



## RESEARCH ARTICLE

# Contribution of Project-Based Learning on the Development of 21st Century Learning Skills in Public Secondary Schools in Mkuranga District, Tanzania

<sup>a</sup>Prosper Happiness, <sup>b</sup>Raymond Ndomba, <sup>b</sup>Michaela Mhagama

<sup>a</sup> Mkuranga District, Coast Tanzania

<sup>b</sup> Department of Education Foundations, St Augustine University of Tanzania

## Corresponding Author

Happiness Prosper, Email: [happinessprosper3@gmail.com](mailto:happinessprosper3@gmail.com)

## Author's Contributions

All authors contributed equally to this research.

## Article History

Received: August 18, 2025; Accepted: October 28, 2025; Published: December 7, 2025.

## ABSTRACT

This study aimed to find out the contribution of project-based learning on the development of 21st century learning skills in public secondary schools in Mkuranga District. The study was guided by Constructivist Learning Theory developed by Jean Piaget in the 1970s. Furthermore, a qualitative research approach and case study design were used in the study. The sample size of this study was 63, including 1 DSEO, 2 WEOs, 4 head of schools, 16 teachers and 40 students respondents and snowball sampling, quota sampling and purposive sampling techniques were applied to choose the respondents. Also, the instruments for data collection were focus group discussions, interviews and documentary review. Data were analyzed thematically and presented with interpretation by using narration and direct quotations which described the obtained ideas. The study found that in project-based learning, students present their work in front of others, and allow questions and answers during the presentation, which develops both verbal and speaking skills and helps students develop communication skills. Through group work and teamwork, students shared their ideas that make them collaborate and develop collaboration skills to come up with their findings on the work. Additionally, students own their study which foster creativity by increasing engagement, autonomy and motivation, encouraging students to take responsibility for innovative solution and expressing unique ideas in their work, developing creativity skills. Furthermore, students think critically to find the information related to their topics, organize their ideas and come up with the results or findings that contribute on developing critical thinking skills. The study recommend that government and other stakeholder should put more effort on emphasizes the use of participatory teaching method like project-based learning to make more effectively education and to develop essential skills to students.

**Keywords:** Project-based learning; 21st century learning skills; public secondary schools

## INTRODUCTION

Education is always evolving, looking for new and better ways to help students learn and stay engaged. One effective teaching method is Project-Based Learning (PBL), Gampala (2023). Project-based learning emphasises hands-on, active knowledge that encourages students to solve real-life problems, work

with classmates, think deeply, and build important modern-day skills. Unlike traditional teaching methods, project-based learning puts students in real-world situations and values learning by doing, teamwork, critical thinking, and creating a more interactive classroom environment (Nadia et al., 2024). In project-based learning method, students work on a project for

a prolonged time, and their learning is shown through a final product or presentation that reflects their knowledge and understanding (Sedubun & Nurhayati, 2024).

Project-Based Learning (PBL) has its roots in early 20th-century educational reforms. In 1918, William Heard Kilpatrick introduced this method based on the idea that students learn best through real-life experiences. It first appeared in medical education during the 1950s and has since been adopted in different subjects and countries (Xiong, 2021). Guerrero et al. (2021) explains project-based learning centers around active learning, where students take charge of their education. Over the years, technology has become a main part of project-based learning, allowing students to research online, work together remotely, and use digital tools to complete their projects. Using online platforms and cross-subject learning has made project-based learning more flexible, helping students tackle real-world issues while staying more involved and responsible in their learning (García et al., 2020). Project-based learning continues to grow and adapt, supporting deeper learning and preparing students for an ever-changing world (Almulla, 2020).

Globally, Project-based learning (PBL) is a teaching method used in many countries like United States, Malaysia, Japan, Indonesia and China to help students gain real-world skills by working on hands-on tasks and solving real problems. In the United States, although the idea started in the progressive era, it became more common in the 1990s and is now used widely across different subjects with a focus on fairness and inclusion (Boardman et al., 2024, Grossman et al., 2019, ). In Malaysia, PBL supports student-centered learning by involving students in active work, encouraging teamwork, and giving them more control, while teachers act as guides (Yin & Huat 2021, Pham 2018). Similarly, Japan uses project-based learning to develop 21st-century skills through teamwork, creativity, and problem-solving, supported by reforms like the GIGA School Program, which brings technology into the classroom. (Artama et al., 2023, Moustafa & Al-Rashaida, 2024.,). Additionally, China PBL is used as a creative way to teach and assess students, focusing on independence, collaboration, and real-world tasks to deepen understanding (Ma, 2022, Zheng, 2022).

