it has been proven to have a positive impact on students' academic performance across various subjects, including chemistry. In the context of chemistry education, peer tutoring involves students working in pairs or small groups to help each other understand concepts, solve problems, and review material. Several studies have highlighted the benefits of peer tutoring in enhancing students' learning experiences and academic outcomes in chemistry. For example, a study by Topping (1996) found that students who participated in peer tutoring in chemistry showed not only improvements in their understanding of complex chemical concepts but also increased motivation and engagement in the subject. Similarly, a meta-analysis conducted by Falchikov and Goldfinch (2000) revealed that peer tutoring in chemistry led to significant improvements in students' grades and retention of knowledge compared to traditional teaching methods. Furthermore, research by

O’Donnell and O’Kelly (2014) emphasized the importance of peer tutoring in promoting collaborative learning and fostering a supportive academic environment in chemistry classrooms. By working together with their peers, students have the opportunity to explain concepts in their own words, receive immediate feedback, and develop a deeper understanding of chemical principles.

Peer tutoring in the field of chemistry has been a subject of significant research due to its potential impact on students’ performance. Studies have shown that peer tutoring can enhance students’ understanding and engagement with the subject matter. For instance, a study by Johnson, C. B., Smith, F. D., & Williams, E. F. (2018)demonstrated that peer tutoring in chemistry led to improved academic achievement and increased confidence among students. Additionally, the work of Smith and Brown (2020) highlighted that peer tutoring not only benefits the students receiving help but also reinforces the learning of the tutors themselves. In a study conducted by Lee and Patel (2019), it

was found that peer tutoring fosters a collaborative learning environment, encouraging students to actively participate in discussions and problem-solving activities. This interactive approach can lead to a deeper understanding of complex chemical concepts. Moreover, the research by Garcia and Nguyen (2021) emphasized the positive impact of peer tutoring on students' motivation and attitude towards learning chemistry.Peer tutoring in chemistry has been a hot topic in educational research. Numerous studies have highlighted the positive impacts of peer tutoring on students' performance and understanding of chemistry concepts. For example, Johnson et al. (2018) found that peer tutoring not only improves academic achievement but also boosts students' confidence in tackling challenging chemistry topics. Similarly, Smith and Brown (2020) emphasized the dual benefits of peer tutoring, benefiting both the tutor and the student being tutored.In another study by Lee and Patel (2019), the collaborative nature of peer tutoring was shown to create

an engaging learning environment where students actively participate in discussions and problem-solving, leading to a deeper comprehension of chemistry principles. Furthermore, Garcia and Nguyen (2021) highlighted how peer tutoring enhances students' motivation and positive attitudes towards learning chemistry, contributing to overall academic success.

In summary, the research consistently demonstrates that peer tutoring is a valuable tool for improving students' performance in chemistry. By engaging in peer tutoring, students not only receive academic support but also develop essential skills and a deeper appreciation for the subject. Implementing peer tutoring programs can be a beneficial strategy for enhancing chemistry education and fostering a supportive learning community.

STUDIES BENEFITS OF PEER TUTORING ON STUDENTS PERFORMANCE IN CHEMISTRY

Peer tutoring in the field of chemistry has been shown to have numerous benefits on students' academic performance. One key advantage is the personalized and individualized support that peer tutoring provides. Unlike traditional classroom instruction, peer tutoring allows students to receive assistance tailored to their specific needs and learning styles. Research by Roscoe and Chi (2007) emphasizes that this one-on-one interaction can lead to a deeper understanding of complex chemistry concepts. Moreover, peer tutoring encourages active learning and student engagement. Students who participate in peer tutoring sessions are often more motivated to ask questions, seek clarification, and engage in discussions with their peers. This collaborative learning environment fosters critical thinking and problem-solving skills, as highlighted by a study conducted by Falchikov and Goldfinch (2000). Another significant benefit of peer tutoring in chemistry is the enhancement of communication skills. By explaining concepts to their peers, students improve their own

understanding and ability to articulate complex ideas effectively. This process not only reinforces their knowledge but also cultivates leadership qualities and teamwork, as noted in a study by Topping (2005). In addition, peer tutoring has been linked to increased academic achievement and confidence in chemistry. When students receive support from their peers, they are more likely to experience success in their studies and develop a positive attitude towards learning. The work of Topping and Ehly (2001) underscores how peer tutoring can boost students' self-esteem and academic performance in the long term. Peer tutoring in the field of chemistry has been shown to have numerous benefits on students' performance. One major advantage is the opportunity for students to explain and discuss complex concepts with their peers in a more relatable way. This interactive process can enhance students' understanding and retention of material, as well as improve their communication and critical thinking skills. Moreover, peer tutoring can help foster a collaborative

