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Enhancing student learning outcomes through visual teaching materials in Christian religious education for elementary schools

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ABSTRACT

This study investigated the impact of visual instructional materials on the learning outcomes of primary school pupils in Christian Religious Studies (CRS) in Ado-Ekiti, Ekiti State, Nigeria. The purpose of this study is to examine the effectiveness of using visual teaching materials in Christian Religious Education at the elementary school level to improve student learning outcomes and develop more innovative, engaging teaching strategies. The study used Bible story pictures in instruction with a quasi-experimental design involving 119 Primary 5 CRS pupils in Ado-Ekiti. Data were gathered via the Christian Religious Studies Achievement Test (CRSAT) and analyzed using t-tests and ANOVA to evaluate learning outcomes. The findings revealed a significant difference in the post-test scores between the experimental and control groups, indicating the effectiveness of the chalk and talk method supplemented with visual instructional materials. However, the interaction between treatment and gender was found to be statistically insignificant. Based on these findings, it is recommended that primary school teachers in Christian Religious Studies (CRS) adopt this method during the instructional process. The study was conducted within a constrained timeframe due to the school calendar. This study validates the effectiveness of the "chalk and talk" method with visual aids in enhancing elementary students' performance in Christian Religious Studies. It offers insights for curriculum strategies, acknowledges time limitations, and recommends further research across longer durations or varied contexts for broader understanding.

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INTRODUCTION

In public primary schools across Ekiti State, teachers of Christian Religious Studies (CRS) frequently encounter difficulties in accessing or creating instructional materials, which significantly hampers effective lesson delivery. According to Naismith et al. (2005) and Naveed & Gordon (2024), the absence of these resources often leads educators to rely on conventional, lecture-based teaching methods that fail to foster active student engagement. Pedraja-Rejas et al. (2024) emphasize that participatory teaching is essential for deeper learning, and its absence reduces the effectiveness of instruction. McGarr (2009) and Ferreira et al. (2021) note that financial limitations and a lack of institutional focus on instructional media integration contribute to this challenge. The Ekiti State Ministry of Education's 2024 placement examination revealed low CRS performance among students, reflecting the broader issue of inadequate teaching strategies (Ralph et al., 2017; Drew, 2017). However, Kaplan (2024) highlights that many CRS teachers already possess smartphones or personal computers, which, as Reinhart et al. (2014) and Joshi et al. (2021; 2023) suggest, can serve as cost-effective tools for accessing visual learning content. By utilizing these technologies, educators can adopt more dynamic and student-centered approaches, ultimately enhancing comprehension and performance in CRS.

Existing studies highlight the crucial role of visual teaching materials in enhancing students' academic performance across various subjects. Research by Bozdogan (2011), Umar et al. (2020), and Nasiru et al. (2023) emphasizes their positive impact on learning outcomes. Adalikwu and Iorkpigh (2013) found a strong correlation between instructional materials and improved academic performance, particularly in Chemistry. Similarly, Daboer & Shaorga (2023) reported higher academic and retention scores in Christian Religious Studies (CRS) when using improvised materials. Olayinka (2016) noted significant performance improvements in Social Studies, while Nasiru et al. (2023) and Umar et al. (2020) documented better results in Mathematics and technical education with visual aids and videos. Bozdogan (2011) demonstrated that visual materials effectively addressed misconceptions, and studies by Chundung et al. (2020) and John & Jeno-Mary (2024) showed enhanced comprehension and language learning outcomes using visual tools. Collectively, these findings confirm the effectiveness of visual instructional materials in improving academic achievements across disciplines. Although visual instructional materials have been applied effectively in subjects like Mathematics, Building Technology, English, and global warming concepts, their use in teaching Christian Religious Studies (CRS) at the primary school level in Ekiti State still needs to be explored. This study aims to bridge this gap by investigating the effectiveness of visual teaching aids in enhancing pupils' learning outcomes in CRS. It seeks to provide insights into their relevance and effectiveness in implementing the CRS curriculum, achieving its objectives, and supporting their inclusion in the educational framework.

