

PEER ASSISTED LEARNING STRATEGIES AN EVIDENCE BASED TEACHING METHODOLOGY FOR 21ST CENTURY IN INCLUSIVE CLASSROOM

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Abstract- Peer-Assisted Learning Strategies (PALS) are a proven, Evidence-Based Teaching methodology designed to enhance academic success and social integration in inclusive classrooms. Fixed in social constructivist theories, particularly Vygotsky's Zone of Proximal Development, PALS holds peer interactions to support diverse learners. In this model, students work in precisely structured pairs, taking turns as "coach" and "player", which fosters mutual learning, engagement, and skill development. PALS has been widely researched and shown to improve outcomes in areas such as: Reading Fluency, Comprehension, Mathematical Problem Solving across both general and special education setting. Beyond academic gains, PALS also contributes to social and emotional development by promoting positive peer relationships, increasing self-esteem, and enhancing student motivation. These benefits are particularly crucial in the 21st-century classroom, where diversity and inclusion are key priorities. Still the successful execution PALS required careful planning, appropriate student pairing, and ongoing teacher involvement to address challenges such as cultural and linguistic diversity. As an adaptable and effective strategy, PALS aligns with the goals of 21st-century education by fostering critical skills such as collaboration, communication, and critical thinking, making it an invaluable tool in preparing students for success in an increasingly diverse and interconnected world. This paper explores the theoretical foundations, practical execution and actual evidence supporting PALS, emphasize its significance in contemporary education.

Keywords: Peer Assisted Learning Strategies, Evidence Based Teaching, 21st century, Inclusive Classroom.

1. INTRODUCTION

As education continues to evolve to meet the demands of the 21st century, inclusive classrooms have become the norm. Instructors face the challenge of addressing a wide range learning requirements for special arrangement. The Peer-Assisted Learning Strategies (PALS) model provides an educational approach contact peer relations to support academic literacy, promote social skills, and foster collaborative environment. This thematic paper reviews PALS as an evidence-based approach that aligns with the inclusive and different nature of moment's classrooms. (PALS) is a structured peer- training system where students work in pairs, interspersing between the places of instructor and tutee. This system facilitates complementary literacy, furnishing openings for both students to enhance their understanding of academic content.

In PALS, student pairings are intentionally crafted to improve academic success and promote peer collaboration. Generally, pairs consist of students with differing skill levels to facilitate mutual learning and assistance. For example, a more advanced student can offer guidance and demonstrate effective strategies to a peer who might need extra help. This method not only reinforces the material for the more proficient student but also enhances the confidence and abilities of the student who is struggling.

Role alternation in the PALS (Peer-Assisted Learning Strategies) program is a crucial element that enhances student engagement and learning outcomes. In this model, students take turns being the "coach" and the "player" during their sessions. The coach's role involves guiding the player through the learning material, explaining concepts, and giving feedback, while the player focuses on interacting with the content and practicing new skills. By switching roles, every student gets the chance to both teach and learn, which strengthens their comprehension and boosts their confidence. This rotation not only deepens their understanding of the subject but also improves communication skills and promotes a shared sense of responsibility in the learning process. Engaging in both roles allows students to experience different viewpoints and collaborative problem-solving, making the learning experience more dynamic and effective.

Targeted instructional activities in the PALS (Peer-Assisted Learning Strategies) program are designed to meet specific learning needs and improve academic skills. These activities are selected to align with the curriculum and address key areas where students require improvement. By incorporating focused tasks such as reading comprehension exercises, vocabulary development, or math problem-solving, the program ensures that both the "coach" and the "player" engage in relevant practice. This targeted approach enables students to concentrate on particular skills or concepts they find challenging, offering opportunities for concentrated practice and immediate feedback. Consequently, these targeted activities in PALS not only address individual learning gaps but also foster a more personalized and effective learning experience, reinforcing concepts and skills within a supportive peer-driven environment.

Assessment and feedback play a crucial role in the PALS (Peer-Assisted Learning Strategies) program, essential for effective student learning and development. In PALS, assessment is an ongoing process that occurs as students participate in structured activities and practice exercises. Peers provide immediate feedback during these interactions, helping to clear up misunderstandings and reinforce correct techniques. This feedback is designed to be constructive, with students giving each other specific, actionable advice. This real-time feedback loop not only identifies and addresses learning gaps but also creates a supportive learning environment where students gain confidence in their abilities. By incorporating regular assessment and feedback, PALS ensures that students receive the necessary guidance to enhance their skills and reach their academic goals, while fostering a collaborative and engaging classroom atmosphere.