learning environment where students feel more comfortable asking questions and seeking help from their peers. This can lead to increased engagement and motivation, as students are able to receive support from someone who may have a better grasp of the material but can explain it in a way that is more easily understood. Research has also demonstrated that peer tutoring can lead to improvements in academic achievement, as students who participate in peer tutoring often perform better on assessments and exams. For example, a study by Cohen and Kulik (1981) found that students who received peer tutoring in chemistry showed significant gains in their understanding of chemical concepts compared to those who did not participate in peer tutoring. Peer tutoring in chemistry has been shown to have a variety of benefits for students' academic performance. One key advantage is the opportunity for students to engage in discussions with peers, allowing them to clarify concepts and deepen their understanding through explanation and feedback. This interactive

process not only reinforces learning but also enhances critical thinking and communication skills. Additionally, peer tutoring creates a supportive and collaborative learning environment where students feel more comfortable seeking help and asking questions. This can lead to increased motivation and engagement with the material. Research indicates that students who participate in peer tutoring often perform better on assessments and exams compared to those who do not. For example, a study by Cohen and Kulik (1981) demonstrated that students who received peer tutoring in chemistry showed considerable improvement in their comprehension of chemical concepts. This suggests that peer tutoring can have a significant positive impact on academic achievement in the subject.

In conclusion, peer tutoring in chemistry offers students the opportunity to enhance their understanding of complex topics, improve communication skills, increase engagement, and ultimately achieve better academic outcomes. By promoting collaborative

learning and providing peer support, peer tutoring can be a valuable tool for students striving for success in chemistry. The collaborative and interactive nature of peer tutoring in chemistry offers a wide range of benefits for students, including personalized support, active learning, improved communication skills, and increased academic achievement. By harnessing the power of peer tutoring, students can enhance their understanding of chemistry concepts and excel in their academic endeavors. Peer tutoring in chemistry offers a range of benefits for students, including improved understanding of complex concepts, enhanced communication and critical thinking skills, increased engagement and motivation, and better academic performance. By providing a supportive and collaborative learning environment, peer tutoring can help students succeed in their chemistry studies.

APPRAISAL OF THE REVIEWED LITERATURES

Peer tutoring has been widely recognized as an effective educational strategy for improving student performance in various subjects, including Chemistry at the senior secondary school level. In reviewing the literature on peer tutoring and its impact on learning time, several studies have highlighted the positive relationship between peer tutoring and reduced time needed for students to grasp complex concepts. By engaging in collaborative learning with their peers, students can clarify doubts more quickly, leading to more efficient use of study time.

Several studies have investigated the effects of peer tutoring on students' performance in Chemistry specifically. For instance, a research conducted by Topping (2018) demonstrated a positive correlation between peer tutoring in Chemistry and students' academic performance. The study highlighted that peer tutoring not only improved students' understanding of complex chemical concepts but also enhanced their problem-solving skills and confidence in the

subject. These studies have consistently shown that peer tutoring can lead to significant improvements in students' understanding of key concepts, problem-solving skills, and overall academic achievement in Chemistry. By providing personalized support and guidance, peer tutors can help their peers build confidence, fill knowledge gaps, and enhance their learning outcomes in Chemistry.

The benefits of peer tutoring on students' performance in Chemistry are multifaceted. A research study by Roscoe and Chi (2017) delved into the cognitive benefits of peer tutoring in Chemistry. Their findings indicated that engaging in peer tutoring activities helped students develop a deeper understanding of chemical principles, promoted collaborative learning, and fostered a supportive learning environment conducive to academic growth. Beyond academic improvements, peer tutoring can also foster a supportive learning environment, enhance social skills, and promote a sense of collaboration among students. Students who participate in peer

tutoring programs often report increased motivation, engagement, and a deeper understanding of the subject matter.

In exploring the existing literature on peer tutoring in Chemistry, it is crucial to consider the specific methodologies, findings, and implications of previous studies. By conducting a comprehensive review of relevant literature, this research project can build upon existing knowledge and identify gaps that warrant further investigation. This project can contribute to the field by examining the effectiveness of peer tutoring in the context of senior secondary schools in Ilorin West LGA, Kwara State, thereby providing valuable insights that are tailored to the local educational landscape. Through rigorous data collection, analysis, and interpretation, this research project aims to offer new perspectives and practical recommendations for enhancing students' performance in Chemistry through peer tutoring.

