

EFFECTIVENESS OF TEACHING SOCIAL STUDIES THROUGH KINESTHETICS METHOD FOR ENHANCING STUDENTS' ACADEMIC PERFORMANCE

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ABSTRACT

This thesis, which focuses on grade 6 pupils at The Ceder School in Karachi, Pakistan, investigates the efficacy of the kinesthetic technique in raising academic performance and interest in social studies. We used the kinesthetic approach to teach five lessons on pollution-related subjects, such as "Importance of Recycling" and "Effect of Pollution on Plants, Human Health and Environment." A pre-test and post-test were administered to the 16 students (eight girls and eight boys) in the study in order to gauge academic progress. As demonstrated by the pre-test results, the experimental group outperformed the control group, scoring an average of 46.2% in the post-test compared to the control group's 34.7% in the pre-test. In addition, a comparison of the experimental and control groups' post-test results showed that the experimental group had a marginal advantage, scoring 94.3% as opposed to 93.7% for the control group. According to these results, the kinesthetic approach considerably improves social studies students' critical thinking, problem-solving abilities, and level of involvement. This study's conclusion affirms that kinesthetic learning has the potential to be a powerful teaching method in the twenty-first century, encouraging students to participate more actively in class and get a deeper comprehension of the material. This study adds to the continuing conversations in educational theory by showing how important it can be to improve student outcomes through practical, hands-on learning, especially in courses like social studies where students gain from active, real-world exploration. Schools should incorporate kinesthetic learning techniques not only in social studies but also in other subjects. Although the kinesthetic approach is very successful, it should be used in conjunction with more conventional teaching techniques in order to meet the needs of diverse learners and offer a comprehensive education.

Keywords: Visual; Auditory; and Kinesthetic Learning Style, Academic Achievement, Activity Based Learning, Experimental Learning.

1. INTRODUCTION

Pedagogy, the art and science of teaching, has evolved significantly over time, reflecting changes in societal needs, educational theories, and psychological understanding. "Education is not preparation for life; education is life itself," John Dewey (1859–1952). In modern pedagogy, learners construct knowledge through their experiences and interactions with the world around them, benefitting from increased exposure due to globalization. "The principal goal of education is to create people who are capable of doing new things, not simply repeating what other generations have done," Jean Piaget (1896–1980).

Taking these factors into account, we conducted five social studies lessons using the kinesthetic method at The Ceder School, located in PECHS Society, Karachi, Pakistan. The topic was "Effectiveness of Teaching Social Studies Through the Kinesthetic Method for Enhancing Students' Academic Performance." The methodology promises to enhance student engagement, critical thinking skills, problem solving skills, and improve academic performance. This thesis aims to explore how the kinesthetic method influences student learning outcomes, with a focus on grade 6 social studies. The topic we were selected was, "Pollution", "Effect of Pollution on Plants", "Effect of

Pollution on Human Health”, Effect of Pollution on environment”, and “Importance of Recycling.” We conducted both a pre-test and a post-test to assess student performance. There were 16 students in the class—eight girls and eight boys. In the pre-test, the control group students scored an average of 34.7%, while in the post-test, the experimental group achieved an average of 46.2%, representing a significant improvement in results. Similarly, in post-test vs post test the control group scored 93.7%, while the experimental group scored 94.3%. In light of these findings, it is clear that the kinesthetic method holds considerable promise for enhancing student engagement and academic outcomes, particularly in social studies and other subjects that benefit from experiential learning. “Education either functions as an instrument to bring about conformity or freedom,” Paulo Freire (1921–1997). “What a child can do in cooperation today, he can do alone tomorrow,” Lev Vygotsky (1896–1934).