The 21st-century classroom is characterized by inclusivity, wherein students of different literacy capacities and backgrounds are tutored together. PALS has proven to be an effective tool in these settings, supporting the individual requirements of all learners. Supporting diverse learners in PALS (Peer-Assisted Learning Strategies) involves cultivating an inclusive atmosphere where every student, regardless of their background or abilities, feels valued and empowered. To achieve this, it's important to adapt strategies to meet various learning needs, such as using different instructional methods that cater to visual, auditory, and kinaesthetic learners. Providing materials at varying difficulty levels ensures that all students can engage with content that matches their skill level. Additionally, fostering a classroom culture of respect and collaboration helps students from diverse backgrounds build confidence and work effectively with peers. By setting clear expectations, offering regular feedback, and adjusting approaches based on individual progress, educators can help diverse learners maximize their potential and succeed within the PALS framework.

Struggling students in PALS (Peer-Assisted Learning Strategies) benefit from a well-organized and supportive approach that meets their specific needs while promoting active engagement. To effectively support these students, it's important to pair them with peers who can offer patient and constructive guidance. Implementing targeted interventions, such as differentiated instruction and tailored feedback, addresses individual challenges and gaps in understanding. Consistent monitoring and adjustment of strategies ensure that struggling students receive the right level of support and gradually build confidence and skills. Additionally, fostering a positive and inclusive classroom environment where mistakes are seen as learning opportunities helps students develop resilience and persistence. By focusing on these approaches, educators can help struggling students make significant progress and achieve success within the PALS framework.

Incorporating students with disabilities into PALS (Peer-Assisted Learning Strategies) involves a careful and individualized approach to ensure they fully participate and benefit from the program. It is essential to adapt PALS activities and materials to accommodate diverse needs by providing assistive technology, modifying tasks to suit different learning styles, and offering extra time or support as needed. Pairing students with disabilities with empathetic and understanding peers helps create a collaborative environment that promotes engagement and mutual support. Additionally, training peers to assist respectfully and effectively is important. Regular assessments and open communication among educators, students, and their families are crucial for identifying specific needs and making timely adjustments, ensuring that students with disabilities can thrive and make significant progress within the PALS framework.

Supporting advanced learners in PALS (Peer-Assisted Learning Strategies) involves creating opportunities for these students to expand their knowledge and skills while also aiding their peers. This can be achieved by incorporating enrichment activities that challenge advanced learners and promote higher-order thinking. Pairing them with peers who may need extra help allows advanced learners to consolidate their knowledge and develop leadership and mentoring abilities. Differentiated tasks and flexible grouping help keep advanced learners engaged and motivated by providing appropriately challenging content. Moreover, fostering a classroom environment that values diverse strengths and contributions ensures that advanced learners stay motivated and continue to grow academically, all while positively influencing their peers.

2. REVIEW OF LITERATURE

According to Brown (2001) Peer Assisted Learning Strategies (PALS) offer a valuable approach to teaching reading by involving students in structured peer interactions., reading is a crucial skill in English instruction, requiring more than just information retrieval—it demands cognitive engagement and comprehension, as highlighted by Wallace (1993). Students struggled with reading comprehension, including difficulties with identifying main ideas, vocabulary, and grammar. The existing teaching methods, which lacked adequate support, exacerbated these challenges. To improve reading skills, PALS was proposed.

3. PALS INCLUDES EFFECTIVE STRATEGIES

3.1 Partner Reading and Retelling

Students alternate reading aloud and retelling the text, with corrections made based on prompts, and points awarded for accuracy.

3.2 Paragraph Shrinking

Students summarize paragraphs into ten words or fewer to practice identifying main ideas and enhancing comprehension.

3.3 Prediction Relay

Students predict text content, then read and adjust predictions, summarizing the main idea, with points for accuracy.

These strategies incorporate structured verbal interactions and scripted lessons, promoting both collaborative and independent reading practice.

