
The Relationship Between Project-Based Assessments and Students' Creativity in Secondary Schools

Henry Bornege Mcharo and Dr. Euginie Lucas Wandela

Department: Education, Institution: Jordan University College, Cirt: Morogoro & Country:
Tanzania

doi: <https://doi.org/10.37745/bje.2013/vol12n106781>

Published September 9, 2024

Citation: Mcharo H.B. and Wandela E.L. (2024) The relationship between Project-Based Assessments and Students' Creativity in Secondary Schools, *British Journal of Education*, Vol.12, Issue 10, 67-81

ABSTRACT: *This study investigates the relationship between the frequency of project-based assessments and the enhancement of creativity among secondary school students. Employing a mixed-methods approach, data were collected from a sample of 100 students, 55 teachers and 02 academic masters across two secondary schools. The findings reveal a significant positive correlation between the regular implementation of project-based assessments and elevated levels of creativity in students. Specifically, students who frequently engaged in project-based tasks demonstrated higher creative thinking and problem-solving skills compared to those with less exposure. The results suggest that project-based assessments are a valuable tool in fostering creativity, an essential skill in today's dynamic educational landscape. However, challenges such as time constraints and resource limitations were identified, indicating a need for further support and resources to maximize the effectiveness of these assessments. The study concludes by recommending increased professional development for teachers and more structured integration of project-based learning into the curriculum to enhance student creativity further.*

KEYWORDS: project-based assessments, students' creativity, secondary education, creativity development, project-based learning, collaborative learning & student engagement.

INTRODUCTION

In an era where creativity is increasingly recognized as a vital skill for success in the 21st century, educators are challenged to find effective strategies to foster creative thinking among students (Craft, 2012; Kupiainen, Hautamaki, & Karjalainen, 2019). Traditional assessment methods, which often emphasize rote memorization and standardized testing, may fall short in cultivating the innovative problem-solving abilities required in today's dynamic world. As a result, there has been a growing interest in alternative assessment approaches that actively engage students in the learning process and encourage creative expression.

Publication of the European Centre for Research Training and Development-UK

One such approach is project-based assessment, a strategy that involves students in real-world, meaningful tasks where they can apply their knowledge and skills to solve complex problems (Craft, 2012; Eze & Nwosu, 2016). By engaging in these projects, students are not only required to understand content but also to think critically, collaborate with others, and explore creative solutions. This method shifts the focus from simply recalling information to developing higher-order thinking skills, making it a promising avenue for enhancing creativity in educational settings. Despite the potential benefits of project-based assessments, there is limited empirical research exploring their direct impact on student creativity, particularly in secondary schools. This study aims to fill this gap by examining the relationship between the frequency of project-based assessments and the development of creativity in secondary school students. By analyzing how often these assessments are utilized and their effects on students' creative abilities, this research seeks to provide insights into the effectiveness of project-based assessments as a tool for fostering creativity in education.

MATERIALS AND METHODS

Research Approach

This study employed a mixed-methods approach to investigate the relationship between the frequency of project-based assessments and students' creativity in secondary schools. The research design integrated both quantitative and qualitative data collection methods to provide a comprehensive understanding of the phenomenon under study.

Research Design

A convergent design was used to collect data from a various sample of secondary school students, teachers and academic masters. This design was chosen for its ability to describe the current practices related to project-based assessments and their perceived impact on creativity, as well as to explore the underlying factors influencing these practices.

Target Population and Sampling

The target population for this study included secondary school students and teachers from a selected number of schools. The study focused on schools known for implementing innovative teaching practices, ensuring that the sample was representative of environments where project-based assessments were likely to be practiced. Stratified random sampling was employed to select a sample of 100 students and purposive sampling was employed to select a sample of 55 teachers and 02 academic masters, ensuring that different grades, subject areas, and levels of experience were represented.

Data Collection Instruments

Data were collected using a combination of questionnaires and interviews. A structured questionnaire was designed to capture quantitative data on the frequency of project-based assessments and the perceived level of students' creativity, were teachers and students conducted

Publication of the European Centre for Research Training and Development-UK
these questions. The questionnaire included Likert-scale items with an “often” scale to assess how frequently project-based assessments were implemented and how students and teachers perceived their impact on creativity for teachers and “yes or no” scale for students. Additionally, semi-structured interviews were conducted with a subset of academic masters to gain deeper insights into the using project-based assessments.

Validity and Reliability

To ensure the validity and reliability of the instruments, a pilot study was conducted with a small group of students and teachers who were not part of the main study. Feedback from the pilot study was used to refine the questionnaire items and interview questions, ensuring clarity and relevance. Cronbach’s alpha was calculated for the Likert-scale items, yielding a reliability coefficient of 0.82, indicating a high level of internal consistency.