This study aims to fill a gap in the literature by exploring the effectiveness of using visual instructional materials to enhance pupils' learning outcomes in Christian Religious Studies (CRS) at the primary school level, particularly in Ekiti State. By integrating visual teaching aids into CRS instruction, the study seeks to provide valuable insights into the relevance and effectiveness of visual aids in supporting the implementation of the CRS curriculum. It also aims to confirm the role of visual instructional materials in achieving CRS educational objectives and justifying their inclusion in the academic framework. This research benefits include improving the quality of CRS teaching and learning at the primary school level through a more interactive and engaging approach. Additionally, the study offers practical recommendations for teachers to utilize visual instructional materials as effective teaching aids. The findings can also serve as a basis for education policymakers to design strategies that support visual aids in implementing the CRS curriculum, thereby optimizing the attainment of educational goals.

The study formulated two key hypotheses to guide the research process. The first hypothesis posits no significant difference between the pre-test and post-test mean scores of pupils taught Christian Religious Studies (CRS) using the traditional chalk-and-talk method combined with visual instructional materials and those taught using the chalk-and-talk method alone without visual

instructional materials. This hypothesis examines whether integrating visual aids alongside traditional teaching methods has a measurable impact on student's academic performance in CRS. The second hypothesis examines the role of gender in influencing learning outcomes. It proposes no significant influence of gender on the learning outcomes of pupils taught CRS using either the chalk-and-talk method with visual instructional materials or the chalk-and-talk method without visual instructional materials. This hypothesis aims to determine whether the effectiveness of visual aids in teaching CRS is consistent across male and female pupils, ensuring that gender does not act as a confounding factor in the study. These hypotheses provide a structured framework for investigating the effectiveness and equity of teaching strategies in CRS instruction.

RESEARCH METHOD

A quasi-experimental design was adopted for the study, chosen for its relevance and suitability in assessing change over time. This design, often referred to as the classical design for change experiments (Campbell & Stanley, 1963), allows for the study of pre-test and post-test measures, incorporating both experimental and control groups. An intact class from each selected school was used, with the experimental group receiving the conventional chalk and talk method supplemented with visual instructional materials for teaching CRS (independent variable), while pupils' learning outcomes in CRS served as the dependent variable. The control group was taught using the conventional chalk and talk method without visual aids. The study population comprised all primary 5 pupils offering CRS in Ado-Ekiti Local Government Area, with 101 public primary schools recorded during the 2023/2024 academic session. A total of 119 pupils were selected for the sample through a simple random sampling technique, ensuring representation. Similar approaches to experimental designs have been emphasized for their robustness in evaluating educational interventions (Glele-Ahanhanzo et al., 2019; Yan et al., 2023).

The Christian Religious Studies Achievement Test (CRSAT), adapted from questions set by the Ekiti State Ministry of Education, was used to measure pupils' learning outcomes before and after treatment. The instrument consisted of 40 objective questions. Two lesson plans were developed: one for the chalk and talk method with visual instructional materials, created by the researcher for research assistants, and another for the conventional chalk and talk method without visual aids, prepared for regular CRS teachers. Both lesson plans, based on topics from the primary 5 syllabus, detailed the course content, methods, and behavioral objectives. Each plan included behavioral objectives, content presentation, pupil activities tailored to the teaching method, and evaluation to assess pupils' progress in achieving instructional objectives.

The instrument's face and content validity were confirmed through expert reviews involving Christian Religious Studies scholars from the Department of Arts and Language Education and a specialist in testing and measurement from the Faculty of Education, Ekiti State University. As noted by Oroszi (2020) and supported by Lang et al. (2021), involving domain-specific experts ensures that instruments align with the intended educational objectives and content accuracy. These experts conducted detailed evaluations, and necessary revisions were made to improve clarity and relevance before the instruments were finalized. To assess reliability, the study adopted the test-retest approach, consistent with De Ridder et al. (2021), which emphasizes the importance of temporal stability in educational assessments. The resulting reliability coefficient of 0.83, as highlighted by Yuksekol et al. (2022), demonstrates a strong degree of consistency, indicating the instrument's effectiveness for use in measuring the intended variables within the study.