In African countries like South Africa, project-based learning is a learner-focused method that enables students to build essential skills and gain relevant knowledge by working through challenging, open-

ended tasks. By engaging with complex problems, students develop practical knowledge and construction-related abilities (Nxasana et al., 2023; Mutanga, 2024). Similarly in Ghana, project-based learning promotes critical thinking and creativity by encouraging students to analyze information, tackle difficult problems, and relate their learning to everyday life. It also nurtures independent study habits (Kimani, 2024). The Ghanaian government has integrated this method into STEM education to help students build the problem-solving abilities required for technological advancement and economic progress (Boakye-Yiadom et al., 2025). Also in Uganda, the approach increases learner participation, innovation, and teamwork in solving real-life issues (Tukakira et al., 2024). Unlike conventional teacher-led models, it gives students more control over their learning, allowing them to make decisions and develop purposeful projects.

In Tanzania, different teaching methods have been emphasized in schools to improve the education system, focusing on skills like critical thinking, creativity, communication, and teamwork, which are important in the 21st century (TIE, 2019). Project-based learning is an effective teaching method that helps students learn well and provides opportunities to develop research, problem-solving, creativity, communication, collaboration and critical thinking skills. It is also used for continuous student assessment of grades for form four students (Mathias 2023). It involves students working on a topic or issue over an extended period by collaborating with other classmates in groups, conducting investigations, drawing conclusions and communicating their findings by presenting what they come up with to show their understanding and application of knowledge gained (Mkimbili et al 2024). Similarly, in Mkuranga District, teachers emphasise using participatory teaching methods that engage learners directly in their studies and develop important 21st-century learning skills: communication, collaboration, critical thinking and creativity (4Cs). Tanzania education and training policy 2014, 2023 edition gives teachers the information they need to design their lessons through the regular secondary school curriculum efficiently. However, in many public secondary schools, many students who graduate from secondary schools are claimed to lack those essential aids in the country's growth. This circumstance prompted the researcher to investigate how project-based learning, a participatory teaching method, aids in developing these crucial abilities in Mkuranga District

public secondary schools.

## REVIEW OF LITERATURE

### Theoretical Review

The study was based on Jean Piaget's Constructivist Learning Theory (1970), supported by Lev Vygotsky's social constructivist view (1978). The theory suggests that learners build knowledge by interacting with their environment and linking new ideas to what they already know, rather than just receiving facts. It stresses the importance of personal experience and reflection in learning. Piaget believed learning is most effective when learners connect new knowledge with real-life experiences. Later, Vygotsky added that learning also happens through social interaction, especially with more knowledgeable people like teachers or peers (Wibowo et al., 2025). The theory helps explain how Project-Based Learning (PBL) supports the development of essential 21st-century skills in public secondary schools. PBL fits well with constructivist ideas because it encourages students to work on real-life projects, solve problems, think critically, and collaborate in teams. Instead of rote learning, students gain knowledge through active, hands-on tasks. It also supports student-centred learning, where learners take part in their own education. Since PBL focuses on solving real-world problems, constructivist theory shows why it is a useful method for preparing students for future challenges.

### Empirical Review

Boardman et al. (2024) examined enactments of project-based learning in secondary English language arts in Colorado, USA. This study employed mixed-methods study and involved 43 teachers (22 PBL and 21 comparison) and 1,671 students. The study found that project-based learning teachers implemented design principles more frequently than comparison teachers, and most project-based learning teachers noted positive changes in instruction, including more student-centered learning, increased student choice, and greater engagement. Teachers also reported a renewed passion for teaching. Students in project-based learning classrooms reported more meaningful learning experiences, enhanced collaboration, and improved social and emotional learning. The study shows that project-based learning improves positive changes in the teaching and learning process. But, it says nothing about how teachers use project-based learning to develop 21st-century learning skills among

public secondary schools. Therefore, this study discovered how teachers use project-based learning to develop 21st century learning skills among public secondary school students.