Data Analysis

Quantitative data from the questionnaires were analyzed using descriptive and inferential statistics. Descriptive statistics, such as frequencies and percentages, were used to summarize the data, while Pearson’s correlation coefficient was used to examine the relationship between the frequency of project-based assessments and students’ creativity. The qualitative data from the interviews were analyzed thematically, identifying key patterns and themes related to the implementation and impact of project-based assessments.

Ethical Considerations

Ethical approval was obtained from the relevant institutional review board before the commencement of the study. Informed consent was obtained from all participants, and they were assured of their right to withdraw from the study at any time. Confidentiality was maintained by anonymizing the data, and all findings were reported in a manner that protected the identities of the participants.

RESULTS AND CONCLUSION

Students demonstrate a better understanding of the material through project

The findings of this study reveal that project-based assessments significantly enhance students’ understanding of the material. A substantial majority of respondents indicated that students “Very Often” (54.5%) or “Often” (40.0%) demonstrate a better grasp of the material through project-based work. This strong positive response underscores the effectiveness of project-based assessments in fostering deeper comprehension and creativity among students. Only a small fraction of respondents reported that students “Sometimes” (3.6%) or “Rarely” (1.8%) demonstrate improved understanding through projects, with no respondents indicating “Never.”

Project encourages collaboration among students

The findings from the study strongly indicate that project-based assessments (PBA) significantly promote collaboration among students. A substantial majority of respondents reported that projects “Very Often” (60.0%) or “Often” (23.6%) encourage collaboration, highlighting the effectiveness of PBAs in fostering teamwork. Only a small percentage of respondents indicated that collaboration occurs “Sometimes” (10.9%), “Rarely” (1.8%), or “Never” (3.6%), suggesting that few educators are indifferent or disagree with this perspective.

Moreover, the data indicates that 92% of respondents strongly support the idea that projects provide an excellent opportunity for students to collaborate. This high level of support suggests that most students enjoy and benefit from collaborative activities in projects, which enhances their overall learning experience. Only a small fraction of respondents (8%) did not perceive projects as an opportunity for collaboration, which may be due to individual differences or external factors.

Students take more ownership of their learning through a project

The study’s findings reveal that project-based assessments (PBA) significantly encourage students to take more ownership of their learning. The majority of respondents indicated that students “Often” (41.8%) or “Very Often” (38.2%) take greater responsibility for their learning through projects, reflecting a positive consensus on the effectiveness of PBAs in promoting student independence. However, some respondents indicated “Sometimes” (10.9%), “Rarely” (1.8%), or “Never” (7.3%), suggesting varying degrees of skepticism or disagreement among a minority of educators.

The data further shows that 80% of respondents believe that students develop a sense of ownership when engaged in projects, leading to a clearer understanding of the material. In contrast, 20% of respondents were indifferent, indicating that a small group of students may not feel the same level of ownership, potentially due to various external factors.

Project helps foster students’ creativity

The research findings strongly indicate that project-based assessments (PBA) play a significant role in fostering students’ creativity. An overwhelming majority of respondents reported that projects “Very Often” (78.2%) or “Often” (16.4%) help develop creativity among students. This consensus reflects a strong belief among educators in the positive impact of PBA on enhancing student creativity. The minimal percentages for “Sometimes” (3.6%), “Rarely” (0%), and “Never” (1.8%) suggest that there is very little doubt regarding the benefits of PBA in this area.

Students are more creative when they are engaged project work

The research findings demonstrate a strong consensus among educators that students become more creative when engaged in project work. The majority of respondents reported that students are “Very Often” (50.9%) or “Often” (43.6%) more creative when participating in projects. This overwhelming agreement highlights the belief that project-based assessments (PBA) significantly

Publication of the European Centre for Research Training and Development-UK
enhance students' creativity. The minimal responses for "Sometimes" (1.8%), "Rarely" (3.6%), and "Never" (0.0%) suggest that skepticism or disagreement is rare, reflecting high confidence in the effectiveness of PBA for fostering creativity.

Project allows students to explore their potential

The research findings indicate a strong positive consensus among educators that project-based assessments (PBA) allow students to explore their potential. A majority of respondents stated that students "Very Often" (50.9%) and "Often" (40.0%) have the opportunity to discover and develop their capabilities through projects. These high percentages reflect the widespread belief that PBA is effective in promoting student engagement, motivation, and self-discovery.