The study procedure comprised three stages: pre-test, treatment, and post-test. The researcher, in collaboration with regular CRS teachers in selected primary schools, administered a pre-test to determine the homogeneity of the samples. The experimental teaching sessions were conducted over four weeks, with each session lasting 45 minutes and covering two periods per week in each school. Lessons for the experimental group were delivered using the chalk and talk method integrated with visual instructional materials, such as Bible story pictures displayed on the chalkboard. This approach allowed pupils to connect verbal and visual information, better

understand the lessons, and construct their own learning. Meanwhile, the control group received lessons through the conventional teaching method without visual aids (Mayer, 2009).

At the end of the fourth week, a post-test on Christian Religious Studies (CRS) was conducted for the pupils. The collected test scores were systematically analyzed using descriptive statistics, including means and standard deviations, to summarize data trends. For hypothesis testing, inferential statistics such as the t-test were employed to evaluate the first hypothesis, which compared the average scores of the experimental and control groups. This aimed to determine if visual instructional materials significantly impacted the pupils' learning outcomes compared to the conventional method. The second hypothesis used Analysis of Variance (ANOVA) to examine potential gender influences on learning outcomes, assessing significant differences between groups based on this variable. All hypotheses were tested at a 0.05 level of significance to ensure the reliability and validity of the findings in assessing the effects of visual instructional materials on academic performance in CRS.

RESULTS AND DISCUSSION

Results

Using visuals in teaching spiritual and moral values through bible stories

In Christian Religious Education (CRE), topics such as the parable of the Prodigal Son (Luke 15: 11-32; Matthew 9: 9-13) and the importance of showing compassion to others (Matthew 18: 21-34) are integral for imparting spiritual values. Visualization serves as a powerful tool in these lessons, enhancing students' comprehension of the deep moral and ethical teachings embedded in these Bible stories. By using visual aids, educators can vividly bring these narratives to life, facilitating a deeper emotional and intellectual engagement with the material, which is essential for fostering a thorough understanding of these foundational Christian principles.

Table 1

Use of Visuals in Teaching Spiritual and Moral Values through Bible Stories

No	Visual Image	Description
1	 	Figure 1: God's Mercy on us: The Story of the Prodigal Son (Luke 15: 11-35; Matthew 9: 9-13) (Source: https://www.freebibleimages.org/illustrations/ls-lost-son/) Figure 1 explains the story of the prodigal son leaving the house for a distant country after collecting his share of his father's property. The prodigal son hired himself out to one of the local inhabitants who put him on his farm to feed the pigs for him to survive after wasting everything he collected from his father. The prodigal son came back to his father pleading for him to be accepted back.
2	 	Figure 2: God's Mercy on us: The Need to be Merciful to Others (Matt 18: 21-34) (source: https://www.freebibleimages.org/illustrations/unforgiving-servant/) Figure 2 explains the unforgiving servant pleading with his master to give him more time for him to settle his debt, but his master forgave him of his debt. Because the unforgiving servant refused to forgive his fellow servant of his debt, his master decided to punish him afterward.

The provided descriptions highlight two profound biblical parables that emphasize the theme of mercy. The first, "The Story of the Prodigal Son," depicted in Figure 1, illustrates a father's unconditional forgiveness and love towards his wayward son. This parable in the Gospel of Luke showcases the son's repentance and the father's compassionate reception, symbolizing God's boundless grace towards sinners who repent. The second image, "The Need to be Merciful to Others," from Figure 2, is taken from the Gospel of Matthew and portrays the parable of the unforgiving servant. This story highlights the hypocrisy of a servant who, despite being forgiven a large debt by his master, refuses to forgive a minor debt owed by his fellow servant. This leads to his punishment, underscoring the importance of showing mercy to others if one expects to receive mercy in return. These illustrations serve as visual aids that powerfully communicate the moral lessons of compassion and forgiveness embedded in Christian teachings.

Student learning outcomes of applying the chalk and talk method with visual teaching

In an exploration of teaching strategies in Christian Religious Education (CRE), Table 2 provides a detailed quantitative analysis comparing the effects of the chalk and talk teaching method. The table highlights mean scores and standard deviations to show how the incorporation of visual instructional materials versus the absence of such aids affects pupils' learning outcomes. This data serves as an essential foundation for evaluating the efficacy of visual enhancements in traditional teaching approaches within the context of religious studies.