In the Philippines, Dullente and Namoco (2023) studied how project-based learning could improve learning and innovation skills for Grade 8 students in a Technology and Livelihood Education (TLE) class at a public high school. They used a quasi-experimental approach with two groups: one used project-based learning (34 students), and the other followed the usual teaching method (31 students). The findings showed that project-based learning helped students gain meaningful knowledge by doing real tasks, planning activities, and working together in real-world settings. These experiences supported both personal and academic growth. Still, this study didn't focus on how project-based learning helps students build a broader set of 21st-century learning skills. Hence, the researcher found out on the contribution of project-based learning on developing critical thinking, creativity, collaboration and communication skills in public secondary schools. In Rwanda, Iradukunda and Andala (2024) looked at how project-based learning influenced student performance in mathematics at TTC Muhanga, involving 889 participants, including student teachers, regular teachers, a dean, and a principal. Using interviews and questionnaires, they found that project-based learning improved students' engagement and academic performance. However, the study also noted problems like a lack of technology and resources. While the study showed positive academic outcomes, it didn't address how project-based learning supports 21st-century learning skills, which this study seeks to explore.

Kimani (2024) in Kenya focused on how project-based learning improves high school students' critical thinking. Reviewing existing studies and online sources, the research showed that project-based learning helps students think more deeply by solving real-life problems and applying their knowledge practically. But while critical thinking was emphasised, other 21st-century skills like collaboration, creativity, and communication were not examined, leaving room for further study on how project-based learning supports these additional skills. Also, Omwenga and Mochama (2022) conducted a study on the role of learning resource project in teacher education, and the study found that the project based learning makes the school and learning more like more like a real-life situation promoting the 21st century

skills meant for surviving in the present world, unlike the ancient modal of passive learning. Thus, this study filled the gap by basing on all four learning skills: creativity, critical thinking, collaboration and communication skills (4Cs).

Bunju (2020) conducted a study on teachers' use of project-based approach to enhance learning in secondary schools in Chamwino, Dodoma. The study investigated teachers' use of the project-based approach in the teaching and learning process to surface appropriate measures to use approach effectively. The researcher examined teachers' perceptions on the project-based approach to determine the extent to which teachers use project-based in schools and identify strategies to enhance teachers' use of the project-based approach. The study adopted a qualitative research approach with a case study design, interviews, observations, document analysis and focus group discussion. Findings indicate that teachers believed a project-based approach can enable students to be creative, critical, active and innovative. The study indicated teachers' readiness to be prepared more about project-based learning to enhance meaningful learning, and the study also recommended the provision of regular professional learning opportunities to teachers. The study explains the use of project-based learning in teaching and the learning process in general and shows how teachers perceive it as an effective teaching method. Still, the study says nothing about how teachers use that method to develop learning skills for students. This gave room to the researcher to find out about teachers' use project-based learning to develop learning skills in public secondary school students.

## METHODOLOGY

This study employed qualitative research approach and a case study design, where the researcher gets detailed information from participants due to their ideas, and experience based on the topic. The research targeted a population of 10,600 individual in Mkuranga District, categorized as 1 District Secondary Education Officer (DSEO), 25 Ward Education Officers (WEOs), 37 head of public secondary schools, 637 public secondary schools teachers, and 9,900 form three and form four public secondary students. The sample size of this study was 63, including 1 DSEO, 2 WEOs, 4 head of schools, 16 teachers and 40 students respondents and snowball sampling, quota sampling and purposive sampling techniques were applied to choose the

respondents. Also, the instruments for data collection were focus group discussions, and interviews. Trustworthiness of the qualitative research data was addressed through credibility, transferability, dependability and confirmability criteria. Data was analyzed thematically and presented with interpretation by using narration and direct quotations which described the obtained ideas. Ethical considerations involved obtaining permissions from relevant authorities, ensuring voluntary participation, maintaining confidentiality, and adhering to APA 7th edition standards.

## RESULTS AND DISCUSSIONS

### Contribution of Project-Based Learning to the Development of 21st Century Learning Skills

The objective evaluated the contribution of project-based learning on the development of 21st century learning skills. The responses were generated from interviews and focus group discussions. The researcher collected data from district secondary education officers, ward education officers, head of schools, teachers and students and came up with the following themes: students get skills like communication skills, collaboration skills, creativity skills, and critical thinking skills. Also, there are other skills like writing and reading.

