



Humanism In Project-Based Learning at Vocational High Schools: Building Human Values and Social Skills

Muhammad Akbar¹, Nurhasan Syah^{2*}, Nizwardi Jalinus³, Ernawati⁴, Fadhilah⁵

¹Doktor of Technology and Vocational Education Degree Programme, Universitas Negeri Padang, Padang, Indonesia.

²Department of Civil Engineering, Universitas Negeri Padang, Padang, Indonesia.

³Department of Mechanical Engineering, Universitas Negeri Padang, Padang, Indonesia.

⁴Department of Mining Engineering, Universitas Negeri Padang, Padang, Indonesia.

⁵Department of Fashion Design, Universitas Negeri Padang, Padang, Indonesia.

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ABSTRACT

This research discusses the values of Humanism in the PjBL learning process in SMK by building students' human values and social skills. This research aims to improve classroom learning by building students' human values and social skills. This research involves a literature review from various sources such as Scopus, Crossref, Sinta, Garuda, and ISSN-indexed articles. The method used to analyze the problem is the Prism method. The review process is carried out through several systematic stages, namely: Searching for keywords related to the problem using Publish Or Perish, obtaining 289 articles indexed by Scopus and Sinta, filtering related articles using Confidence, obtaining 24 articles that match the problem, then analyzing using the Vosviewer application to visualize the issues raised, determining research questions in each article. Humanism in PjBL is extremely successfully utilized in a number of learning processes that can greatly increase student learning outcomes, particularly in the area of students' thinking skills, according to the study findings based on a number of research questions. In addition, researchers found that in previously selected studies, Humanism in PjBL learning provides a more active learning atmosphere for students than ordinary (conventional) learning.

1. Introduction

Books, the internet, information technology platforms, and other informative sources are just a few of the various ways that people learn. In the era of Society 5.0 and the twenty-first century, technology and information are crucial sources of knowledge needed to properly prepare people for the demands of the workplace (Apriana, W. N., Ridlo, S., & Latiana, 2019). Achieving success in the professional realm is a direct result of the information acquired via schooling. Education enables pupils to gain diverse experiences while honing their skills and talents (Arkadiy, 2021).

Education is essential since it cultivates exceptional human capital, fosters noble character, and

* Corresponding author.

E-mail address: nurhasan@ft.unp.ac.id

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develops intellectual individuals. Project-Based Learning (PjBL) can help students develop advanced skills that improve their competitiveness in the twenty-first century and prepare them to successfully address the challenges of society 5.0 (Arnellis, A., Fauzan, A., Arnawa, I. M., & Yerizon, 2020). Project-Based Learning (PjBL) is a student-centered educational strategy that demands that students generate a concrete product at the end of the learning process. Using project-based activities and producing concrete results, the Project Based Learning (PjBL) paradigm is an active learning approach that combines technology with real-world scenarios. The PjBL paradigm entails students autonomously enhancing their cognitive abilities and critically analyzing the problem-solving process (Kholida, S. I., & Suprianto, 2020). Educators serve as facilitators and assessors of the goods generated by pupils. However, kids can engage in physical movement while learning by collaborating in groups to develop a product via a project.

According to (Arnellis, A., Fauzan, A., Arnawa, I. M., & Yerizon, 2020), the Project-Based Learning (PjBL) learning strategy seeks to develop students' active problem-solving abilities, encourage them to express and debate these difficulties in class, and promote peer cooperation. This work was written by (Hidayah, N., Arum, A. P., & Apriyansa, 2021). This methodology involves the instructor presenting a topic or real-world scenario and thoroughly examining it. Students acquire knowledge and develop a collaborative initiative to address the issue. This instructional approach will foster students' acquisition of information and development of skills. The instructor assumes the role of a mediator and encourager. Students can work alone or collaboratively in groups while the instructor supervises their progress. The Project Learning model offers several benefits, including 1) enhancing students' motivation to learn, 2) improving students' proficiency in resource management, 3) fostering active engagement in learning, 4) promoting collaboration among students, 5) indirectly enhancing students' communication skills; 6) imparting project organization skills to students; and 7) facilitating adequate learning opportunities (Fahrezi, I., & Taufiq, 2020).