2. Literature Review

Dahlia at all, 2023, this study investigates the impact of the Visual, Auditory, and Kinesthetic (VAK) learning model on student motivation and academic performance at Salafiyah Madrasah Ibtidaiyah, Cirebon City. The name of the school, Islamic Elementary have unique curricula involving subjects like Fiqh, that often face challenges due to traditional, less engaging teaching methods. The study addresses the need for a more energetic approach to improve both student motivation and learning outcomes by employing the VAK model, known for its multisensory and interactive methods. 59.76% of students responded positively to the VAK model, indicating its effectiveness in engaging students. Positive motivating words were agreed upon or strongly agreed upon by 70.68% of students, according to the motivation questionnaire, indicating higher levels of involvement. Learning outcomes significantly improved, as evidenced by average scores rising from 60.7 on the pretest to 79.1 on the posttest. A medium degree of progress was suggested by the N-gain value of 0.4351. There was a noticeable influence on academic achievement as the VAK model explained 47.5% of the variance in learning outcomes and 22.6% of the variance in student motivation. The findings of the t-test demonstrated that the increases in learning outcomes and motivation were

statistically significant. The research findings suggest that integrating the VAK model into teaching practices can effectively boost student confidence, motivation and enhance learning outcomes, offering valuable insights for educators aiming to improve educational quality.

Yusnanto, & Rahayu, 2021, the Covid-19 pandemic has significantly impacted the educational sector, particularly in terms of student motivation. The study was conducted with Grade XI students from a high school in Bekasi City, Indonesia, aiming to address the problem of lack of motivation and engagement during remote learning. This research used a quantitative approach with a two-group pre-test post-test design and involved 24 Grade XI students who were split into an experimental group and a control group. The experimental group used learning videos incorporating visual, auditory, and kinesthetic styles, while the control group followed traditional learning methods. The study's results indicated no statistically significant difference in learning motivation between the pre-test and post-test for the experimental group. Hence, the use of visual, auditory, and kinesthetic learning videos did not produce a substantial increase in overall student motivation in the context of thermodynamics. The study concluded that while the integration of multiple learning styles through videos showed some individual improvements in student motivation, it did not result in a significant overall effect.

Gunawan, at all, 2023, the study findings kinesthetic intelligence-based thematic learning in elementary education, specifically focusing on second-grade students at Baros Mandiri 3 Elementary School. The research aims to assess how this approach can be effectively overview into thematic learning to improve student engagement and comprehension.. The study was conducted at Baros Mandiri 3 Elementary School, involving observations, interviews, and documentation to collect comprehensive data on the implementation and evaluation of kinesthetic intelligence-based thematic learning. The study found that implementing kinesthetic method intelligence-based thematic learning involved integrating physical activities into the educational framework, which enhanced student engagement and comprehension. The outcomes indicated that this approach effectively facilitated active learning and

improved the learning experience for second-grade students. Though, the study notes that these findings are based on a single case and suggests further research to explore the broader applicability of kinesthetic-based thematic learning across different educational settings and student groups. Solomon et al., 2023, the titled of the study "Effects of Kinesthetic Learning Strategy on Pupils' Motivation and Achievement in Numeracy in Nursery Schools in Abuja, Nigeria," investigates the impact of kinesthetic learning and aimed to compare the effects of the kinesthetic learning strategy (KLS) with conventional teaching methods on students' motivation and numeracy achievement. Two research instruments were used: the Situation Motivation Scale (SMS) to measure motivation and the Mathematics Achievement Test (MAT) to assess numeracy achievement, pre-tests and post-tests were conducted, and the data were analysed using mean, standard deviations, and Analysis of Covariance (ANCOVA). The study found that students exposed to KLS showed significantly higher motivation and numeracy achievement compared to those taught with conventional methods and the results indicated that the kinesthetic learning strategy is more effective in enhancing students' motivation and achievement in numeracy than traditional methods.