Allen and Seaman (2010) suggest that online distance learners (ODL) achieve learning outcomes comparable to those of traditional, on-campus students. However, the lack of physical interaction in ODL can negatively impact students' learning experiences, leading to issues such as decreased motivation and increased anxiety, with up to 20% of ODL students withdrawing early (Bawa, 2016; Rush, 2015). Physical presence facilitates crucial interactions, as noted by Garrison and Cleveland-Innes (2005). To address this, peer-assisted learning (PAL) programs, where advanced students mentor peers, have been shown to foster a sense of community and enhance student motivation and experience (Keenan, 2014). Despite PAL's success in traditional settings, there is limited research on its application for ODL. This study aims to fill this gap by systematically reviewing the literature to evaluate the potential benefits of PAL for online learners. The study concluded that the advent of digital technology and Web 2.0 has significantly transformed higher education by enabling students to access learning remotely without leaving their homes.

(PALS) involves students from the same program helping each other learn, regardless of their level or formal teaching roles. This method includes activities like discussion seminars, counselling, and collaborative projects within various group sizes and settings. PALS emphasizes mutual learning and engagement among peers. The Association of Medical Education in Europe (AMEE) identifies around 18 different PAL strategies, such as peer tutoring and peer teaching. These methods foster collaborative learning and are supported by theories like constructivist social theory and cognitive learning theory, which highlight the benefits of peer interactions and similar knowledge levels. PAL is valued for encouraging critical thinking, problem-solving, and professional development, and it is well-received by students who often find peer-led learning more comfortable than traditional teacher-student interactions. It can also reduce faculty workload and support cost-effective education, especially in medical fields where resource limitations are significant. Despite its advantages, the effectiveness of PALS in improving learning outcomes is still debated. The author concluded the systematic review of quantitatively assess PAL's impact on student learning through meta-analysis.

Educators have long aimed to offer the least restrictive environment (LRE) for students with disabilities, ensuring they have access to general education as much as possible, as mandated by the Individuals with Disabilities Education Act (IDEA). The No Child Left Behind Act (NCLB) also emphasized the importance of including all students in the general education curriculum and held teachers accountable for their students' learning outcomes. Both IDEA and NCLB advocated for using scientific research and evidence-based practices to meet the diverse needs of students. Proficiency in reading, linked to academic and social success, is often a challenge, particularly for students with disabilities, who frequently exhibit significant reading deficits. As U.S. schools become more culturally and linguistically diverse (CLD), there is a growing need for English as a Second Language services and targeted interventions. To address these challenges, educators must adapt their teaching strategies. Enhancing reading and language skills is crucial for academic and social success, helping both CLD students and students with disabilities achieve better outcomes and improve their school experiences.

4. OUTCOMES OF PALS

(PALS) have been proven to significantly improve academic performance in both mathematics and literacy. In mathematics, PALS programs typically involve structured peer tutoring and collaborative problem-solving, which aid students in understanding complex concepts and enhancing their problem-solving abilities. Studies show that students participating in peer-assisted math programs often exhibit greater gains in both computational skills and conceptual knowledge compared to those receiving traditional instruction. Similarly, in literacy, PALS techniques such as paired reading and peer-assisted writing exercises effectively boost reading fluency, comprehension, and writing skills. Evidence indicates that students benefit from the reciprocal teaching and feedback provided by their peers, which strengthens their learning and builds their confidence.

(PALS) provide notable social and behavioural benefits alongside their academic advantages. Participating in PALS helps students develop essential interpersonal skills, including effective communication, teamwork, and empathy. Through collaboration and mutual support, students learn to handle social interactions, resolve conflicts, and achieve shared goals, thereby enhancing their social skills. Behaviourally, PALS encourages a sense of accountability and responsibility, as students are motivated to prepare thoroughly for peer interactions and make meaningful contributions to their groups. This structured engagement often boosts motivation and involvement, as students feel more connected to their learning community. Additionally, PALS can enhance self-esteem and lessen anxiety, as the supportive peer relationships offer a safe environment for taking risks and receiving constructive feedback.