From the individual interview's conducted with education leaders, district secondary education officer, ward education officers and head of schools, the response showed that project-based learning when used effectively develop 21st century learning skills to secondary schools' students due to the whole process of conducting project up to the presentations presented by students in their classes as their quotation said According to interviewee 1:

Project-based learning provides students with a practical platform to express themselves both verbally and in writing as they work in teams, present their findings with other learners under the supervision of their teachers, and develop all essential skills like communication, collaboration, critical thinking and creativity skills (Interviewee1 July 2025).

This quotation emphasizes the value of project-based learning as a practical means for learners to develop important skills. It shows that through project-based learning, students can express themselves verbally and in writing, allowing them to improve communication skills. By working in teams, students also learn how to

collaborate, share ideas, and solve problems together. Presenting their findings to other learners helps them gain confidence in speaking publicly and engaging with others. The part of teacher's role is crucial in guiding students through this process, ensuring they learn not just academic content but also essential life skills. This is connected with the finding that project-based learning is not just about completing assignments, but about helping students build real-world skills like teamwork, communication, and critical thinking skills that are strong for their future achievement (Artama et al., 2023). Interviewee Y2 noted when said that:

Teachers' noticeable improvement in students' ability to articulate ideas clearly during project presentations, discussions, and peer reviews contributes to stronger oral and written communication skills. Also, the method promotes collaboration because students are required to work in groups over an expected period, so they are working together to come up with their findings. This promotes creativity and critical thinking skills to students (Interviewee Y2 July 2025).

The citation means that students get better at clearly expressing their ideas through activities like presentations, discussions, and peer reviews. This practice builds confidence and helps them articulate their thoughts more effectively. Also, this method encourages collaboration, as students must work together in groups for a set period. Working in teams not only strengthens their ability to cooperate but also stimuli creativity and promotes critical thinking, as students learn to solve problems together and develop innovative solutions. The finding shows that project-based learning doesn't just improve academic performance, but also develops key life skills such as teamwork, communication, creativity, and critical thinking skills that are crucial for achievement in both school and beyond. As connected with the findings from Mathias (2023), project-based learning is an effective teaching and learning method that helps students to acquire well and provides an opportunity to develop research, problem-solving, creativity, communication, collaboration and critical thinking skills. It is also used for student continuous assessment grades for form four students. Interviewee X2 commended that:

When students are free to explore, use technology, and present their findings in various forms, they develop all essential skills because they understand what they learn and

not just cramming. As a school supervisor, I encourage teachers to use that method, although some challenges teachers are facing (Interviewee X2 July 2025).

The study discovered that, Project-based learning is the way which is very applicable in public secondary schools, supervisors encourage teachers to use that method and it develop all essential skills like communication, collaboration, creativity and critical skills to students as it shown by Nadia et al. (2024) on findings that project-based learning puts students in real-world circumstances and values learning by doing, teamwork, critical thinking, and generating a more interactive classroom environment. Also, it supported by Sedubun and Nurhayati (2024) when they said, in project-based learning method, students' exertion on a project for extended time, and their learning is shown through a final product or presentation that reflects their knowledge and understanding.

#### **Communication Skill**

The study discovered that project-based learning develops learning skills like communication skills due to the form of projects done by students. Project-based learning methods are applied by making groups of students that every member of the group should participate to find material concerning their work and then come together to combine and get completed work for presentation. Students discuss and share their ideas through them, make communication among them and then at the time of presentation group members communicate with class members through their presentation and answer the questions asked by the class members. Students develop both verbal and written communication skills as they explain their ideas, defend their opinions, and listen to feedback from others. Teachers emphasized that this regular engagement improves confidence and fluency. In school A, one participant said:

Project-based learning method develops skills like communication due to presentations that students present in class, and by that time, other students have a chance to ask questions, so it makes communication among them (T from Sschool C, FGD July 2025).

The findings prove how project-based learning fosters academic success and individual and social growth. Communication, especially in spoken form, is often a barrier for many students in traditional classrooms, particularly those who are shy, anxious, or less fluent in the language of instruction. However, the supportive

structure of project-based learning through teamwork, peer exchange, and informal group discussions creates a safe space for risk-taking, where students can gradually build their confidence. The finding related to Gampala (2023), who said project-based learning emphasises practical, active learning that encourages students to solve real-life problems, work with classmates, think deeply, and build important modern-day skills. Other participants in school B respond that:

This method develops communication skills among students through their discussion because all of them needed to come up with their material to combine and get the completed work (T from school B, FGD July 2025).