It is being discussed how Project-based Learning (PjBL) is implemented in SMK (Sekolah et al.). In vocational education, especially at Vocational High Schools (SMK), project-based learning (PjBL) is emerging as a key pedagogical strategy. This method enhances students' technical skill while fostering critical thinking, problem-solving, and teamwork—qualities that are vital in today's workplace (Barron et al., 2008). Project-Based Learning (PjBL) and Technical Skill Development Students at SMK may apply their academic knowledge to real-world situations through project-based learning. Project-based learning (PjBL) is a way of teaching that revolves on a particular issue and enables students to get a thorough comprehension of both the problem's principles and the scientific techniques employed to address it (Cahyaningsih, R. N., Siswanto, J., & Sukamto, 2020); (Suryandari, K. C., Sajidan, S., Rahardjo, S. B., Prasetyo, Z. K., & Fatimah, 2018); (Wijanarko, A. G., Supardi, K. I., & Marwoto, 2017). The goal is to develop rational, direct, and complete problem-solving skills and cognitive abilities. As a result, students understand the concepts relevant to the present state of affairs and acquire learning experiences linked to competence in using scientific methods to address issues and develop critical thinking skills.

(Jackson, S. L., Krajcik, J., & Soloway, 1998) highlight that issue-based Learning (PjBL) enables students to develop skills in issue analysis, hypothesis formulation, and solution testing from many perspectives. Students get vital critical thinking skills from this, which are advantageous in the professional environment. Cooperation and Development via Social Interaction Collaboration is essential to Project-based Learning (PjBL). According to (Johnson, D. W., & Johnson, 1999), PjBL encourages group work, which helps students strengthen their collaboration and communication skills. Within a vocational school setting, where several tasks need multidisciplinary cooperation, the capacity to function well in teams is vital. Students acquire the ability to demonstrate respect

for the viewpoints of others, engage in negotiations, and collaborate towards a shared objective. Employability PjBL also assists students in preparing for the dynamic and evolving realm of employment. (Larmer, J., & Mergendoller, n.d.). assert that by engaging in authentic projects, students might encounter difficulties like those they would encounter in their professional lives. They acquire the ability to adjust to new circumstances, effectively allocate time and resources, and perform well in high-stress situations.

Project-based learning (PjBL) aims to include human values, which are an essential component of character development for students. Humanism in this sense refers to the development of a well-rounded character in which students acquire technical proficiency, moral values, the capacity to comprehend and empathize with others, and a sense of social responsibility. As a result, this study offers a succinct summary of how Project-based Learning (PjBL) is incorporated into Vocational High School and Vocational Education curricula. The following research concerns were looked at in order to meet the study's goals.

1. RQ1: How is project-based learning (PjBL) applied in vocational schools?
2. RQ2: How does information technology integration affect project-based learning in vocational schools?
3. RQ3: To what degree does PjBL incorporate humanism?
4. RQ4: How do human values fit into Project-based Learning (PjBL)?
5. RQ5: How important are social skills in project-based learning (PjBL)?

2. Methodology

This paper used library research as its primary methodology. Literature study investigates facts and information derived from diverse sources such as books and journals. This study may be categorized as a literature review that involves a thorough search. This study was carried out by the methodology proposed by (Dybå, T., & Dingsøy, 2008), The following steps make up the process: (1) Examining the protocol; (2) Determining the inclusion and exclusion criteria; (3) Searching and implementing the exclusion criteria; (4) Finding pertinent studies; (5) Assessing the quality of the studies; (6) Data extraction from the studies; and (7) Synthesizing the results. The synthesis is presented narratively, and theme analysis is carried out; quality evaluation is not included in the appraisal (Grant, M. J., & Booth, 2009).