Chiakyor & Agba 2024, investigates the impact of a constructivist-based approach, specifically the 5Es learning model, on students with reading-writing and kinaesthetic learning styles in Social Studies classes in Benue State, Nigeria. The research employed a quasi-experimental design with a sample of 124 Upper Basic 2 students, data were collected using a Social Studies Performance Test (SSPT) and a Learning Styles Preference Questionnaire (LSPQ). The key findings revealed significant differences in the performance of students taught using the 5Es model compared to those taught using conventional discussion methods. Particularly, students with reading-writing and kinaesthetic learning styles performed better when they were taught with the 5Es model. The study results that the 5Es learning model, which engages students in phases like engagement, elaboration, exploration, explanation, and evaluation, is more effective than traditional methods in improving students' academic performance. As a consequence, the study recommends that Social Studies teachers

incorporate the 5Es model to cater to diverse learning styles and improve student outcomes.

Kaf & Yilmaz 2017, The purpose of this study was to investigate the effect of creative drama as a teaching method on academic achievement and retention in social studies, students' attitude towards social studies of 4th grade. The research is designed according to quasiexperimental model. The research was conducted with 4th year students in a public school in Adana in Turkey. There are 42 students in experimental group and 39 in control group. The study included creative drama activities to develop social studies achievement and attitude of students as a treatment for the experimental group. The treatment duration was 15 hours, 40 minutes sessions that equal a class hour in school and 3 hours a week. The control groups had been taught by classroom teachers as the way they do traditionally, and the data collection tools are "Attitude Towards Social Studies Scale" developed by Gencil "Achievement Test" developed by the researchers. The findings indicated that creative drama method has a significant effect on social studies achievement and students' attitude towards social studies but not a significant effect on retention of social studies knowledge. As a result, it can be deduced that, as the evaluation of the findings of this study show that its effect on the achievement and attitude towards the subject in social studies is significant, the creative drama method is an effective method. Hence, long period, in-depth studies can be conducted at different grade levels and subject matters.

Osman et al., 2024, the titled of the study "A Correlation Study of Visual, Auditory, and Kinesthetic Learning Styles against Students' Higher Level Thinking Skills in the Topic of Respiration." The investigation shows different learning styles—Visual, Auditory, and Kinesthetic (VAK)—influence students' High-Level Thinking Skills (HTS) in the topic of Respiration for Form 3 students. The study conducted as a quantitative survey with 60 students from a school in the Tanjong Malim district, the research utilized learning style questionnaires and HTS tests to gather data, which was then analysed using SPSS software. Findings showed, the mean scores for the learning styles were medium-high: auditory (3.81), visual (3.78), and kinesthetic (3.68). Pearson's correlation analysis revealed a significantly low

positive relationship between the kinesthetic learning style and students' HTS, while no significant relationship was found between visual or auditory learning styles and HTS. The study outcomes that the kinesthetic learning style positively impacts students' ability to engage in higher-level thinking in the topic of Respiration, and suggest that teachers should focus on developing teaching strategies that cater to all three learning styles—visual, auditory, and kinesthetic—to enhance students' higher-level thinking skills in science.

Hogan 2023, the study conducted at a Northeastern community college, the topic is "Instructors' Experiences with Employing Kinesthetic Instructional Strategies to Engage Students in Gatekeeper Community College Courses." This qualitative, single holistic case study aims to understand the effectiveness of these strategies based on domains of learning theory, which integrates cognitive, affective, and psychomotor domains. The study involved 16 instructors who were selected through purposeful and snowball sampling, the data was collected via semi-structured interviews, focus groups, and participant hypothetical letters. The finding highlights the importance of incorporating movement and interactive activities to support student success in critical gatekeeper courses. The study concluded, that kinesthetic strategies effectively engage students and enhance their learning and retention, while also fostering a stronger classroom community.

Kusumawarti et al. 2020, the study "The Effectiveness of Visualization, Auditory, Kinesthetic (VAK) Model toward Writing Narrative: Linguistic Intelligence Perspective" by Kusumawarti, Subyantoro, and Rukayah, evaluates the impact of the VAK instructional model on narrative writing skills among fifth-grade students. Quasi-experimental with pretest-posttest design. 114 fifth-grade students from primary schools in Surakarta, Indonesia, randomly assigned to an experimental group (VAK model) and a control group (guided inquiry model). The data collected on Narrative writing tests validated by experts. The finding showed a mean score increase of 0.44 in narrative writing skills, while the control group had a decrease of -0.30, and statistical analysis revealed a significant difference with a t-value of 25.155 and a p-value of 0.000, indicating

the VAK model was more effective. The effect size ($d = 7.58$) suggests a high effectiveness of the VAK model in improving narrative writing skills. The study concluded that the VAK model significantly enhances narrative writing skills from a linguistic intelligence perspective, and supports the need for instructional models that cater to various learning styles to foster better writing outcomes in primary education.