The teacher's statement emphasizes that project-based learning develops students' communication skills through discussions. In these debates, students must collaborate and share their knowledge and ideas to assemble their work. This process requires each student to contribute, listen to others, and express their thoughts clearly so that the group can complete the project successfully. As a result, students improve their ability to communicate effectively and learn how to work together, argue ideas, and build on each other's strengths. This is consistent with the findings from (Nadia et al., 2024). project-based learning puts students in real-world situations and values learning by doing, teamwork, critical thinking, and creating a more interactive classroom environment. Also, aligns with the findings from Dullente and Namoco (2023), who showed that project-based learning helped students gain meaningful knowledge by doing real tasks, planning their activities, and working together in real-world settings. A respondent from school C quoted when they said that:

We had to present in front of the class in our English project. At first, I was shy but now I speak confidently in front of class and even when other students ask questions about the presentation I can answer it well with full confidence (S from school C, FGD July 2025).

The student's reflection shows that the project positively impacted on their personal and academic development. Initially shy, the student gained confidence through presenting in front of the class and responding to questions from peers. This growth aligns with Jean Piaget's Constructivist Theory, which highlights that learners actively construct knowledge through experience and collaboration with their situation. Through participating in classroom presentations and

engaging with questions, the student was not passively receiving information but actively building understanding and confidence. This also shows that the learning environment encouraged exploration, self-expression, and peer interaction, key elements in Piaget's view of how students move from one point of cognitive development to another. The finding suggests that active, student-centered projects like this one support meaningful learning and personal growth, consistent with the principles of constructivist theory.

### **Collaboration Skill**

Collaboration is a key 21st century learning skill; the data field shows that project-based learning develops it. Projects are usually done in groups of students that allow students to plan together, divide tasks among the group and everyone to work on it to come up with findings to present in the classroom. Through this process, they learn to solve conflicts, negotiate, and support one another. Students started that group work taught them to value other people's opinions and to build trust and cooperation. Teachers also noted that learners become more respectful and socially aware when they work in teams. For example, a respondent from school C said,

In our group, we divided tasks to find materials, so everyone comes up with their part of the work, and then we discuss together. We helped each other, which taught us how to work as a team. Project-based learning helps us to collaborate even with our teachers due to asking for instruction, so teachers cooperate well with us" (S from school C, FGD July 2025)

These findings confirm that project-based learning does more than promote academic achievement; it also fosters essential skills that students will carry beyond the classroom. Collaboration is one of the essential skills identified for 21st-century education, alongside critical thinking, communication, and creativity. Therefore, working in groups, students are gaining knowledge and learning how to function in diverse teams, handle responsibilities, and engage with others respectfully. Furthermore, the fact that students mentioned collaborating with teachers highlights that project-based learning supports students' teamwork and encourages stronger student-teacher relationships, built on guidance, mutual respect, and cooperation. The finding connected with Zheng (2022) states that teachers guide students while allowing them more freedom and control over their learning, helping them prepare for today's world. Also, project-based learning

is an active method for developing collaboration skills, helping students become better learners and team players, an increasingly vital ability in today's interconnected and team-driven world. The finding also supported by Moustafa and Al-Rashaida (2024) who said that through hands-on activities, students work on real challenges, collaborate in teams, and learn by asking questions and exploring solutions, which helps prepare them for school and future careers.

### **Creativity Skill**

The study also found that project-based learning helps students to become more creative and innovative. It gives them freedom to explore their ideas, use different materials from different sources and present their findings uniquely. Students are not limited to fixed answers; instead, they are stimulated to reflect outside the box and develop their products, solutions or performances. According to the views of teachers, project-based learning opens chances for students to express themselves through design and writing especially in subjects like Kiswahili and English. A respondent from school D responds that

Project-based learning helps us to be more creativity because there are different groups in our class and every group given their part of topic to work on it so in order our group to have better work than other groups force us to be more creative than others for example in Kiswahili subject in uchambuzi wa liwaya our madam have given our group the part of themes to work on it and to present our work in classroom. We wrote the script ourselves and performed it in a real situation, it was fun and creative (S from school D, FGD July 2025).