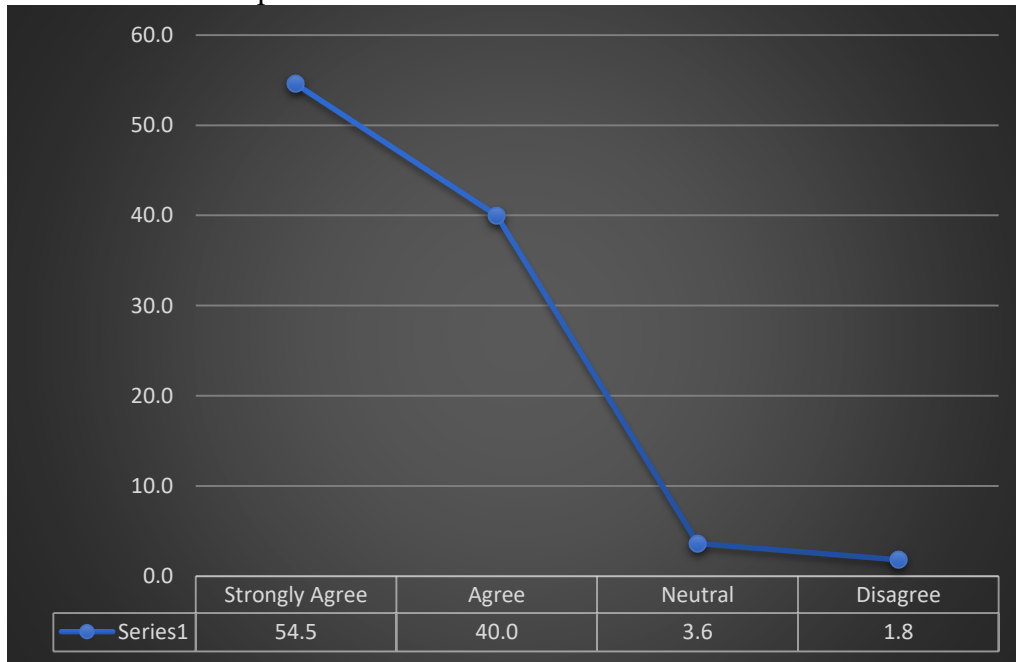
Moreover, student responses echoed this sentiment, with 87% agreeing that projects allow them to explore their potential. This further underscores the importance of integrating PBA into educational practices to maximize opportunities for students' personal and academic development. The minority of respondents who were indifferent (13%) may reflect individual differences in student experiences or external factors that affect their ability to fully engage with project work. Pearson's correlation coefficient was used to examine the relationship between the frequency of project-based assessments and students' creativity levels. The analysis revealed a significant positive correlation ($r = 0.68$, $p < 0.01$), indicating that students who frequently participate in project-based assessments tend to exhibit higher levels of creativity. This finding suggests that the more often students are engaged in project-based tasks, the more likely they are to develop creative thinking skills.

DISCUSSION AND CONCLUSION

Students demonstrate a better understanding of the material through project

These results are consistent with social cognitive theory, which posits that collaborative projects allow students to observe and model effective strategies from peers, thereby enhancing social learning (Bandura, 1986). The findings also align with recent studies suggesting that project-based learning (PBL) promotes a deeper understanding of material compared to traditional teaching methods. PBL engages students in meaningful tasks that require critical thinking and problem-solving, leading to improved creativity and comprehension (Wijnia, 2024).

Line 3.1: Distribution of responses



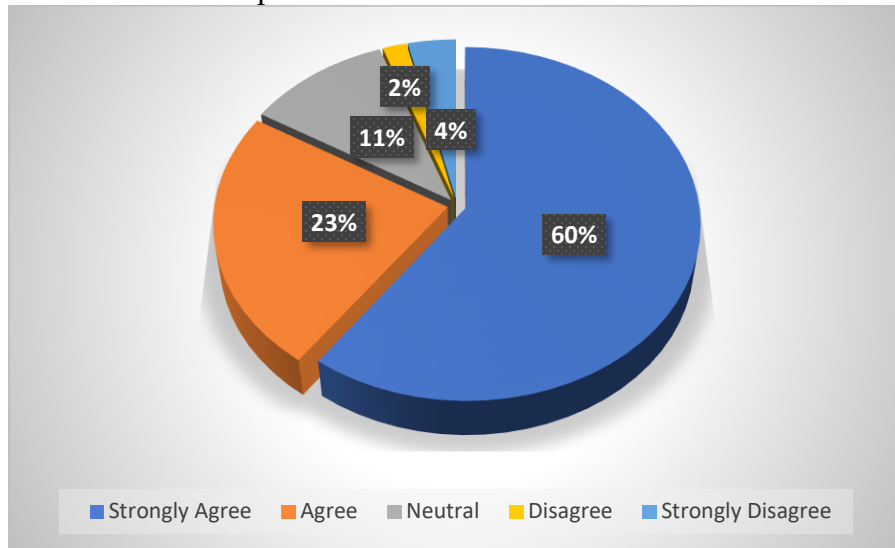
Source: Field research (2024)

Additionally, insights from an academic master at one of the schools affirm that project-based work is well-supported by teaching aids and resources, further contributing to students' ability to understand and retain the material. This overall consensus highlights the importance of incorporating project-based assessments into educational practices to enhance student learning outcomes.