Papageorgiou et al. 2021, the paper titled, "Task Geometry Aware Assistance for Kinesthetic Teaching of Redundant Robots" addresses improving kinesthetic teaching methods for robots, which involve direct physical interaction between a human and a robot to transfer skills. This study included a novel control approach combining virtual fixtures (VFs) and inertia optimization to ease this process. Kinesthetic teaching method allows humans to teach robots directly by demonstrating movements. While effective, it can be challenging due to the robot's dynamics impacting the teacher's effort and cognitive load. The method was tested using a KUKA LWR4+ robot for a brush painting task on a curved surface. The results showed that the proposed method was effective in reducing the teacher's physical and cognitive load compared to traditional gravity compensation and VFs alone, and proposed approach effectively integrates virtual fixtures and inertia optimization to enhance kinesthetic teaching. By reducing both cognitive and physical demands on the human teacher, this method improves the workability and efficiency of teaching complex motions to robots.

3. Methodology

Students actively participate in physical activities as part of the learning process while using the kinesthetic methodology, which is often referred to as tactile or hands-on learning. This approach departs from conventional, lecture-based instruction by allowing students to participate directly with the materials, which fosters greater comprehension and engagement. We used the kinesthetic method in five social studies courses at The Ceder School, which is situated in PECHS Society, Karachi, with an emphasis on subjects linked to pollution. These were "Pollution," "Effect of Pollution on Plants," "Effect of Pollution on Human Health," "Effect of Pollution on the Environment," and "Importance of Recycling."

Eight females and eight boys, totaling sixteen grade 6 pupils, took part in this study.

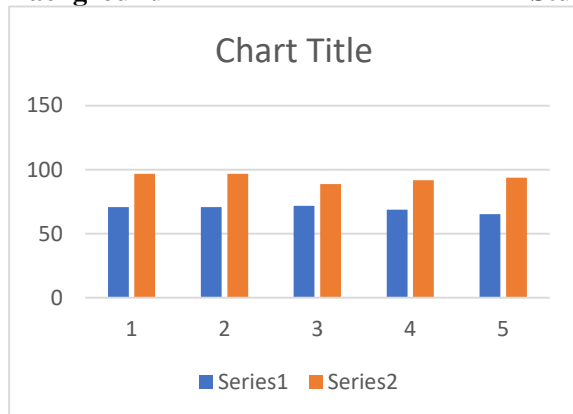
Finding out how kinesthetic learning affected student performance was the goal. Students used a variety of hands-on activities, including role-playing, simulations, and model-making, to demonstrate the consequences of pollution on the environment and human health rather than only reading or listening to lectures. This hands-on approach helped them see and grasp complicated environmental themes in a more practical way.

In order to assess the effect of this methodology on academic achievement, we administered pre- and post-tests. The experimental group greatly outperformed the control group, which had scored an average of 34.7% in the pre-test, to an average of 46.2% in the post-test. In addition, the experimental group marginally surpassed the control group with a score of 94.3% in post-test comparisons, while the latter group scored 93.7%. This noteworthy development demonstrates how well the kinesthetic approach engages pupils and improves their academic performance.

Our findings demonstrated that kinesthetic learning promoted critical thinking, problem-solving, and teamwork in addition to raising student engagement. Students were able to engage with the subject matter more deeply by engaging with the content physically. Kinesthetic exercises offer a more dynamic and effective learning experience, according to the method's connection with experiential learning theories. This is especially true for disciplines like social studies, where real-world application and engagement are essential to grasping complicated ideas.