These insights show that project-based learning encourages collaboration, responsibility, and confidence. It allows learners to express themselves through writing, art, and presentations, strengthening their communication and leadership skills. Overall, project-based learning turns the classroom into a space of creativity, discovery, and shared learning where students are not just learning about something, but learning through doing. Project-based learning method focuses on student independence, working together, and evaluating students based on real tasks, helping them better understand and master content (Yazdanpanah, 2019). Also, a participant from the same school added:

Project-based learning allows learners to explore and develop new ways of solving

problems, especially in topics like environmental issues. We use this method to encourage learners to connect their studies to real-world situations. This helps them to solve problems and develop essential skills like creativity (T from school D, FGD July 2025).

The teacher's comment highlights that project-based learning lets students explore, think critically, and find creative solutions, especially in literature and environmental issues. This supports Jean Piaget's Constructivist Theory, which says that students learn best when actively involved in the learning practice, not just receiving information from the teacher. According to Piaget, learners build knowledge through hands-on experiences and problem-solving, which helps them move through different stages of cognitive development. By working on projects, students are stimulated to investigate, ask questions, and make sense of what they learn in their way. This kind of learning promotes deeper understanding because students are not memorizing answers but discovering and constructing meaning for themselves. The teacher's observation shows that project-based learning creates a rich environment where students can grow both intellectually and personally, which aligns strongly with Piaget's ideas about how real learning happens.

### **Critical Thinking Skills**

Project-based learning was found to enhance student's ability to think critically significantly. Unlike traditional teaching methods where students mostly memorize and recall information, Project-based learning requires learners to analyze problems, search deeply and make decisions to produce findings. While carrying out real-world projects, students are challenged to ask meaningful questions, connect their knowledge to practical issues and reflect on outcomes.

Students explained that they were encouraged to think deeply when given projects that required them to observe, find material, write the work, and present their findings in their classrooms. Teachers added that project-based learning allows students to go beyond textbook learning and apply reasoning in different contexts. The respondent from school A said:

When we do projects, we are not just copying notes. We have to think about how the topic relates to our real situation, if it is a problem, what causes it, and how the problem can be solved. For example, in geography we did the project on soil erosion, so we found material, but

also visited the area, discussed the causes, and gave our solution to it (S from school A, FGD July 2025).

The students' statement shows that project-based learning helps them go beyond memorizing or copying notes; they are encouraged to think critically and connect what they learn in class to real-life situations. Through working on projects like soil erosion in geography, students actively research, observe real environments, discuss causes of problems, and develop their solutions. This hands-on approach makes learning more meaningful and helps students understand how school subjects apply to everyday life. Project-based learning strengthens critical thinking, problem-solving, and practical understanding by including learners directly in real-world issues, making learning more engaging and relevant. This is supported by the findings from Markula and Aksela (2022) who described project-based learning as a teaching method that connects classroom learning with real-world needs, aiming to build important skills needed today. Another respondent from school B responds that:

Project-based learning method develops our thinking capacity because our teachers just introduce the topic and give us the instructions. We should think critically about what we are supposed to do, to come up with our work through our groups. We think critically and share our ideas then we agree on what to do. Also, for some information we get from books, we think critically about relating to our real situation in society (S from school B, FGD July 2025).

The evidence from the field clearly shows that project-based learning creates a learning environment where learners are intellectually active. They are not just listeners or note-takers, but thinkers, explorers, and contributors. This approach helps build a generation of learners better prepared to face contests, think independently, and approach problems confidently and creatively. The finding supported by Moustafa and Al-Rashaida (2024) who said that through hands-on activities, students work on real challenges, collaborate in teams, and learn by asking questions and exploring solutions, which helps prepare them for school and future careers. Also, school B's participant responded, "Project-based learning allows students to ask questions, find solutions and present their findings. This builds their critical thinking, which is missing in normal teaching methods like the lecture method" (T from

school B FGD July 2025)

The teacher's response highlights that project-based learning encourages students to ask questions, search for solutions, and present their ideas, skills often not fully developed through traditional methods like lectures. This approach helps students become active participants in their learning, which strongly supports Jean Piaget's Constructivist Theory. Piaget believed students construct knowledge through hands-on experiences and mental engagement with real-life problems. When students are involved in solving problems and presenting their findings, they are not just memorizing facts; they are organizing and building knowledge based on their understanding. This kind of learning strengthens critical thinking by challenging students to analyze information, make decisions, and reflect on their learning process. The teacher's comment shows that project-based learning provides a more dynamic and learner-centered environment, which helps learners grow intellectually by applying what they know in meaningful ways.