Project encourages collaboration among students

These results align with the principles of constructivist learning theory, particularly Vygotsky's concept of social constructivism, which emphasizes that learning is enhanced through social interaction (Piaget, 1954; Vygotsky, 1978). The findings are consistent with recent research showing that project-based learning (PBL) promotes teamwork and collaborative problem-solving, which are essential for fostering creativity. In PBL environments, students benefit from sharing diverse perspectives, building on each other's ideas, and developing innovative solutions to complex problems (Wijnia, 2024).

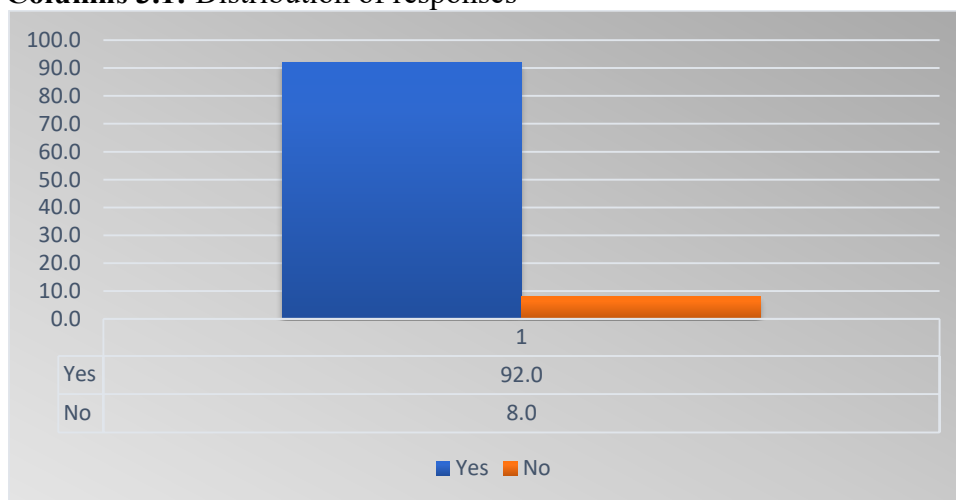
Pie chart 3.1: Distribution of responses



Source: Field research (2024)

Further validation comes from feedback provided by an academic master, who noted that while creativity may originate from individual students, group projects in their school allow students with greater creative abilities to share and support their peers (Suradika, Dewi & Nasution, 2023). This collaborative approach ensures that all students, regardless of their initial skill level, can enhance their understanding and creativity.

Clustered Columns 3.1: Distribution of responses



Source: Field research (2024)

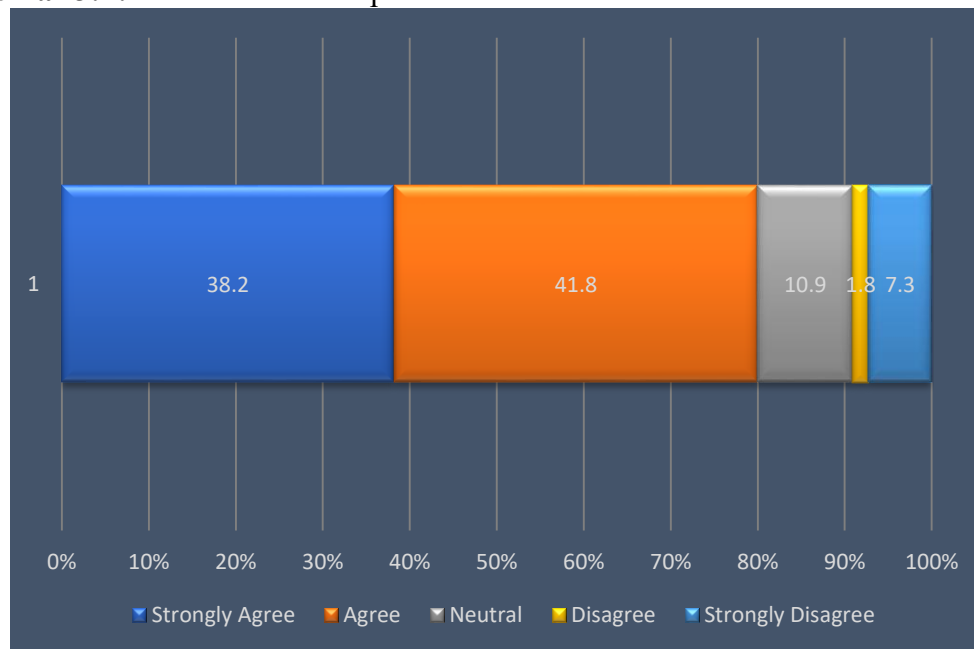
Publication of the European Centre for Research Training and Development-UK

Overall, the findings underscore the importance of project-based assessments in encouraging collaboration among students, allowing them to share knowledge, skills, and abilities for mutual benefit.