Figure 1 displays the PRISMA flow chart outlining the process, which encompasses the initial literature search (289 articles retrieved from Scopus, Google Scholar, and Crossref databases), screening (289 articles), critical appraisal, qualitative analysis, and quantitative analysis, ultimately resulting in the inclusion of 24 articles.

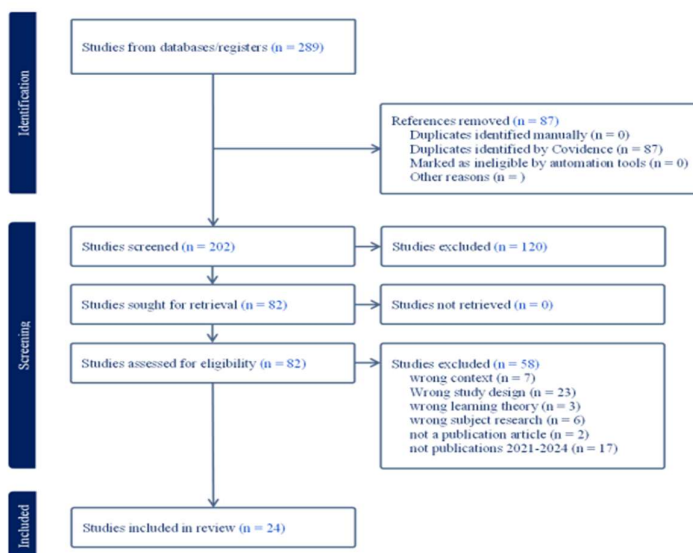


Fig.1. Prism method for article search

2.1 Scientific Article Selection Process

The literature search for research on energy efficiency was performed using the Scopus database. This database was selected based on the following justifications: The Scopus and Google Scholar databases provide extensive coverage of several publications and are vital sources for indexing scientific articles and papers globally (Hussain, M., Jabeen, N., Raza, F., Shabbir, S., Baig, A. A., Amanullah, A., & Aziz, 2020). (Comma 2) Searching these databases encompasses all areas of study by restricting the search to article titles, abstracts, keywords, and predetermined keywords (Sakr, A., & Abdullah, 2024). 3) The Scopus database has its own distinct and autonomous character. The database comprises a comprehensive collection of peer-reviewed literature summaries and citations, offering trustworthy and thorough coverage. Each reference inside the database has complete and accurate data (Liu, Y., & Avello, 2021).

Categorization is crucial for identifying research subjects, formulating action plans, and establishing procedures. The procedure delineates several facets, including the search keywords and databases used, the exclusion criteria implemented, the kinds of articles analyzed, and the stated study time (Saldanha, I. J., Scherer, R. W., Rodriguez-Barraquer, I., Jampel, H. D., & Dickersin, 2016). The study's findings are shown in Table 1, which contains the database. The study materials were chosen based on their pertinence to Project-Based Learning.

Table 1. Research Result Database

Kata kunci	Basis Data	Hasil
"Humanism" "Project Based Learning" "Vocational "High School" "Human Values" "Social Skills"	Scholar, Scopus	289

Once the database was chosen, relevant keywords related to the issue were found to aid in selecting sample articles. The study goals were associated with the following keywords: "Project-Based Learning," "Humanism," "Vocational," "Humanistic values," and "Social skills." The selection of these keywords started with an initial examination of the current literature on Project-Based Learning. Next, relevant and comprehensive keywords were chosen to address this study's research aims and issues

After the keyword selection, the keyword group combinations were segregated using the Boolean operator 'AND'. Similarly, the "OR" operator was used to distinguish different combinations of words within the same group (Rao, A. K., Singh, K. P., & Tripathy, 2024). Figure 2 comprehensively explains how different essential phrases may be utilized with Boolean parameters. Subsequently, we used a filter to narrow the results by considering the title and keywords. Ultimately, we conducted a thorough examination of the titles and keywords of the obtained research to exclude any research articles that were not relevant (Sakr, A., & Abdullah, 2024)