4. Background

Study

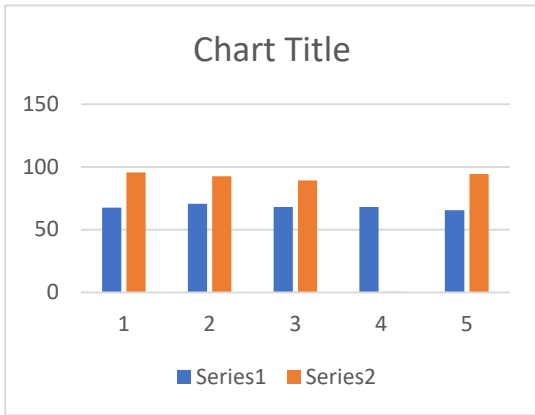


5. 5.2- Experimental Group Result Analysis

6. The experimental group graph is representing the data from the same study on the "Effectiveness of Teaching Social Studies Through the Kinesthetic Method for Enhancing Students' Academic Performance." Same as the previous graph, it shows two sets of results, Series 1 (blue bars) representing pre-test scores of the experimental group and Series 2 (orange bars) representing post-test scores of the experimental group. The notable feature of the graph is increasing in scores from pre-test to post-test for all topics. The graph showed significant improvement suggests that the kinesthetic teaching method was highly effective in the experimental group, confirming the hypothesis that this teaching approach enhances student engagement and overall academic performance. The post-test scores (Series 2) are consistently around 80–90%, a strong indicator that students benefitted from the active, hands-on learning method. The pre-test scores for the experimental group (Series 1) seem to hover around the 60–70% range, similar to those of the control group. The post-test results across all five topics show a consistent level of improvement, with scores ranging from 80 to 90%. This suggests that the kinesthetic method was effective across different topics within Social Studies, whether the focus was on environmental pollution, its effects on plants and human health, or the importance of recycling. This uniform improvement showed the many different skills of kinesthetic teaching as an instructional method for various topics and subtopics. In a same fashion, the control group pre-test scores for the experimental group were moderate and suggesting that the students had a basic understanding of the subject matter but lacked depth in certain areas.

The finding align with educational research that highlights the benefits of kinesthetic learning, especially for subjects that involve real-world problems like pollution and environmental health. By allowing students to actively participate in their learning activities, the kinesthetic teaching method helps to deepen understanding and make abstract concepts more tangible. The finding showed that this method is not only, particularly relevant for middle school students, such as those in grade 6, who may benefit from learning styles that engage their physical and mental faculties simultaneously,

but relevant for all educational stages.



5.3- Post-Test vs Post- Test Result Analysis

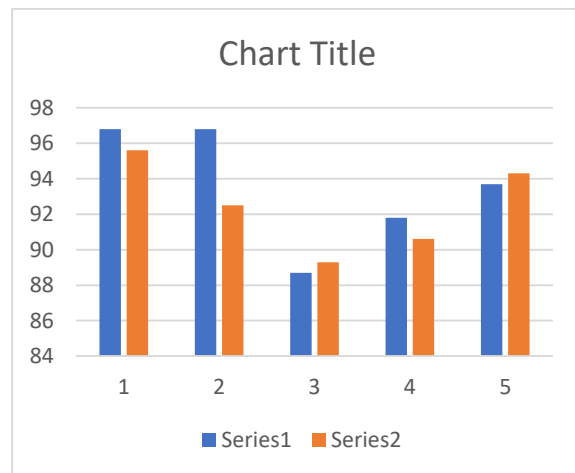
The post-test vs post-test compares the post-test results of different topics within the experimental group from the study on the "Effectiveness of Teaching Social Studies Through the Kinesthetic Method for Enhancing Students' Academic Performance." The result showed the change in teaching method using the kinesthetic method, focusing on topics like "Pollution," "Effect of Pollution on Plants," "Effect of Pollution on Human Health," "Effect of Pollution on the Environment," and "Importance of Recycling." The topic one "Pollution" shows the highest post-test score for the experimental group, with the score for Series 1 (blue) slightly higher than Series 2 (orange). Both hover near 96-98%, that indicates that the kinesthetic method was quite effective in helping students understand the general concept of pollution. Similarly, the second topic "Effect of Pollution on Plants" reveals a notable drop in the post-test scores for Series 2 (orange), which is around 92%, compared to Series 1 (blue), which is close to 97%.