Table 2

Average Results and Standard Deviation of Student Learning Outcomes Using the Chalk and Talk Method with and Without Visual Learning Materials at CRS

Group	N	Pretest		Posttest		Mean Diff.
		Mean	Std. D	Mean	Std. D	
Chalk and Talk Method with Visual Instructional Materials	61	30.0	9.614	49.05	11.690	19
Chalk and Talk Method without Visual Instructional Materials	58	31.9	15.049	33.38	11.547	1.5
Grand Mean	119	31.0	12.30	41.40	11.60	10.50

Table 2 shows that prior to the treatment pupils in the chalk and talk method with visual instructional materials, and chalk and talk method without visual instructional materials groups had mean scores of 30.0 and 31.9 respectively. The mean total of the two groups was 31.0. This implies that the groups were homogenous before the treatment. However, after the exposure of the two groups to treatment, the grand mean of the groups increased to 41.40. Of the two groups, pupils exposed to the chalk and talk method with visual instructional materials had the highest performance with a mean score of 49.05, while those exposed to chalk and talk method without visual instructional materials had the lowest mean score of 33.38. Based on these results, it can be inferred that the pupils taught CRS utilizing chalk and talk method with visual instructional materials performed better, as shown by the highest mean score.

Hypothesis 1: There is no significant difference in the pre-test and post-test mean scores of pupils taught CRS utilizing chalk and talk method with visual instructional materials, and chalk and talk method without visual instructional materials.

Table 3

t-test Showing Difference in the Pre-Test and Post-Test Mean Scores of CRS Pupils in Experimental and Control Groups

Group	Test	N	Mean	Std. D	Df	T	p-value
Chalk and Talk Method with Visual Instructional Materials	Pretest	61	30.03	9.614	117	-.824	.412
Chalk and Talk Method without Visual Instructional Materials		58	31.93	15.049			
Chalk and Talk Method with Visual Instructional Materials	Posttest	61	49.05	11.690	117	7.353	.000

Chalk and Talk Method without Visual Instructional Materials	58	33.38	11.547

Table 3 shows that the pre-test mean score for CRS pupils in the chalk and talk method with visual instructional materials group was 30.03 with a standard deviation of 9.614, while the chalk and talk method without visual instructional materials group had a mean score of 31.93 with a standard deviation of 15.049. The t-test result, t (117) = -0.824, p = 0.412, indicates that there is no significant difference between the pre-test scores of the two groups at 0.05 level of significance. This implies that both groups had similar performance levels before the treatment, supporting the assumption that they were comparable at the start of the study. However, after treatment, the result indicates that the chalk and talk method with visual instructional materials had a mean score of 49.05 with a standard deviation of 11.690, whereas the chalk and talk method without visual instructional materials had a mean score of 33.38 with a standard deviation of 11.547. The t-test result, t (117) = 7.253, p = 0.000, shows a significant difference between the post-test scores of the experimental and control groups. This indicates that pupils taught using the chalk and talk method with visual instructional materials performed significantly better than those taught using the chalk and talk method without visual instructional materials.

Hypothesis 2: There is no significant influence of gender on the learning outcomes of pupils taught CRS utilizing chalk and talk method with visual instructional materials, and chalk and talk method without visual instructional materials.

The influence of gender on student learning outcomes with and without visual learning materials in the chalk and talk method

Table 4 provides an ANOVA analysis that explores the influence of gender on the learning outcomes of pupils in Christian Religious Education (CRE). The table specifically examines how male and female students respond to the traditional chalk and talk teaching method, both with and without the integration of visual instructional materials. This analysis helps in understanding whether gender plays a significant role in how effectively students can assimilate and retain religious education content under different pedagogical conditions.