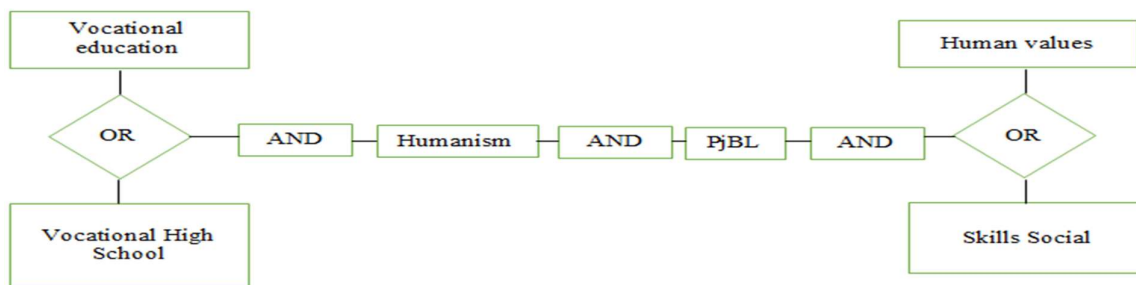


Fig.2. Keywords used for article searches

As a consequence of this approach, 82 studies were identified as qualifying. The researchers assessed these generated publications by personally examining each publication to ascertain its appropriateness for the study. The inclusion and exclusion criteria listed in Table 2 were followed during the screening process. Figure 1 illustrates the identification of 24 research papers relevant to this inquiry after the given qualifying criteria were applied.

Table 2. Criteria for Inclusion and Exclusion

Criteria for Inclusion	Exclusion Standards
Publication must include Project Based Learning	English article
The publication must relate to human values and students' learning skills.	Publications in 2021-2024
The publication must have a relationship based on Humanism	publications aimed at vocational high schools that use PjBL media.

2.2 Analysis Process

Using Microsoft Office Excel spreadsheets, all of the chosen studies were coded and analyzed to start the analytic process. An Excel file with the following details was created from the extracted data (raw data): publication year, title, reference, data collecting technique, study methodology, domain name, and advantages of PjBL Learning. A more targeted survey was then conducted, with data collected from a manually selected sample via the Covidence website and analyzed using VOSViewer software. This software was chosen for its effectiveness and usability as a bibliographic network analysis tool. VOSviewer is specifically designed to create and display bibliographic information networks in scientific environments and has demonstrated high competence (Qin, M., Zhang, L., & Wu, 2022). Thus, by identifying and evaluating the development of the literature on utilizing PjBL Learning to enhance students' learning outcomes and thinking abilities based on constructivist theory, the software used in this study will aid in achieving that aim. After that, the researcher evaluates the current theoretical and methodological reasons that support this research

issue and provides a content analysis of the pertinent literature. Put otherwise, what is the PjBL learning context at vocational schools? How does PjBL in Vocational Schools incorporate information technology? How is PjBL's Integration of Humanism? How do social skills and human values fit into PjBL?

3. Results

According to the authors' research, using the search terms "Project Based Learning (PjBL)", "Humanism", "Vocational High School", "Vocational Education", "Humanistic Values", and "Social Skills" in the Publish Or Perish software, 289 publications were retrieved. I conducted a thorough search of databases like Google Scholar, Scopus, and Crossref and discovered 82 articles that, based on their abstract and title, satisfy our particular requirements. 24 papers were selected for this systematic review based on their relevance and utility to the topic under investigation after irrelevant publications were eliminated.