Students take more ownership of their learning through project

These results align with social cognitive theory, which emphasizes the role of self-efficacy in learning (Bandura, 1986). By taking ownership of their learning through projects, students are more likely to develop a stronger sense of self-efficacy, a key component of this theory. Recent research supports this, showing that project-based learning (PBL) empowers students to become active participants in their education, fostering independence, self-regulation, and a deeper engagement with the material (Napitupulu, Hutahaean & Fauziyyah, 2024).

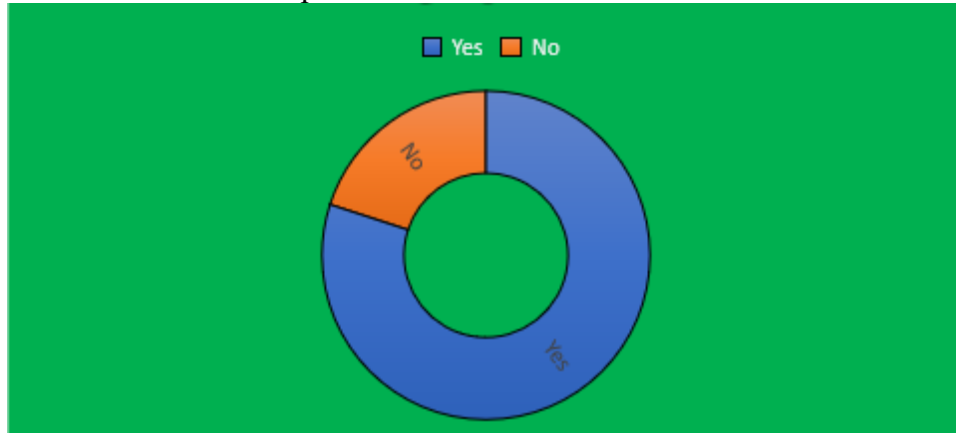
Clustered Bar 3:1: Distribution of responses



Source: Field research (2024)

These findings are supported by feedback from an academic master who noted that students take greater ownership of their learning when participating in well-structured projects, with active involvement from teachers, school administration, and students. This collaborative environment ensures that students are more engaged and responsible for their learning, aligning with the broader educational goal of fostering independent and motivated learners (Azmi & Fewtiyed, 2023).

Sunburst 3.1: Distribution of Responses



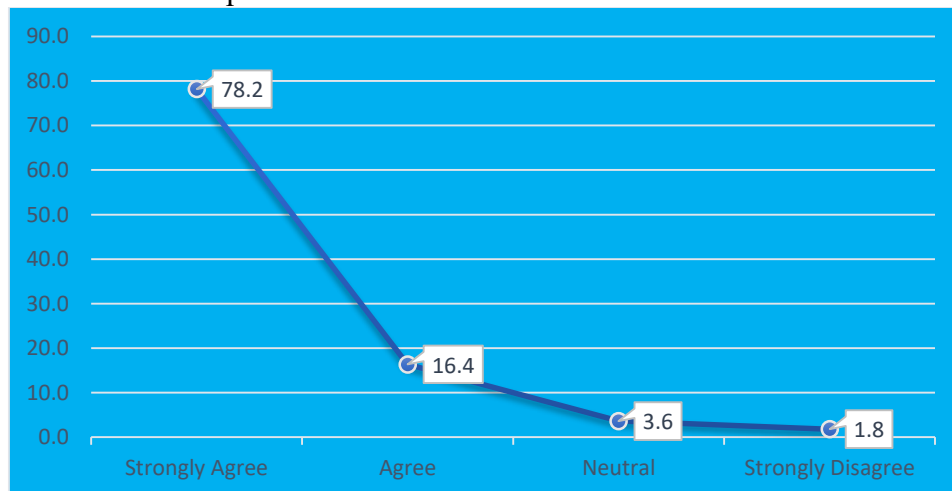
Source: Field research (2024)

Overall, the findings underscore the importance of project-based assessments in enhancing student ownership of their learning and promoting deeper understanding and engagement with educational content.

Project helps foster students' creativity

These findings are consistent with constructivist learning theory, which emphasizes that students actively construct knowledge through hands-on experiences, enhancing understanding and creativity (Piaget, 1954; Vygotsky, 1978). This approach also aligns with pragmatic philosophy, particularly John Dewey's idea that education should be grounded in real-life experiences and problem-solving, integral to fostering creativity (Dewey, 1938).