## CONCLUSION

The study concluded that Project-based learning is a participatory teaching method that engages learners directly to own their learning by focusing on hands-on, active learning, solving different problems, working with classmates, thinking deeply, analyzing and then showing their findings by presentations. Project-based learning develops 21st century learning skills like communication, collaboration, critical thinking and creativity skills effectively. In project-based learning, students present their work in front of others, this makes them communicate with other members of the class, allows questions and answers during the presentation, which develops both verbal and speaking skills and helps students develop communication skills. Through group work and teamwork, students shared their ideas that make them collaborate and develop collaboration skills to come up with their findings on the work. Additionally, in project-based learning, students are the owners of their study which makes them creative in their work, developing creativity skills. Furthermore, students think critically to find the information related to their topics, organize their ideas and come up with the results or findings that contribute to developing critical thinking skills.

## RECOMMENDATION

The study recommended that education supervisors

like District secondary education officers, ward education officers and head of schools encourage teachers to use participatory teaching methods like project-based learning to promote active learning to students and develop 21st century learning skills. There is a serious need for continuous professional development programs focused on participatory teaching methods like project-based learning and various assessment techniques. The study added that education leaders should provide regular professional development by conducting seminars and workshops so teachers can be updated every time and provide quality education to students. Also, teachers should treat all students equally and encourage them to participate well in their learning process by motivating them to study hard. Additionally, Government and education stakeholders should prioritize funding and policies supporting infrastructure improvements in public secondary schools, including reducing overcrowding and allocating enough teaching and learning resources.

## REFERENCES

- Almulla, M. A. (2020). The effectiveness of the project-based learning (PBL) approach as a way to engage students in learning. *Sage Open*, 10(3), 2158244020938702.
- Artama, K. K. J., Budasi, I. G., & Ratminingsih, N. M. (2023). Promoting the 21st-century skills using project-based learning. *Language Circle: Journal of Language and Literature*, 17(2), 325-332.
- Boakye-Yiadom, F., Donkor, E. K., & Mensah, R. O. (2025). Exploring the role of project-based learning in higher education to promote indigenous knowledge through sculpture students' engagement with Ghanaian Adinkra symbols. *Discover Global Society*, 3(1), 4.
- Boardman, A. G., Polman, J. L., Scornavacco, K., Potvin, A. S., Garcia, A., Dalton, B., ... & Alzen, J. L. (2024). Examining Enactments of Project-based Learning in Secondary English Language Arts. *AERA Open*, 10, 23328584241269829.
- Bunju, K. (2020). Teachers' use of project-based approach to enhance learning: A case of selected secondary school schools in Chamwino district Dodoma, Tanzania. <http://hdl.handle.net/20.500.12661/2700>
- Dullente, J. & Namoco, S. (2023). Utilising Project-Based Learning to Improve the Learning and Innovation Skills of Grade 8 TLE-Exploratory Students in a Philippine Public High School. *International Multidisciplinary Research Conference*.
- Gabuardi, V. M. F. (2021). Project-Based Learning: boosting 21<sup>st</sup> century skills. *Revista estudios*, (43), 340-419.
- Gampala, M. (2023). Innovative Approaches to Teaching and Learning. *Shanlax International Journal of English* 12(S1)138-145
- García, V. A., Villaverde, V. A., Benito, V. D., & Muñoz, R. C. (2020). Aprendizaje basado en proyectos y estrategias de evaluación formativas: Percepción de los estudiantes universitarios. *Revista iberoamericana de evaluación educativa*, 13(1), 93-110.
- Grossman, P., Dean C. G. P., Kavanagh, S. S., & Herrman, Z. (2019). Preparing teachers for project-based teaching. *Educational Research*, 100(7) 43-48
- Guerrero, J. A. A., Moreira, J. A. M., Zambrano, M. J. Z., Rivas, F. E. C., & Pilligua, M. L. B. (2021). Project-based learning and its contribution to virtual education. *International Research Journal of Management, IT and Social Sciences*, 9(1), 10-18.
- Iradukunda, A., & Andala, H. (2024). Effect of Project-Based Learning Method on Students' Academic Performance in Mathematics Subject in Rwanda. *African Journal of Education and Practice*, 10(5).
- Kimani, B. (2024). Effectiveness of Project-Based Learning in Enhancing Critical Thinking Skills among High School Students. *American Journal of Education and Practice*, 8(2), 54-65.
- Ma, W. W. K. (2022). Effective Learning Through Project-Learning: Collaboration, Communication, Design, and Technology. *Digital Communication and Learning* 317-341
- Markula, A., & Aksela, M. (2022). The key characteristics of project-based learning: How teachers implement projects in K-12 science education. *Disciplinary and Interdisciplinary Science Education Research*, 4(1). <https://doi.org/10.1186/s43031-02100042-x>
- Mathias, S. (2023). The Rise of Innovative Learning Models. Education Development Centre in Tanzania [www.digest.tz](http://www.digest.tz)
- Mkimbili, S., Amani, J., Hassan, I., & Mrema, D. (2024). Exploring the role of project work in secondary schools beyond continuous assessment. *Papers*