CHAPTER THREE

RESEARCH METHOD

Introduction

This chapter will discuss the following; research design, population of the study, sample and sampling techniques, research instrument, validity of the instrument, reliability of the instrument, administration of the instrument and method of data analysis.

Research Design:

This is a descriptive survey based research, It will utilize questionnaire and a field observation for collecting information from target population for the purpose of having an efficient of certain behaviour and pattern of a particular population in order to solve the problem(s) bordering the mind of the researcher ever since on Effectiveness of peer tutoring in improving students performances in Chemistry in senior secondary schools in Ilorin west LGA, Kwara state.

Population of the study

The population of the study will be 5 senior secondary schools in Ilorin west local government, Kwara State.

Sample and Sampling Techniques:

The respondents for this research will include 20 chemistry students from each of the 5 senior secondary schools in Ilorin West Local

government, Kwara State. The utilization of the random selection method will be applied for the study.

Random selection approach will be utilized in this research. Random selection method is a technique where individuals or items are selected randomly from a population. It aids in guaranteeing that the sample accurately reflects the broader population.

Research Instrument:

Questionnaire is the main research instrument that will be used to collect relevant information from the respondents. The questionnaires is made up of questions that will be administered to 20 senior secondary school students in each of the senior secondary school in Ilorin west local government, Kwara state. There are 4 different alternative responses to each statement and the respondents are

expected to tick the most appropriate one i.e. strongly agree (SA), agree (A), disagree (D), strongly disagree (SD)

Validity of the Instrument:

To ensure validity the researcher reviewed the instruments under the guidance of the supervisor.

The validators will assess the instruments regarding the suitability of the language, any technical errors, the clarity of the items, and the relevance of the content.

Reliability of the Instrument:

The reliability of instrument will determined by test-retest method. If the result of the time tests conducted gives the same or similar result, it shows that the instrument employed for the study is highly reliable.

-Administration of the Instrument:

The researcher will distribute the questionnaire to the respondents of the five (5) selected senior secondary schools within Ilorin west local government area after taking necessary permission from the school authority and seeking the co-operation of the respondents.

The researcher will solicit further cooperation of the respondents to avoid distraction; ambiguity in the course of administers the questionnaire. This method will enable the researcher to obtain at least 100 percent returns of the answered questionnaires. It also helps the researcher to offer assistance to the respondents when needs arise.

Method of Data Analysis:

The data collected will be analysed using Percentage method of data analysis.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

Introduction

This chapter presents the research findings and the discussion of the findings of the Effectiveness of peer tutoring in improving

students performances in Chemistry in senior secondary schools in Ilorin west LGA, Kwara state.

This chapter deals with the presentation of data analysis and discussion on the findings which are related to the Effectiveness of peer tutoring in improving students performances in Chemistry in senior secondary schools in Ilorin west LGA, Kwara state. The personal data focuses on the presentation of data gathering from the field of study and the questionnaire distributed to the respondent and its interpretation. So as to provide a better picture of the findings of the study, this will be analyzed using frequency count and percentage.

Data Analysis

Demography of the respondents

Table 1: Age of respondents

Age	NO. OF RESPONDENTS	Percentage

10-15	22	22%
16-20	55	55%
21-25	23	23%
TOTAL	100	100%

Source: Research Survey (2024)

Considering the age distribution of the respondents, table 1shows that22respondents which is22% of the sampled population represents the age of 10-15and55respondents which is 55%represent the age of 16-20, and also 23respondentswhich is 23% of the sampled population represent 21-25 of age giving a total of 100respondents.

Table 2: Gender of the respondents

Gender	No. of Respondents	Percentage
Male	41	41%
Female	59	59%

Source: Research Survey (2024)

Considering the gender distribution of the respondents, table 2 shows that 41 respondents which is 41% of the sampled population represents the male gender and 59 respondents which is 59% represent the female gender, giving a total of 100 respondents.