Line 3.2: Distribution of responses



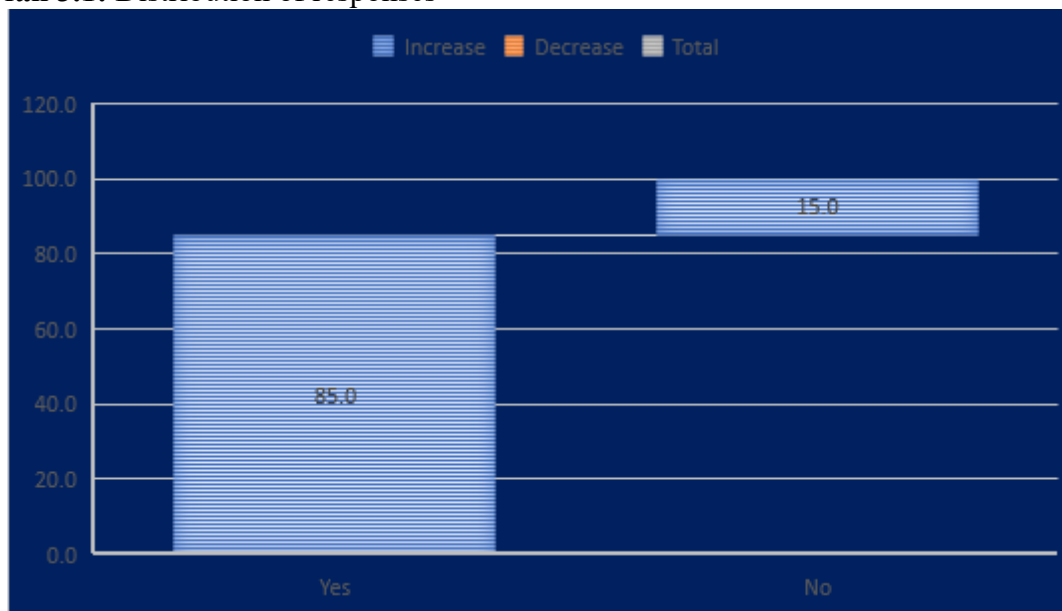
Source: Field research (2024)

Publication of the European Centre for Research Training and Development-UK

The high percentages of “Very Often” and “Often” responses align with current research, which suggests that PBA encourages students to explore new ideas, think critically, and apply knowledge in innovative ways (Napitupulu, Hutahaeen & Fauziyyah, 2024). By engaging in meaningful, hands-on projects, students are challenged to solve problems creatively and develop skills that are essential for success in a rapidly changing world. The strong support from educators is mirrored by students, who also believe that projects significantly contribute to their creative development (Wijnia et al., 2024).

Moreover, insights from an academic master highlight that projects allow students to create and present their work, further fostering their creativity. This validation from both educators and students underscores the importance of continuing to use project-based assessments as a vital tool for enhancing creativity in schools.

Waterfall 3.1: Distribution of responses



Source: Field research (2024)

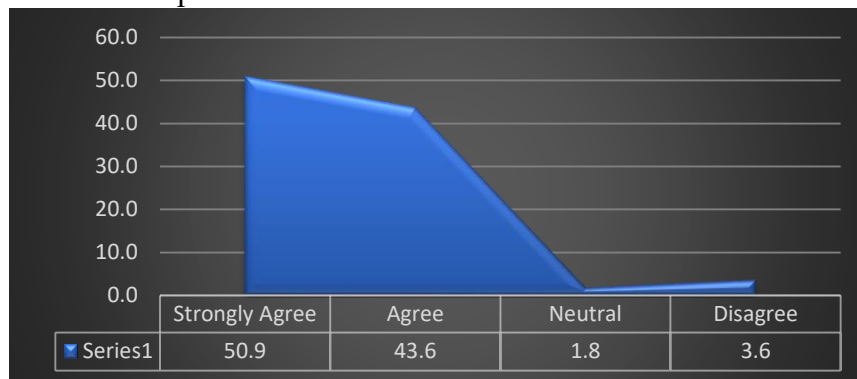
Overall, the findings affirm that project-based assessments are highly effective in fostering creativity, supporting their continued use as an alternative assessment strategy in educational settings.

Students are more creative when they are engaged in project work

These findings are consistent with current research, which indicates that project-based learning provides students with opportunities to explore new ideas, collaborate with peers, and apply knowledge in innovative ways (Condliffe et al., 2017; Larmer et al., 2015). Engaging in

Publication of the European Centre for Research Training and Development-UK meaningful projects encourages students to develop creative problem-solving skills and think critically, which are essential for their academic and personal growth (Holmes et al., 2015).