(PALS) greatly boost student engagement and motivation by fostering an interactive and supportive learning environment. Collaborative activities in PALS often lead to heightened interest and enthusiasm for learning, as the group dynamic makes the process more engaging and less isolated. Immediate feedback and encouragement from peers help maintain motivation and encourage a sense of ownership over one's learning. Additionally, the social nature of PALS, where students are accountable to each other, can drive increased effort and participation. Students tend to be more committed when they know their contributions directly affect their peers' learning experiences and results.

5. KEY STUDIES SUPPORTING PALS

Peer-Assisted Learning Strategies (PALS) have been validated by numerous key studies for their positive impact on student performance and engagement for example:-

- Fuchs et al. (2001) demonstrated that PALS markedly enhanced reading fluency and comprehension among elementary students, especially those struggling with reading challenges.
- Similarly, research by Jenkins et al. (2003) revealed that PALS not only improved students' reading abilities but also strengthened peer relationships and increased motivation.

5.1 Implementing PALS in the Inclusive Classroom

Implementing Peer-Assisted Learning Strategies (PALS) in an inclusive classroom involves establishing a setting where every student, regardless of their abilities, can benefit from collaborative learning. PALS is a structured approach where students work in pairs to deepen their grasp of academic content, with each partner taking on specific roles to support and challenge each other. In an inclusive environment, where students have diverse needs and varying levels of ability, PALS proves especially effective. Teachers can pair students thoughtfully to balance each other's strengths and weaknesses, ensuring that all students have the chance to contribute and learn from their peers. This method not only builds a supportive learning community but also helps students develop empathy and communication skills while reinforcing their own understanding of the material.

5.2 Classroom Management PALS

Effective classroom management within a Peer-Assisted Learning Strategies (PALS) framework is essential for maintaining a productive and focused collaborative learning environment. This involves clearly defining behaviour expectations and roles for each pair, helping students understand their duties and the objectives of each session. Teachers should establish and communicate rules for respectful interaction, active participation, and constructive feedback. Additionally, actively monitoring and guiding pairs can prevent distractions and promptly address any conflicts or issues that may arise. Regular check-ins and well-organized pairing routines also contribute to a smoother and more efficient classroom experience. By creating a positive and well-regulated environment, teachers can enhance the success of PALS, ensuring that students engage effectively with their peers and achieve optimal learning outcomes.

6. APPLICATION IN CORE SUBJECTS

6.1 Reading

Reading can greatly improve students' literacy skills through structured peer interactions. In a PALS reading session, students work in pairs to practice essential reading strategies such as decoding, fluency, and comprehension. Typically, one student reads aloud while the other serves as the coach, offering feedback and support. This collaborative approach allows students to deepen their understanding of the text through repeated practice and discussion. For instance, as one student reads, their partner can assist with difficult words, ask questions to gauge comprehension, and provide encouragement on expression and phrasing. This reciprocal teaching model not only enhances reading skills but also boosts students' confidence and motivation through positive peer interactions.

6.2 Mathematics

Mathematics involves students working together to enhance their understanding of mathematical concepts and problem-solving skills. During a PALS math session, students pair up to address various tasks, such as solving problems, exploring mathematical ideas, and explaining their thought processes to each other. Typically, one student assumes the role of the problem solver, while the other provides support by asking guiding questions, offering hints, or checking solutions. This collaborative interaction helps students clarify their reasoning, gain new perspectives, and strengthen their grasp of mathematical procedures.

6.3 Adapting to technology in the 21st century classroom

Incorporating technology into Peer-Assisted Learning Strategies (PALS) in modern classrooms involves using digital tools to enhance collaborative learning. Technology can support PALS by providing interactive platforms where students collaborate on shared documents, participate in virtual discussions, and access diverse multimedia resources. For example, tools like Google Docs and various collaborative apps enable students to work together in real-time on assignments, such as math problems or reading tasks, and receive immediate feedback, creating a more dynamic learning experience. Additionally, technology allows for differentiated instruction, enabling teachers to customize activities and resources to individual student needs while still fostering peer interaction.

Educational software and apps offer opportunities for practice, instant assessments, and personalized feedback, further enhancing the PALS approach.