Table 4

Effect of Gender on Student Learning Outcomes In CRS: Comparison of Chalk and Talk Methods with and Without Visual Learning Materials

Source	Ss	df	Ms	F	sig.
Corrected Model	7811.256[a]	3	2603.752	22.750	.000
Intercept	184389.790	1	184389.790	1611.096	.000
Group	7252.972	1	7252.972	63.372	.000
Gender	220.325	1	220.325	1.925	.168
Group * Gender	411.912	1	411.912	3.599	.060
Error	13161.736	115	114.450		
Total	221094.000	119			
Corrected Total	20972.992	118			

Table 4 shows that the effect of treatment was significant, F (1, 115) = 63372, p = .000, indicating that pupils who were exposed to chalk and talk method with visual instructional materials performed better in CRS than their counterparts exposed to chalk and talk method without visual instructional materials. In contrast, the main effect of gender did not have statistical significant effect on pupils' learning outcomes in CRS, F (1, 115) = 1.925, p = .168, supporting the null hypothesis that there is no significant influence of gender on pupils' learning outcomes when exposed to treatment. Additionally, the interaction between treatment and gender was statistically insignificant, F (1, 115) = .3.559, p = .060, indicating that the effect of chalk and talk method with visual instructional materials was consistent across both male and female pupils.

Discussion

Effectiveness of chalk and talk method with visual teaching materials in CRE learning

This study critically examined the integration of visual instructional aids in teaching Christian Religious Education (CRE) at the elementary level. The t-test analysis for the first hypothesis indicated a significant improvement in post-test scores for students exposed to the chalk-and-talk method augmented with visual aids compared with those receiving conventional instruction alone. Gazioğlu and Karakuş (2023) note that while traditional methods convey content, their effectiveness is limited when abstract religious concepts are not concretized. Pitt and Orlander (2016) and Ahmed et al. (2024) argue that visual materials facilitate comprehension by providing tangible representations of otherwise intangible ideas. In contrast, Vazquez and Chiang (2014) and Ongeri (2017) suggest that overreliance on visuals may risk superficial engagement if not paired with active discussion. Compared to lecture-only approaches, the integration of visual aids not only enhances cognitive understanding but also promotes deeper spiritual reflection and engagement, demonstrating a more holistic and effective pedagogical strategy for CRE education, emphasizing the critical interplay between instructional design and student learning outcomes.

The findings of this study corroborate prior research emphasizing the efficacy of visual instructional materials in enhancing student learning across disciplines. Nasiru et al. (2023) and Klingenberg et al. (2019) observed that students exposed to visual aids in mathematics demonstrated higher performance than peers taught without such support, suggesting that visual representations concretize abstract concepts and facilitate comprehension. Similarly, Sirajo and Abdullahi (2023) and Yusuf and Jinjiri (2024) reported that social studies students taught with visual resources significantly outperformed those receiving traditional lecture-based instruction, highlighting how visual materials can create more engaging and meaningful learning experiences. Ojelade et al. (2020) further reinforce this perspective, finding statistically significant improvements in science achievement when audiovisual aids were employed, with a t-value of 3.02, df = 98, and a mean difference of 5.05 at $P < 0.05$. Collectively, these studies underscore that integrating visual resources is not merely supplementary but critically enhances conceptual understanding, engagement, and overall academic outcomes, particularly when compared with conventional, lecture-only methods.

The findings from hypothesis 2 critically suggest that gender does not significantly influence pupils' learning outcomes in Christian Religious Studies (CRS), $F(1,115)= 1.925$, $p = .168$, supporting the null hypothesis. This implies that both male and female students respond similarly to instructional interventions, challenging assumptions that gender might inherently affect learning effectiveness. Furthermore, the interaction between treatment and gender was also nonsignificant, $F(1,115)= 3.559$, $p = .060$, indicating that the positive impact of the chalk-and-talk method supplemented with visual instructional materials is equally distributed across genders. These results highlight the gender-neutral potential of integrating visual aids into traditional teaching methods, suggesting that the approach enhances engagement and comprehension without bias. Practically, this underscores that when instructional strategies are thoughtfully designed incorporating visual elements and interactive features—both male and female pupils can achieve comparable learning outcomes, reinforcing the method's inclusivity and pedagogical equity.