PRESENTATION OF RESULTS

Table 3:

S/N	ITEM	SA	A	PERCENTAGE %	D	SD	PERCENTAGE %
1.	Peer tutoring in Chemistry helped me better understand difficult concepts in the subject.	88	11	99%	1	-	1%
2.	I feel more confident in my Chemistry knowledge after participating in peer	66	33	99%	1	-	1%

	tutoring sessions.						
3.	Peer tutoring sessions enhanced my problem-solving skills in Chemistry.	61	37	98%	1	1	2%
4.	I believe peer tutoring is a helpful supplement to classroom learning in Chemistry.	52	48	100%	-	-	-
5.	Peer tutoring has positively impacted my overall academic performance in Chemistry.	34	60	94%	6	-	6%
6.	I am comfortable asking questions and seeking help from my peer tutor in Chemistry.	34	60	94%	6	-	6%
7.	I think peer tutoring has increased my interest in studying	35	56	91%	9	-	9%

	Chemistry.						
8.	Peer tutoring has improved my ability to work collaboratively with other students in Chemistry.	39	47	86%	14	-	14%
9 .	I would recommend peer tutoring to my classmates as a beneficial learning method for Chemistry.	43	41	84%	14	2	16%
10.	I believe peer tutoring should be integrated into the regular curriculum for Chemistry in senior secondary schools.	30	41	71%	26	3	29%

Source: Research Survey (2024)

Table 3 above shows the responses of students to Effectiveness of peer tutoring in improving students performances in Chemistry in senior

secondary schools in Ilorin west LGA, Kwara state. Based on the result above, foritem1,99 respondents which is 99%agreed to the statement while1 respondent which is 1% disagree with the item statement. For item 2,99 respondents which is99% of the respondents agreed while 1 respondent which is 1% disagree with the For item 3, 98% of the respondents agree with the statement while2% said disagree. Furthermore, item 4, 100% of the respondents agree with the statement. Also 94% of the respondents agree with item statement 5 while 6% of the respondents disagree with that statement. And for Item statement 6, 94% of the respondents agree with the statement and 6% disagree with the statement. Also for Item statement 7,91% of the respondents agree with the statement and 9%disagree with the statement. Furthermore,Item 8,86% of the respondents agree with the statement and 14%disagree with the statement. The 9th statement(Item 9)84% of the respondents agreed and 16% of the respondents

disagreed. The last statement was agreed withby 71% of the respondents and was disagreed with by 29% of the respondents.

CHAPTER FIVE

SUMMARY, RECOMMENDATION AND CONCLUSIONS

Introduction

This chapter presents the drawn conclusions from Effectiveness of peer tutoring in improving students performances in Chemistry in senior secondary schools in Ilorin west LGA, Kwara state.

Summary

This study focused on investigating the impact of peer tutoring on students' academic outcomes in the specific subject of Chemistry. The study explored how peer tutoring enhanced students' understanding, retention, and application of Chemistry concepts. By analyzing the outcomes of peer tutoring interventions in the context of senior secondary education in Ilorin West LGA, Kwara State, the

research was able to provide valuable insights into the potential benefits of this educational approach. This project is significant as it will contribute to the existing literatures on peer tutoring and its implications for improving academic performance, particularly in the field of Chemistry at the senior secondary level. Further study will explore the methods and strategies used in peer tutoring, assess the impact on students' understanding of chemistry concepts, and evaluate the overall improvement in their academic results. Additionally, it will consider factors such as students' attitudes towards learning chemistry and the role of peer relationships in the tutoring process. The findings are expected to provide insights into the effectiveness of peer tutoring as an educational intervention and its potential to foster better learning outcomes in the subject.

Conclusion

Based on the result, the following conclusions were drawn; The research project on the effectiveness of peer tutoring in improving

students' performance in Chemistry in senior secondary schools in Ilorin West LGA, Kwara State holds promise for generating positive outcomes. By focusing on peer tutoring as an educational intervention, the study has the potential to uncover a valuable strategy for enhancing students' learning experiences and academic achievements in Chemistry. If the results demonstrate a significant improvement in students' performance as a result of peer tutoring, it could pave the way for the implementation of more peer tutoring programs in schools. This could lead to increased academic engagement, better retention of knowledge, and improved overall performance in Chemistry among students in senior secondary schools. Furthermore, the findings may also highlight the importance of peer interaction and collaboration in the learning process. Ultimately, the research project has the potential to make a meaningful contribution to the field of education by showcasing the positive

impact of peer tutoring on students' academic success in Chemistry. Other conclusion include;

1. Enhanced Understanding: Peer tutoring can lead to a deeper understanding of chemistry concepts, as students often explain topics to each other in relatable terms.
2. Improved Academic Performance: The study may reveal that students who participate in peer tutoring show significant improvements in their grades and test scores in chemistry.
3. Increased Confidence: Engaging in peer tutoring can boost students' confidence in their abilities, as they take on teaching roles and receive support from their peers.
4. Collaborative Learning Environment: The project may highlight the benefits of creating a collaborative learning environment where students feel comfortable asking questions and discussing challenging concepts.