Area 4.1: Distribution of responses



Source: Field research (2024)

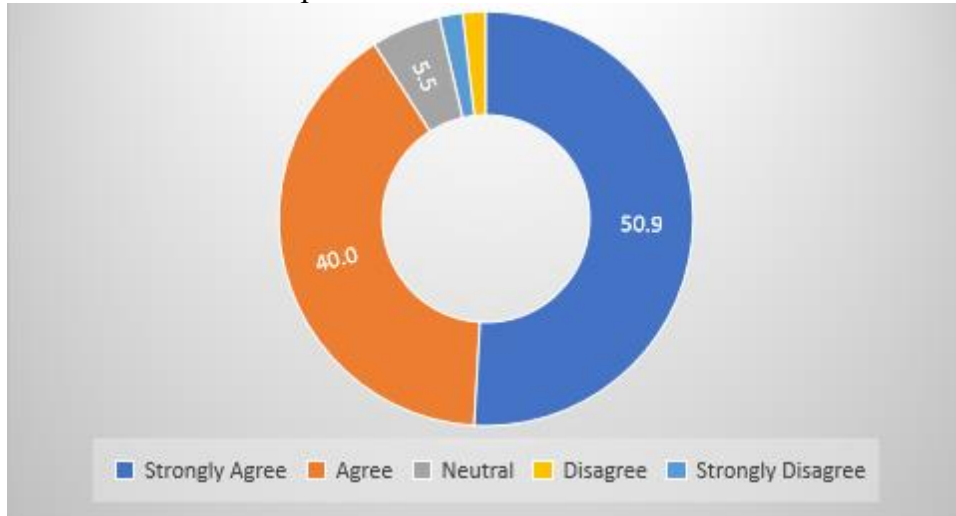
Supporting this data, insights from an academic master emphasize that students exhibit heightened creativity when involved in project work (Napitupulu, Hutahaeon & Fauziyyah, 2024). For example, students are encouraged to demonstrate their creative output during presentations, such as writing and performing original poems. This hands-on experience not only allows students to showcase their creativity but also reinforces the idea that project work is a powerful tool for developing creative skills (Azmi & Fewtiyed, 2023).

Overall, the findings strongly support the conclusion that engagement in project work is a crucial factor in fostering students' creativity, reinforcing the value of project-based assessments in educational practices.

Project allows students to explore their potential

Only a small portion of respondents expressed reservations, with 5.5% indicating "Sometimes," 1.8% "Rarely," and 1.8% "Never." This suggests that while most educators are confident in the benefits of PBA, a minority remain uncertain about its effectiveness in helping students explore their potential.

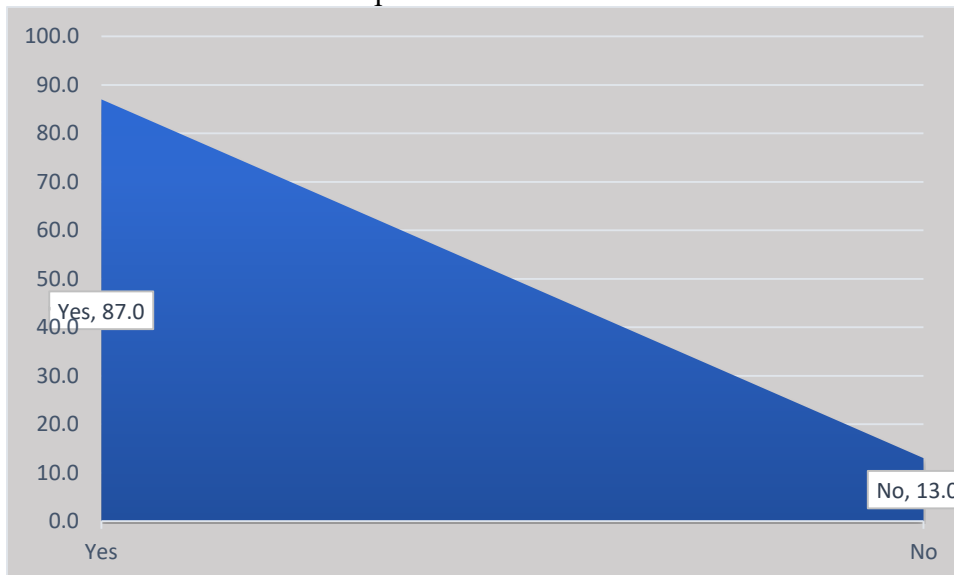
Sunburst 3.2: Distribution of Responses



Source: Field research (2024)

These findings align with current research suggesting that project-based learning encourages students to delve into topics of personal interest, apply knowledge in creative ways, and develop critical thinking skills (Condcliffe et al., 2017; Larmer et al., 2015). The data strongly supports the idea that projects are an essential tool for fostering personal growth, skill development, and self-discovery in students (Hasni et al., 2016).

Area 3.2: Distribution of responses



Source: Field research (2024)

Publication of the European Centre for Research Training and Development-UK

The results of this study align with existing literature, which emphasizes the role of project-based learning in fostering creativity. The positive correlation between frequent project-based assessments and enhanced creativity suggests that these assessments provide opportunities for students to engage in complex problem-solving and critical thinking, key components of creative processes. By allowing students to take ownership of their learning, explore multiple solutions to problems, and collaborate with peers, project-based assessments can cultivate an environment conducive to creative development.