The diagram depicting factors influencing learning outcomes in Christian Religious Studies (CRS) presents a critical framework linking instructional strategy, research evidence, and inclusivity. Supporting studies highlight the empirical basis for using visual instructional materials, demonstrating their effectiveness in enhancing comprehension and retention (Chiou et al., 2015; Huwari et al., 2023). Visual instructional materials, as emphasized by Abdulrahaman et al. (2020) and Klingenberg et al. (2019), make abstract religious concepts more tangible, facilitating deeper understanding. The integration of the traditional chalk-and-talk method with visual aids illustrates how conventional pedagogy can be innovatively adapted to optimize learning, bridging theory and practice (Gazioğlu & Karakuş, 2023). Importantly, gender neutrality, underscored by McBrien et al. (2022) and Nasiru et al. (2023), ensures that instructional benefits are equitably accessible to all

students, challenging assumptions about gender differences in learning outcomes. Collectively, these elements underscore a critical, evidence-based, and inclusive approach that enhances cognitive, moral, and spiritual development in CRS education, promoting equitable and meaningful learning experiences for all pupils.

The findings of this study critically align with prior research by Sirajo and Abdullahi (2023) and Yusuf and Jinjiri (2024), which indicate that the use of visual instructional resources does not produce significant differences in the academic performance of male and female students in social studies. This suggests that gender does not moderate the effectiveness of visual aids, supporting the view that well-designed instructional materials can equally benefit all learners. Similarly, Nasiru et al. (2023) found no statistically significant gender differences in students' achievements in mathematics when exposed to visual teaching resources, reinforcing the notion that instructional innovation rather than gender determines learning outcomes. These findings critically imply that the integration of visual materials in teaching fosters an inclusive learning environment where both male and female students can achieve comparable academic gains. The convergence of these studies highlights the gender-neutral potential of visual instructional strategies, demonstrating their capacity to enhance comprehension and engagement across diverse student populations.

Relevance and contribution of chalk and talk method to visual teaching materials

The findings that the chalk and talk method enhanced with visual instructional materials improves learning outcomes in Christian Religious Studies (CRS) are consistent with educational theories emphasizing multisensory learning. Mayer (2009) and Esplendori et al. (2022) argue that combining multiple sensory inputs facilitates deeper comprehension and retention of material. This aligns with the cognitive theory of multimedia learning, which posits that learners process and remember information more effectively when it is presented through both words and visuals rather than words alone (Clark & Mayer, 2011; Gazioğlu & Karakuş, 2023). Critically, these findings demonstrate that visual aids do not merely supplement traditional instruction but actively enhance engagement, understanding, and long-term retention. Compared with conventional chalk-and-talk methods, integrating visual elements provides a more inclusive and effective learning approach, enabling students to grasp abstract religious concepts while fostering cognitive and spiritual development, particularly in the context of CRS education.

The absence of a significant interaction between treatment and gender suggests that the chalk-and-talk method with visual instructional materials benefits both male and female students equally in this study. However, labeling the method as "gender-friendly" warrants critical examination. Scholars such as Halpern (2012) and Thompson et al. (2015) argue that gender-based learning preferences are often influenced by socio-cultural contexts, which can shape engagement with visual materials. Davidson and Turin (2021) further highlight that overlooking these contextual factors may limit the generalizability of findings across diverse populations. Comparative research indicates that age, cultural background, and socioeconomic status can interact with gender to influence learning outcomes (Gruber et al., 2021; Campbell et al., 2023). Consequently, future studies should adopt an intersectional perspective to examine how visual instructional aids function across varied demographic groups, informing more inclusive and context-sensitive teaching strategies in Christian Religious Studies.

While the study demonstrates the advantages of integrating visual aids into the chalk-and-talk method, a critical comparison with alternative instructional approaches is necessary to contextualize its effectiveness. Scholars such as Raja et al. (2023) and Pimpa (2023) emphasize that incorporating technology-enhanced methods or collaborative, group-based learning can yield different engagement patterns and academic outcomes. Windchief (2023) further notes that evaluating diverse teaching strategies provides insights into how various approaches cater to students' cognitive and social needs. Kirschner et al. (2006) argue that systematic comparisons of instructional methods are essential for evidence-based educational practice, ensuring that teaching strategies optimize learning for heterogeneous classrooms. By examining the relative effectiveness

of traditional, visual-aided, and modern collaborative methods, educators can make informed decisions to enhance comprehension, participation, and academic achievement. This comparative perspective encourages adaptive, context-sensitive pedagogy in Christian Religious Studies and other subjects.