The third topic "Effect of Pollution on Human Health" has one of the largest gaps between Series 1 and Series 2, the score for Series 1 (blue) is around 88%, while the score for Series 2 (orange) is similar, at around 90%.

The fourth topic "Effect of Pollution on Environment," both Series 1 and Series 2 post-test scores are lower for Topic 4, ranging between 86-92%, indicates the kinesthetic method faced challenges when addressing more complex and abstract environmental concepts.

The topic five "Importance of Recycling," shows very little difference between Series 1 and Series 2, with both scoring around 94-95%, that indicates that the kinesthetic method was equally effective for both assessments in helping students understand the importance of recycling.

This interpretation highlights that experimental group's post-test results reflect a generally strong performance, suggesting that the kinesthetic method was effective overall. Although, there is variation in how well students performed across different topics, demonstrating the strengths and limitations of the method in teaching specific content. Similarly, the finding reveals that the need for flexibility in teaching methods, while the kinesthetic method enhances engagement and learning for certain topics, it should be complemented with more traditional instructional methods to ensure students grasp the full range of content in Social Studies.



5- Conclusion

The study conducted under the project of Iqra University, department of B.Ed, and the course was "Pedagogy Social Studies," at The Ceder School in Karachi, Pakistan, highlights the effectiveness of the kinesthetic teaching method in improving academic performance among sixth-grade students. Students were actively engaged in the teachings through movement and hands-on activities by focusing on five sequential topics: pollution and its impacts on plants, human health, the environment, and the need of recycling. The kinesthetic approach, which is renowned for supporting students' active participation in the learning process, has proven to be effective in improving student engagement and retention. This is especially crucial for courses like social studies, where experience learning helps make abstract ideas more relatable. The findings derived from the pre- and post-test assessments provided unambiguous proof of the Kinesthetic method's efficacy. In the pre-test, students in the control group scored an average of 34.7%, while the post-test results of the experimental group revealed improvement with an average of 46.2%. The outcomes suggest that incorporating kinesthetic activities can significantly boost students' understanding of the subject matter. Furthermore, the beneficial effects of the approach were further demonstrated by comparing the post-test results of the two groups, where the experimental group scored marginally higher (94.3%) than the control group (93.7%). The post-test results show a tendency where kinesthetic learning provides an advantage in performance, particularly when it is repeated and structured well over time, despite the fact that the difference is not statistically significant. One of the main advantages of kinesthetic method is making learning more inclusive. Students with varying learning styles are catered to, especially those who find it difficult to learn using traditional visual or auditory approaches. The approach enables children to digest information in a way that seems engaging and natural by combining movement and hands-on activities. As demonstrated by the increase in exam scores, this results in improved recall and comprehension of difficult subjects. Furthermore, because students are active participants in the learning process rather than passive users of information, the active engagement promoted by kinesthetic learning creates a deeper connection to

the subject matter. In the light of these results, the finding demonstrates that the kinesthetic approach has a great deal of potential to improve student engagement and academic performance, especially in social studies and other disciplines that profit from hands-on learning. This study adds to the increasing body of research that argues for teaching strategies that are more dynamic, student-centered, and go beyond conventional lecture-based training. The kinesthetic approach offers educators a useful tool to help them construct more effective and engaging learning environments in a world where education must adapt to various learning requirements and globalized viewpoints. Overall, the research indicates that the kinesthetic method can be a very successful tactic for raising students' academic achievement and encouraging a deeper comprehension of difficult subjects.

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