Table 3. Synthesis Summary of Articles received from 2021-2024

No	Author	Title	Accreditation	Year
1.	Lu Zhang ¹ and Yan Ma ² *	<i>"A study of the impact of project-based learning on student learning effects: a meta-analysis study"</i>	Scopus	2023
2.	Quratulain	<i>"A Systematic Review on Challenges and Research Gap in ProjectBased Learning Strategy"</i>	Sinta	2021
3.	Ety Kustinah ¹ , Kambali ² , Marwah Lama'atushabakh ³	<i>"Humanistic Counseling and Student Learning Motivation"</i>	Sinta	2022
4.	Putu Sudira ^{1*}	<i>"Online Project-Based Learning (O-PjBL): Effectiveness in Teachers Training and Coaching in Vocational Education"</i>	Sinta	2021
5.	Younghee Kima	<i>"Effect of Proje-t-Based Learning on the Creative Personality, Teamwork Competence, and Self-Regulated Efficacy of Undergraduate Nursing Student"</i>	Scopus	2021
6.	Mohamad Syarif Sumantri	<i>Maker-Centered Project-Based Learning: The Effort to Improve Skills of Graphic Design and Student's Learning Liveliness</i>	Sinta	2022
7.	Ike Sylvia ^{1,*} , Z Mawardi Effendi ¹ Firman ¹	<i>"The Effectiveness of Project-Based Learning Models to Stimulate Students' Higher Thinking Ability in High School Sociology Learning"</i>	Proceding	2021
8.	Dwi Agus Sudjimat	<i>"Implementation of Project-Based Learning Model and Workforce Character Development for the 21st Century in Vocational High School"</i>	Scopus	2020
9.	Corinne Martinez	<i>"Developing 21st-century teaching skills: A case study of teaching and learning through project-based curriculum."</i>	Scopus	2021
10.	Özel Ege Lisesi, İzmir,	<i>"Problem and project-based learning as an educational philosophy: A novel conceptual model for higher education"</i>	Scopus	2021
11.	Khairul Anuar Abdul Rahman ¹	<i>"Conceptual Model of Video Learning based on ProjectOriented Problem-Based Learning and CompetencyBased Education for Technical and Vocational Education"</i>	Sinta	2022

No	Author	Title	Accreditation	Year
12.	Milan Maros	<i>"Project-based learning and its effectiveness: Evidence from Slovakia"</i>	Scopus	2021
13.	Saehu Abbas ^{1*} , Agus Dian Alirahman ² , Hajjin Mabur ³	<i>"Humanization of STEM (Science et al.) Based Learning Towards Transformation 21st Century Islamic Education."</i>	Scopus	2024
14.	Agustinus Sugeng Priyanto ¹ , Idayatul Mafuroh ² , Juhadi Juhadi ³ , Lukki Lukitawati	<i>"Analysis of the Project-Based Learning Model in Social Studies Learning Referring to the Merdeka Curriculum"</i>	Sinta	2023
15.	Vilma Sukacke ^{1*}	<i>Towards Active Evidence-Based Learning in Engineering Education: A Systematic Literature Review of PBL, PjBL, and CBL</i>	Scopus	2022
16.	Ca-Nguyen Duc	<i>"A Literature Review of the Project-based Teaching Method in the Education of Vietnam"</i>	Scopus	2022
17.	*Nurul Halimah, Irdamurni, Desyandri	<i>"Humanistic Philosophy of Learning Differs From the Curriculum in ES"</i>	Sinta	2023
18.	*B S Widodo ¹ ,	<i>"The Effectiveness of Integrating Learning Management to Online Project-Based Learning on Students' Metacognitive Abilities"</i>	Sinta	2023
19.	Wanrong Meng ¹ , Piyapong Sumettikoon ²	<i>"The Use of Artificial Intelligence to Enhance Teaching Effectiveness in Vocational Education"</i>	Scopus	2022
20.	Muhammad Nur Hudha	<i>"Project-based learning in improving scientific literacy: Systematic literature review."</i>	Sinta	2023
21.	Joko Sudarmono ^{*1} , Ujang Rohman ² , Prayogo	<i>"The Development of Project-Based Science Teaching Materials in Building Collaborative Thinking and Acting Skills"</i>	Sinta	2023
22.	Dorit Alt, Lior Naamati-Schneider & Daniel J.N. Weishut	<i>"Competency-based learning and formative assessment feedback as precursors of college students' soft skills acquisition"</i>	Scopus	2023
23.	Nurit Novis-Deutsch, Etan Cohen,	<i>"Interdisciplinary learning in the humanities: Knowledge building and identity work."</i>	Sinta	2024
24.	Muhamad Saleh ^{1*} , Kokom Komalasari ² , Sapriya Sapriya ³ , Iim Siti Masyitoh ⁴	<i>"Building Digital Citizenship Literacy Skills Through 21st Century Skill-Based Civics Learning with Information Media and Technology Skills"</i>	Sinta	2021