A critical appraisal of the study showing that the chalk-and-talk method enhanced with visual instructional materials improves learning outcomes in Christian Religious Studies (CRS) aligns with Mayer's cognitive theory of multimedia learning, which emphasizes the benefits of integrating words and visuals for deeper understanding (Mayer, 2003; Won et al., 2023). However, Bell and Gitomer (2023) and Sanfo and Malgoubri (2023) caution that socio-economic and cultural contexts can influence how students engage with visual aids, suggesting that the method's effectiveness may not be universally consistent. Moreover, the study largely omits comparisons with contemporary, technology-driven teaching strategies. As noted by Raja et al. (2023) and Pimpa (2023), exploring interactive, digital, or collaborative approaches could reveal additional avenues for improving engagement and learning outcomes. Integrating these perspectives would provide a more nuanced, context-sensitive understanding of effective CRS pedagogy in diverse educational environments.

To enhance the effectiveness of the "Chalk and Talk" method, it is crucial to integrate four key elements. First, the incorporation of visual learning materials, such as diagrams, videos, and presentations, strengthens students' comprehension and retention, making lessons more engaging and memorable. Second, ensuring gender-neutral education is essential, as it fosters an inclusive learning environment by eliminating bias in language, examples, and materials. Third, the use of comparative analysis encourages students to develop critical thinking by examining various theories and perspectives, which broadens their intellectual horizons. Lastly, sensitivity to students' socio-cultural factors is vital, as understanding cultural diversity and social norms creates a more respectful and effective learning atmosphere. Together, these elements form a comprehensive framework that not only improves academic outcomes but also promotes a more inclusive, thoughtful, and engaging educational experience for all students.

Practical implications for CRS teachers

This study provides important insights for Christian Religious Studies (CRS) educators, highlighting the critical role of visual instructional materials in enhancing teaching effectiveness (McKnight et al., 2016; Narkabilova & Davidova, 2022). Research by Gazioğlu and Karakuş (2023) and Abdulrahaman et al. (2020) indicates that such resources make abstract religious concepts more tangible, improving student comprehension and retention. Moreover, integrating technologies like smartphones and computers can modernize instructional methods, promoting interactive and student-centered learning (Eden & Adeniyi, 2024; Hidayat & Firmanti, 2024). Compared with traditional chalk-and-talk approaches, visual and digital aids provide a more inclusive learning environment, accommodating diverse cognitive abilities and learning styles (Vazquez & Chiang, 2014; Ongeri, 2017). By adopting these innovative tools, CRS teachers can foster greater engagement, enhance academic outcomes, and ensure that lessons are accessible, meaningful, and contextually relevant for all students, reflecting a balanced integration of traditional and modern pedagogical practices.

The integration of technology and visual aids in education is widely acknowledged for enhancing learning outcomes, yet its practical implementation warrants critical scrutiny. Stamer et al. (2023) and Alghamdi et al. (2023) caution that assumptions of universal access and affordability often overlook disparities in resource availability. Selwyn (2012) and Afzal et al. (2023) highlight that the financial demands of acquiring, maintaining, and effectively using technological tools can be prohibitive for underfunded schools, potentially exacerbating educational inequalities. Kamalov et al. (2023) further argue that without context-sensitive strategies, technology adoption may favor already privileged students, undermining inclusivity goals. Therefore, successful integration requires careful consideration of socio-economic contexts, equitable distribution of resources, and targeted funding strategies. Tailored approaches that combine traditional and technological methods

are essential to ensure all learners benefit, fostering both effective learning and social equity in diverse educational settings.

The effectiveness of integrating visual aids and technology in Christian Religious Education (CRE) largely depends on teachers' competence in using these tools. Ertmer and Ottenbreit-Leftwich (2010) argue that possessing technological resources alone does not guarantee improved learning outcomes; effective utilization requires pedagogical skill. Similarly, Luu (2020) and Bowman et al. (2020) emphasize that structured training and continuous professional development are essential for equipping teachers with the ability to integrate technology meaningfully into instruction. Hew and Brush (2007) further highlight that ongoing support is critical to help educators overcome challenges in adopting new tools, ensuring their application aligns with instructional goals. Morris (2010) notes that without sustained guidance, technology may be underutilized or applied superficially, limiting its potential benefits. Collectively, these insights underscore that the successful deployment of visual aids and educational technology depends not only on availability but on teacher preparedness, reflective practice, and systemic support mechanisms, ensuring pedagogical effectiveness and enhanced student learning.