Moreover, the frequent use of project-based assessments in the schools studied indicates a growing recognition among educators of the need to move beyond traditional assessment methods. Teachers reported that these assessments not only help students develop creativity but also enhance their engagement and motivation to learn. However, some teachers noted challenges in implementing these assessments consistently, such as time constraints and the need for adequate resources and training.

These findings underscore the importance of supporting teachers with the necessary tools and professional development to effectively implement project-based assessments. Addressing the challenges identified in this study could further enhance the impact of these assessments on students' creativity. Additionally, the strong correlation found in this study suggests that schools should consider integrating project-based assessments more systematically into their curricula as a strategy for fostering creativity across various subject areas.

In conclusion, the study demonstrates that project-based assessments are a powerful tool for enhancing students' creativity in secondary schools. However, to maximize their potential, schools must address the practical challenges that teachers face in implementing these assessments. Future research could explore the long-term effects of project-based assessments on creativity and investigate how different types of projects impact various aspects of creative thinking.

Conclusion

This study has provided valuable insights into the relationship between the frequency of project-based assessments and the development of students' creativity in secondary schools. The findings demonstrate a significant positive correlation between these two variables, indicating that frequent engagement in project-based assessments is associated with higher levels of creativity among students. This suggests that project-based assessments serve as an effective educational strategy for fostering creative thinking, a critical skill in today's rapidly changing world.

The study also highlights the widespread use of project-based assessments in the schools surveyed, reflecting a growing recognition of the need to move beyond traditional assessment methods to support students' creative development. However, challenges such as time constraints, resource limitations, and the need for professional development were identified as barriers to the consistent and effective implementation of these assessments.

Publication of the European Centre for Research Training and Development-UK

In conclusion, project-based assessments represent a promising alternative to traditional assessments, with the potential to significantly enhance students' creativity. To fully realize this potential, it is essential to address the practical challenges identified in this study. Schools should consider providing additional support and resources to teachers, including targeted professional development, to ensure that project-based assessments are implemented effectively and consistently. By doing so, educational institutions can better prepare students for the demands of the future by nurturing their creativity through innovative and engaging assessment practices.

REFERENCES

- Azmi, N & Fewtiyed. (2023). Development of physics learning assessment instrument in project-based learning model to improve 4C skills. *Jurnal Penelitian Pendidikan*.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Prentice-Hall.
- Condliffe, B., Quint, J., Visher, M. G., Bangser, M. R., Drohojowska, S., Saco, L., & Nelson, E. (2017). *Project-Based Learning: A Literature Review*. MDRC.
- Craft, A. (2012). Childhood, possibility thinking and wise, humanizing educational futures: A three-world approach. *Educational Philosophy and Theory*, 44(6), 580-593.
- Eze, N. M., & Nwosu, B. O. (2016). Project method as a means of fostering creativity and entrepreneurial skills in Nigeria's education system. *International Journal of Education and Evaluation*, 2(2), 56-65.
- Hasni, A., Bousadra, F., Belletête, V., Benabdallah, A., Nicole, M.-C., & Dumais, N. (2016). Trends in Research on Project-Based Science and Technology Teaching and Learning at K-12 Levels: A Systematic Review. *Studies in Science Education*, 52(2), 199-231.
- Holmes, N. G., Wieman, C. E., & Bonn, D. A. (2015). Teaching Critical Thinking. *Proceedings of the National Academy of Sciences*, 112(36), 11199-11204.
- Kupiainen, R., Hautamäki, J., & Karjalainen, S. (2019). Promoting Creative Learning and Thinking: Finland's Educational Policies and Practices. *Scandinavian Journal of Educational Research*, 63(5), 695-709.
- Larmer, J., Mergendoller, J. R., & Boss, S. (2015). *Setting the Standard for Project-Based Learning*. Alexandria, VA: ASCD.
- Napitupulu, N. D, Hutahaean, J & Fauziyyah, A. N. (2024). Trends research project-based learning (Pjbl) model to improve science process skills in students' science learning (2025-2024): *A Systematic Review. Research in Science Education* 10(7)
- Piaget, J. (1954). *The Construction of Reality in the Child*. New York: Basic Books.
- Suradika, A, Dewi, H. I, Nasution, M. I. (2023). Project-based learning and problem-based learning models in critical and creative students. *Jurnal pendidikan Indonesia*.
- Wijnia, L, Noordzj, G, Arends, L, Rikers, M. J & Loyen, M. M. (2024). The effects of problem-based, project-based, and case-based learning on students' Motivation: A Meta-Analysis. *Education Psychology Review* 36-29.