*in Education and Development, 42.*

- Moustafa, A., & Al-Rashaida, M. (2024). Fostering students' critical thinking through the implementation of project-based learning. In *Cutting-Edge Innovations in Teaching, Leadership, Technology, and Assessment* (pp. 42-53). IGI Global.
- Mutanga, B. M., (2024). Students' Perspectives and Experiences in Project-Based Learning: A Qualitative Study. *Trends High. Educ* 3,903-911
- Nadia, R., Xiao, H., Amir, M., Mohammed, A. M., & AlGerafi, S.J. (2024). Project-based Learning as a Catalyst for 21st-Century Skills and Student Engagement in the Math Classroom. *Journal of Research in Science Education* 10(4),23
- Nxasana, E. S., Chen, J., Du, X., & Hasan, A.M. (2023). Teachers' Pedagogical Beliefs in Project-Based Learning Schools in South Africa. *Journals of education sciences* 13 (2)
- Omwenga, E. N. & Mochama, E. O. (2022). The Role of learning resource project in teacher education in Kenya. *Journal of Research Innovation and Implications in Education*, 6(2), 108 – 118.
- Pham, D. T. (2018). Project-Based Learning: From Theory to EFL Classroom Practice. *Proceedings of the 6th International Open TESOL Conference*, 327-339.
- Sedubun, S., & Nurhayati, N. (2024). Exploring the Efficacy of Project-Based Learning in English Language Teaching: A Literature Review. *EDUKASIA: Journal Pendidikan dan Pembelajaran*, 5(1), 1089-1092.
- Tanzania Institute of Education. (2019). *Curriculum for Primary Education standard I-VII*. Dar -es-salaam: Ministry of Education; Science and Technology.
- Tukakira, A., Aheisibwe, I. & Asiimire, D. (2024). Project-Based Learning and Learners' Academic Achievement in Physics at Ordinary Level in Government Aided Secondary Schools in Ibanda Municipality. *East African Journal of Education Studies*, 7(2), 394-401.
- United Republic of Tanzania (URT). (2023). *Education and Training Policy of 2014, 2023 Edition*.
- United Republic of Tanzania (URT). (2025). *Basic Education Statistics*. <https://www.moe.go.tz>
- Wibowo, S., Wangid, M. N., & Firdaus, F. M. (2025). The Relevance of Vygotsky's Constructivist Learning Theory to the Differentiated Learning Primary Schools. *Journal of education and learning (EduLearn)*, 19(1), 431-440.
- Xiong, Y. (2021). The development of the project-based learning teaching method. In *2021, 5th International Seminar on Education, Management and Social Sciences (ISEMSS 2021)* (pp. 886-890). Atlantis Press.
- Yazdanpanah, R. (2019). Exploring and Expressing Culture through Project-Based Learning. *English Teaching Forum*, 57(3), 2-13.
- Yin, E. L., & Huat, K. T. (2021). Project-Based Learning in Teaching Mandarin as a Foreign Language: Theory to Practice. *International Journal of Academic Research in Business and Social Sciences*, 11(4), 542-551.
- Zheng, X. (2022). English as an International Language Project-Based Learning: A Focus on Young Chinese Learners' Beliefs. *English Language Teaching*, 15(8)