The co-occurrence of keywords represents a strong relationship between keywords in a particular cluster. Figure 3 shows the occurrence of interrelated keywords. The minimum number of keyword occurrences in the filter is 5. After filtering, 30 keywords finally reached the threshold. The relevant keywords appear more prominently in red and green colours.

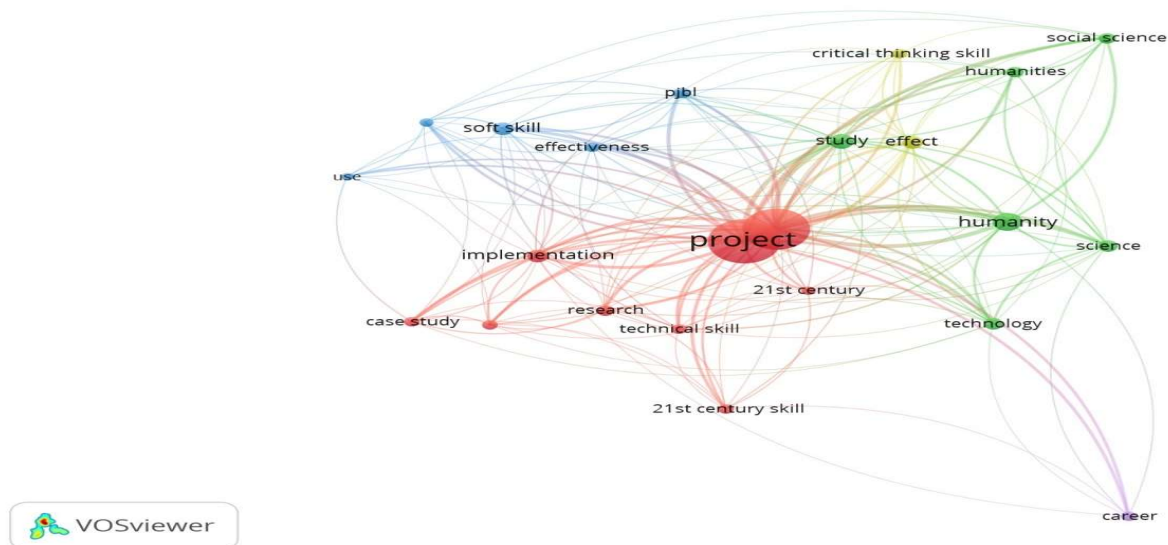


Fig.3. Bibliography based on vosviewer

Figure 3 displays the connections between different journals that publish environmental articles, organized into five groups. The term "project" is the primary element in the first cluster, highlighted in red. It exhibits the most vital connection with six other sources, namely "21st century," "implementation," "research," "technical skill," "21st century," and "case study." Similarly, the second cluster is denoted by the colour green and is headed by the phrase "study" along with five other keywords, including "Humanities." The disciplines of humanities, technology, social science, and science. Furthermore, Figure 3 displays additional bibliographic connections, with three distinct clusters lead by "PjBL," "Effect," and "Career," each represented by blue, yellow, and purple clusters correspondingly. Therefore, merging journal bibliographies establishes a connection between the most significant publications in PjBL Learning research using human values and social skills.