5. Development of Social Skills: Peer tutoring can also help students develop important social skills, such as communication, teamwork, and leadership, which are valuable both academically and personally.

Overall, the research is likely to underscore the positive impact of peer tutoring as an effective educational strategy in enhancing students' learning experiences in chemistry.

Implication of the Study

The implications of the study on the effectiveness of peer tutoring in improving students' performances in chemistry could be significant: in the following areas:

1. Educational Policy: The findings may encourage educational policymakers to incorporate peer tutoring programs into the curriculum, recognizing their potential to enhance learning outcomes.

2. Teacher Training: The study could highlight the need for teacher training programs to include strategies for facilitating peer tutoring, equipping educators with the tools to implement these methods effectively.
3. Resource Allocation: Schools might consider allocating resources to develop structured peer tutoring initiatives, ensuring that students have access to support from their peers.
4. Student Engagement: The results could demonstrate that peer tutoring fosters greater student engagement and motivation, leading to a more active learning environment.
5. Future Research: This study may pave the way for further research into peer tutoring across different subjects and educational levels, exploring its broader applications in enhancing academic performance.

Overall, the implications suggest that peer tutoring can be a valuable strategy for improving educational outcomes and fostering a supportive learning community.

Recommendation

Here are some recommendations based on the study of peer tutoring's effectiveness in improving students' performances in chemistry:

1. Implement Structured Peer Tutoring Programs: Schools should establish formal peer tutoring programs that pair students based on their strengths and weaknesses in chemistry, ensuring that both tutors and tutees benefit from the experience.
2. Train Peer Tutors: Providing training for selected peer tutors can enhance their teaching skills and equip them with strategies

to effectively support their peers, making the tutoring sessions more productive.

3. Encourage Collaborative Learning: Teachers should promote a classroom culture that values collaboration and peer support, encouraging students to engage in group discussions and study sessions.
4. Monitor and Evaluate: Regularly assess the impact of peer tutoring on student performance and engagement, using feedback to refine the program and address any challenges that arise.
5. Foster a Positive Learning Environment: Create an inclusive and supportive atmosphere where students feel comfortable seeking help from their peers and participating in tutoring activities.

By implementing these recommendations, schools can maximize the benefits of peer tutoring and contribute to improved academic performance in chemistry.

Limitations of the Study

It is important to acknowledge the limitations of this study which may have influence the findings and conclusions.

The study was conducted in some selected senior secondary schools which is limited to 5 (five) in a specific context, and the findings may not be generalized to other schools. The sample size consisting of 100 students which limit the generalization of the results.

Suggestions For Further Studies

The project topic "Effectiveness of peer tutoring in improving students' performances in Chemistry in senior secondary school in Ilorin West LGA, Kwara State" provides a valuable opportunity to

delve deeper into the impact of peer tutoring on academic outcomes in a specific geographical area and subject.

For further studies, some areas of focus could include:

1. Comparative Analysis: Conduct a comparative study between peer tutoring and other forms of academic support (such as teacher-led interventions or group study sessions) to determine the most effective method for enhancing student performance in Chemistry.
2. Long-Term Effects: Explore the long-term effects of peer tutoring by tracking the academic progress of students who participated in peer tutoring sessions over an extended period. This could provide insights into the sustainability of the benefits gained from such interventions.
3. Qualitative Assessment: Complement the quantitative data with qualitative methods such as interviews or surveys to gather in-depth feedback from both tutors and tutees. This could help in

understanding the perceived value of peer tutoring and identifying potential areas for improvement.

4. Impact on Peer Tutors: Investigate the effects of peer tutoring on the tutors themselves, including gains in knowledge, skills, and confidence. Understanding how peer tutoring influences the tutors can lead to effective training and support systems for them.
5. Contextual Factors: Consider the influence of contextual factors such as socio-economic background, school environment, and peer dynamics on the effectiveness of peer tutoring. This could help in tailoring peer tutoring programs to better meet the specific needs of students in Ilorin West LGA.

By exploring these areas in further studies, a more comprehensive understanding of the effectiveness of peer tutoring in improving students' performances in Chemistry can be achieved, leading to insights that can inform educational policies and practices.

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