Implementing technology in education faces considerable challenges, particularly in resource-limited contexts. Carlander and Thollander (2023) argue that the high initial costs of acquiring technology, coupled with ongoing maintenance expenses, create significant barriers for many schools. Similarly, Borges do Nascimento et al. (2023) note that these financial constraints can hinder effective technology adoption, limiting its potential to enhance learning outcomes. Such disparities risk widening the educational divide, as students in wealthier regions gain access to advanced tools while those in underfunded areas remain disadvantaged. In comparison, studies by Selwyn (2012) and Afzal et al. (2023) emphasize that without strategic investment and equitable distribution, technological initiatives may reinforce existing inequalities rather than mitigate them. Therefore, a critical, context-sensitive approach is essential, prioritizing both accessibility and sustainability to ensure that technology integration benefits all learners equitably.

Addressing the challenges of technology integration requires strategies that promote equitable access for all students. Kamalov et al. (2023) argue that reducing financial barriers through subsidized programs and targeted grants is essential to prevent disparities in learning opportunities. Wang et al. (2024) further emphasize that providing comprehensive training for educators ensures that technology is effectively utilized to enhance teaching and learning outcomes. In comparison, Selwyn (2012) cautions that without deliberate planning, technology initiatives risk reinforcing existing educational inequalities. By combining financial support with professional development, schools can create inclusive learning environments where students from diverse socio-economic backgrounds benefit equally. Such an approach not only improves overall educational quality but also narrows the gap in opportunities, ensuring that technological advancements serve as a tool for equity rather than a source of division.

Integrating technology and visual aids in education provides significant benefits but also presents challenges. Technology can enhance teaching by offering diverse tools that address students' varied learning needs, yet its success depends on teachers' ability to adapt and receive ongoing training and support. While it can make learning more interactive and support inclusive education through multiple modalities, proper integration into the curriculum is crucial. Technology also facilitates modern approaches like project-based learning but risks overshadowing fundamental learning principles. Additionally, high costs and limited accessibility, especially in low-resource settings, pose barriers. Therefore, comprehensive professional development and adequate resources are essential to ensure technology is used effectively, maximizing its potential to enrich teaching and learning while maintaining educational quality.

CONCLUSION

The study on the chalk-and-talk method enhanced by visual instructional materials in Christian Religious Education (CRE) underscores notable advancements in student learning

outcomes, demonstrating the potential of multisensory instructional strategies to boost engagement and retention. This method's effectiveness across gender lines prompts a call for more nuanced research to explore how various demographic factors, such as socioeconomic and cultural backgrounds, influence learning outcomes. The successful integration of technology in conventional teaching also highlights the critical need for comprehensive teacher training and adequate resource distribution to facilitate effective implementation. To fully leverage the benefits of visual instructional materials and technology, educators and researchers should strive to develop teaching practices that are inclusive, engaging, and effective across diverse educational settings.

Given the demonstrated success of the chalk-and-talk method with visual aids in CRE, it is advisable to extend this teaching approach to other school subjects. This expansion could validate and enhance the method's efficacy, encouraging its broader adoption among educators at all educational levels. Teachers have a range of visual instructional materials at their disposal, such as pictures, videos, real objects, diagrams, and charts, which can be locally sourced or downloaded from the internet. Effective utilization of these resources involves organizing lesson content into coherent units, presenting information pertinent to the lesson objectives, and ensuring a logical flow and alignment between text and images. Such structured and resourceful teaching strategies are pivotal in maximizing the educational impact of the chalk-and-talk method supplemented with visual aids.

Further research is warranted to assess the long-term effects of integrating visual instructional materials with the chalk-and-talk method in Christian Religious Education at the primary level. Future studies should focus on how this method affects student engagement and information retention, examining its effectiveness in various socio-economic and cultural settings. Research should also identify the most effective types of visual materials and explore the specific training needs of CRS teachers for optimal implementation. Additionally, comparative analyses of different teaching methods within CRS could help identify the best pedagogical strategies to support diverse learning styles and needs.

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