1. RQ1: How is project-based learning (PjBL) applied in vocational schools?

With this PjBL method, learning is structured around projects and students are placed in real-world scenarios to investigate and apply what they have learned to challenging issues that are pertinent to their professional practice (Hârtescu, 2014). PjBL gives students the chance to learn via practical experiences that are pertinent to their line of work within the framework of instruction at vocational institutions. In addition to learning about professional responsibility, cooperation, and work ethics, students gain technical abilities via their projects (Moursund, 1999). Because they can immediately connect the subject to real-world applications, students find learning to be more relevant. With PjBL, students may also improve their creative and problem-solving skills.

In completing their projects, students often face problems that require critical and innovative thinking (Barrows, 1986). Students learn to overcome challenges in the fast-paced industry and are inspired to solve problems creatively. Student learning about collaboration and efficient communication is another benefit of PjBL projects. In working with their team peers, students learn to communicate well, listen to others' opinions, and achieve common goals (Johnson, D. W., &

Johnson, 1999). These abilities are crucial in the workplace, where success depends on collaboration. Students are also encouraged to acquire time management and responsibility skills within the framework of PjBL learning. To finish the project on schedule and accept accountability for their job, they must effectively manage their time (Britton, B. K., & Tesser, 1991). This helps students in the classroom and at work by teaching them the importance of time management and accountability. As a result, PjBL promotes attitudes, beliefs, and abilities that are crucial in their social and personal lives while also giving students the information and technical skills they need to excel in their vocations (Lickona, 1999). As a result, PjBL is an extremely effective teaching method for fostering the personal development of SMK students.

2. RQ2: How does information technology integration affect project-based learning in vocational schools?

It has been demonstrated that integrating information technology into PjBL in vocational schools enhances learning efficacy in a number of ways. Using technologies such as e-learning, simulation, and collaborative software allows students to work together more effectively, access information quickly, and develop digital skills essential for the future. Research by (Warschauer, M., & Matuchniak, 2010) shows that technology in PjBL can enrich students' learning experiences and develop critical digital skills. One of the key benefits of integrating information technology in PjBL is its ability to facilitate distance learning and collaboration between students from different locations. With team members who could be located in other places, this enables students to work in more varied teams and offers a broader viewpoint. In a study by (Boss, S., & Krauss, 2007), technology has improved students' communication and collaboration skills in a PjBL context.

Additionally, the utilization of more varied and current learning resources is made possible by the integration of information technology. Students can obtain the most recent knowledge to help their work by using the internet and different online learning platforms. Additionally, technological utilization might boost students' interest in their studies. Students' desire to study may be increased by using interactive and captivating technologies to make learning more enjoyable and difficult. Technology use in PjBL can boost student engagement and enhance learning results, according to a research by (Kebritchi, M., Lipschuetz, A., & Santiago, 2017).

3. RQ3: To what degree does PjBL incorporate humanism?

Humanism in PjBL in SMK can be seen in how students are taught to understand and appreciate human values through the projects they undertake. These projects often involve teamwork, effective communication, and problem-solving, focusing on social issues. A humanistic approach to education, as described by (Maddux, J. E., & Rogers, 1983), helps students develop their full potential and increase self-efficacy. In the context of PjBL, Humanism is also reflected in the attention paid to student character development. Students learn technical skills and moral values such as honesty, integrity, and empathy through their projects. In a study by (Lickona, 1996), PjBL was identified as an effective method to help students develop strong character and become better individuals.