7. CHALLENGES AND SOLUTIONS IN IMPLEMENTING IN PALS

7.1 Challenges

Implementing Peer-Assisted Learning Strategies (PALS) can pose several challenges that educators must address to ensure the approach is effective. One major issue is the need to pair students appropriately and assign roles that align with their skill levels. Incorrect pairings can result in imbalanced interactions, where one student may dominate while the other struggles, which can reduce the overall effectiveness of the peer support. Additionally, managing classroom dynamics and keeping students focused can be challenging, as they may become distracted or require constant supervision to remain engaged. Teachers also need to train students to give constructive feedback and support each other effectively, which demands clear instruction and practice.

7.2 Solution

To address the challenges of implementing Peer-Assisted Learning Strategies (PALS), educators can employ several solutions to ensure the approach is effective and beneficial for all students. First, careful pairing of students based on their strengths and needs can help balance interactions and ensure that each student plays a constructive role. Teachers can use assessments and observations to match partners strategically, providing clear guidelines on how to collaborate and support one another. To maintain focus and manage classroom dynamics, establishing clear routines and behavioural expectations for PALS sessions is essential. Teachers should regularly circulate and monitor pairs, offering guidance and intervening when necessary to keep students on track. Training students in effective peer feedback and support techniques can be facilitated through modelling, practice sessions, and providing structured feedback tools.

7.3 The future of PALS in 21ST- Century Education

In the 21st century, peer-assisted learning strategies are expected to significantly transform education by creating more collaborative and student-focused environments. These methods utilize the combined knowledge and varied viewpoints of students to improve learning results. With the growing role of technology in education, digital platforms will enable peer interactions and joint projects, overcoming geographical limitations and facilitating global idea exchanges. Resources like virtual study groups, online tutoring, and interactive discussion boards will provide students with real-time support, boosting their comprehension and critical thinking abilities.

7.4 Technology Integration

The integration of technology into the (PALS) is transforming how students work together and learn. Digital tools like video conferencing, collaborative software, and virtual whiteboards enable real-time group interactions and collaboration, regardless of where participants are located. These technologies make communication fluid, allowing students to exchange resources, give immediate feedback, and participate in insightful discussions. Adaptive learning systems can monitor individual progress and recommend specific peer interactions to ensure personalized support. Furthermore, online forums and social media create opportunities for informal learning and ongoing engagement beyond the classroom.

7.5 Aligning with 21st- Century skills

Aligning Peer-Assisted Learning Strategies (PALS) with 21st-century skills means incorporating critical competencies such as critical thinking, communication, collaboration, and creativity into peer-based activities. By creating opportunities for students to tackle complex problems together, PALS promotes the development of these vital skills. For example, working on group projects and engaging in discussions helps students articulate their thoughts clearly, consider various viewpoints, and reach agreements, thereby improving their communication and teamwork skills.

7.6 Promoting Equity and Inclusion

Promoting equity and inclusion in Peer-Assisted Learning Strategies (PALS) is essential for creating a supportive and diverse educational environment. By ensuring that all students have equal access to learning opportunities, PALS can bridge gaps that might otherwise disadvantage certain groups. Implementing diverse peer groupings and providing targeted support can help address varying needs and learning styles, fostering a more inclusive atmosphere. Digital tools and platforms can further enhance equity by offering resources and accommodations tailored to different learning preferences and needs.

8. FINDINGS

(PALS) have proven highly effective across different educational settings, with a growing body of evidence supporting their benefits. Research indicates that PALS can significantly boost academic performance, enhance student engagement, and promote critical thinking. For example, students involved in peer tutoring or collaborative learning often outperform those in traditional learning settings. This effectiveness is attributed to several factors: students' explanations of concepts to each other deepen their own understanding, the immediate feedback exchanged helps correct misunderstandings, and the social dynamics of group learning can increase



motivation and accountability. Additionally, meta-analyses suggest that PALS is especially advantageous for diverse learners, including those with learning disabilities, as it provides customized support and encourages an inclusive learning environment. Overall, the evidence highlights that PALS not only enhances academic achievement but also fosters important interpersonal skills.

CONCLUSION

Peer-Assisted Learning Strategies (PALS) present a highly effective, research-backed method for addressing the demands of contemporary inclusive classrooms. By encouraging collaboration among students, PALS enhances academic performance and develops essential social skills. This approach supports the objectives of modern education by fostering a supportive, inclusive, and high-achieving learning environment. As educational practices advance, PALS will continue to be a crucial technique for boosting learning outcomes and ensuring every student has the chance to excel.

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