In addition, the Integration of Humanism in PjBL can also be seen in how students are taught to

understand others' perspectives and appreciate diversity. In projects involving social or multicultural issues, students can learn about different values and how to empathize with people from various backgrounds. According to (Armstrong, T., Rivas, M. P., Gardner, H., & Brizuela, 1999), Students' "interpersonal intelligence," which includes good communication and interaction, may be developed through project-based learning. The Integration of humanist values in PjBL can also help students develop a deeper understanding of their contribution to society and the world of work. In projects that involve solving social or environmental problems, students can learn about social responsibility and how they can be agents of positive change. Research by (Dewey, 1938) emphasized the importance of education being relevant to real life and providing students with opportunities to learn through hands-on experience. Thus, the Integration of Humanism in PjBL in SMK is about developing technical skills, shaping students' characters, and providing meaningful learning experiences. Through this approach, students are expected to become individuals who are more empathetic, responsible, and ready to face challenges in the world of work and society.

4. RQ4: How do human values fit into Project-based Learning (PjBL)?

Students may learn human characteristics like empathy, teamwork, and social responsibility through PjBL. Students frequently encounter issues in their projects that call for an awareness of and respect for the viewpoints of others. As a result, they develop empathy and the ability to collaborate with others. According to research by Barron and Darling (Barron, B., & Darling-Hammond, 2008), PjBL can assist students in acquiring the social skills necessary for success in both their personal and professional life.

- a) Empathy in PjBL, Through PjBL, students learn to understand the feelings and perspectives of others. They learn to look at problems from different points of view and seek solutions that benefit all parties. As a result, they develop empathy and compassion for others. According to research by (Krajcik, J., Blumenfeld, P., Marx, R., & Soloway, 2000), empathy abilities in pupils can be enhanced with PjBL.
- b) Cooperation in PjBL, PjBL also encourages cooperation among students. In the projects they work on, students often have to work together in teams to achieve a common goal. They learn to listen to others' opinions, value their contributions, and work together to achieve better results. Research by (Johnson, D. W., & Johnson, 1999) shows that PjBL can help improve students' cooperation skills.
- c) Social Responsibility in PjBL, PjBL also helps students to develop social responsibility. In the projects they work on, students often have to consider the impact of their actions on society and the environment. They learn to take responsibility for their actions and seek solutions that benefit all parties. Research by (Larmer, J., & Mergendoller, n.d.) shows that PjBL can help students develop crucial social responsibility skills.

5. RQ5: How important are social skills in project-based learning (PjBL)?

Project-based learning (PjBL) is essential for improving students' project management skills at vocational high schools (SMK). Planning, organizing, carrying out, and assessing projects are just a

few of the essential skills required in the workplace. Through PjBL, students learn to plan the project clearly, organize the available resources, execute the project according to the set schedule, and evaluate the project results thoroughly. According to (Abyad, 2018), PjBL can help students develop essential project management skills. PMI highlights how crucial these abilities are to enhancing students' preparedness for the workforce. Students may gain a better understanding of how to manage projects, from planning to execution and assessment, by practicing project management techniques within the framework of PjBL.

Additionally, PjBL gives students the chance to gain knowledge through real-world experience. Students might encounter actual difficulties that frequently arise in the workplace through the projects they work on. They gain the ability to solve issues, adjust to change, and collaborate with others to accomplish shared objectives. This experience helps them develop project management skills beneficial in an educational context and their future professional careers. This study limits the research to discussing Humanism in Project Learning (PjBL) in Vocational High School education, user benefits, and its relationship with the humanism theory.

4. Conclusions

A review of the literature on the use of technology in vocational education was the result of this study. After reading a number of publications, it is clear that humanity has been successfully applied in Project Based Learning (PjBL) learning to enhance students' social skills and human values in vocational education. The presence of humans in the classroom will foster a self-assured mindset in the students, encouraging them to keep trying new things in accordance with the teacher's lessons. Students also become more accountable for their work. Additionally, students can share the project's outcomes with their peers and instructor.

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