

Stakeholder Perceptions of Collaborative Project-Based USP for Vocational Summative Assessment

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Abstract

This study describes the stakeholder perceptions of collaborative project-based Educational Unit Exam (USP: *Ujian Satuan Pendidikan*) implementation as a summative assessment innovation in a vocational high school. The novelty of this study lies in conceptualizing the Educational Unit Examination (USP) as a school-level summative assessment architecture rather than merely a final written examination. The proposed model integrates authentic assessment, interdisciplinary project collaboration, competency-based assessment, workplace relevance, and individual accountability within a single assessment framework. A descriptive quantitative survey was conducted at Vocational High School 1 Anyer involving 318 purposively selected respondents: 286 twelfth-grade students, 25 subject teachers, five school management members, and two education-office stakeholders. Data were collected through Likert-scale questionnaires consisting of 20 statement for each respondent group and analyzed using descriptive statistics based on the percentage of positive responses for each stakeholder group. The results show positive stakeholder perceptions: school management reported 90%, education-office stakeholders 89%, students 82%, and teachers 73%. These findings suggest that stakeholders perceived the collaborative project-based USP as supporting interdisciplinary collaboration, authentic competency demonstration, and stronger alignment between school assessment and workplace-oriented learning. However, the study is limited to perception data from one school, uses aggregate percentages, and does not include objective performance indicators, item-level reliability evidence, or construct validation. Therefore, the findings should be interpreted as stakeholders perceptions rather than evidence of actual effectiveness. Practically, sustainable implementation requires structured assessment rubrics, evidence of individual contribution, portfolio documentation, individual oral questioning, teacher moderation, and workload management.

Keywords: Perceived Effectiveness, USP, Collaborative Project, Summative Assessment, Vocational School.

1. Introduction

Vocational education is expected to produce graduates who possess not only theoretical knowledge but also practical competence, adaptability, and work readiness required by rapidly changing industries. Consequently, vocational assessment should evaluate students' ability to integrate knowledge, skills, and professional attitudes through authentic performance rather than merely recalling disciplinary content. Nevertheless, summative assessment in many vocational schools continues to rely predominantly on written examinations that emphasize cognitive achievement while providing limited evidence of workplace competence, collaboration, communication, and problem-solving skills [1].

The Project-Based Learning (PjBL) approach has been widely used to reduce this gap between classroom learning and workplace practice. Through projects, students are required to plan, produce, communicate, and evaluate outputs that resemble authentic occupational problems rather than merely answer decontextualized test items. Previous studies indicate that project-based and integrated project models can support communication, critical thinking, creativity, work readiness, and vocational

competence [2], [3]. Although numerous studies have demonstrated the instructional benefits of Project-Based Learning, considerably fewer studies have examined its use as a school-level summative assessment mechanism. Assessment is a systematic process of collecting meaningful information about students' learning progress and achievement to support educational decision-making and improve the quality of learning [4]. Assessment should employ various techniques according to the competencies being assessed, including written tests, oral examinations, performance assessments, projects, and practical tasks [5].

In vocational education, projects become more meaningful when they integrate several subjects into a single performance task. The workplace rarely separates technical calculation, communication, digital literacy, teamwork, entrepreneurship, and accountability into isolated activities. Therefore, cross-subject collaborative projects can provide a more comprehensive assessment context than a single-subject written exam. Nevertheless, the use of projects for learning is not identical to the use of projects for summative assessment. When projects become the basis of the Educational Unit Exam (USP: *Ujian Satuan Pendidikan*), the school must ensure clarity of learning-outcome mapping, validity of indicators, fairness of rubrics, comparability of scores, documentation of individual contribution, and moderation among teachers. The literature on project-based learning, collaborative projects, curriculum innovation, C-STEAM, blended learning, and collaborative learning communities also indicates that projects can serve as a space for integrating knowledge, skills, creativity, and teamwork [6], [7].

The implementation of the Educational Unit Examination (USP) at Vocational High School (VHS) 1 Anyer changed following the introduction of the Merdeka Curriculum. Previously, USP was conducted as a conventional written examination using questions prepared through the Subject Teacher Forum (*Musyawarah Guru Mata Pelajaran*; MGMP). After schools were given greater autonomy in determining assessment formats, VHS 1 Anyer adopted a collaborative project-based USP involving multiple subjects. Instead of administering another written examination, students completed an interdisciplinary project because written formative assessments had already been conducted during classroom learning. This approach better reflects the characteristics of vocational education by integrating theoretical knowledge, practical skills, and authentic project-based learning.

Authentic assessment and project-based learning provide a conceptual foundation for addressing this issue. Studies on authentic assessment in Indonesian vocational high schools indicate that teachers need tools capable of evaluating both the process and the product in a way that more closely mirrors real-world practice [8]. Authentic summative assessment is increasingly regarded as an appropriate approach for evaluating students' ability to apply knowledge and skills in real or simulated professional contexts. Rather than relying solely on written examinations, it encourages students to demonstrate competencies through meaningful tasks that reflect workplace demands, although vocational education institutions continue to face challenges in designing assessments with sufficient authenticity, particularly in terms of task realism, cognitive complexity, and meaningful feedback [9]. Authentic performance assessment further supports this approach by enabling students to demonstrate higher-order thinking, problem-solving, professional competence, and transferable skills through integrated tasks that closely resemble workplace situations [10].

These developments are closely related to the growing emphasis on competency-based assessment in vocational education. The primary objective is no longer limited to measuring what students know, but also to determining whether they are able to perform tasks and demonstrate competencies required in professional practice. Accordingly, competency-based assessment relies on authentic performance evidence, practical application of knowledge, and assessment activities that are aligned with occupational standards [11]. From this perspective, summative assessment should provide comprehensive evidence of students' competence rather than relying exclusively on conventional written tests.

Workplace assessment further reinforces this perspective by emphasizing that vocational competence is demonstrated not only through the quality of the final product but also through the work process, collaboration, professional decision-making, and individual responsibility. A recent systematic review found that workplace educators typically evaluate students using continuous observation, authentic performance, negotiated assessment criteria, and multiple sources of evidence instead of a single examination [12]. Similarly, recent developments in educational assessment have encouraged a shift from examination-oriented practices toward learning-oriented assessment, where

performance tasks, interdisciplinary projects, and continuous evidence collection are integrated into the assessment process to provide a more comprehensive picture of students' learning outcomes [13].

Building on these perspectives, the collaborative project-based USP proposed in this study differs from conventional Project-Based Learning (PjBL). While PjBL is primarily used as an instructional strategy within a single subject, the proposed USP functions as a school-level summative assessment. It integrates several general education subjects into one interdisciplinary project, allowing each subject to assess its own learning outcomes using the same project as shared assessment evidence. This approach promotes cross-subject collaboration, reduces fragmented assessment, and provides students with opportunities to demonstrate knowledge, practical skills, teamwork, and individual accountability in an authentic vocational context.

Figure 1 presents the conceptual framework of the study. Authentic summative assessment provides the pedagogical foundation for designing meaningful assessment tasks that require students to demonstrate their competencies in authentic contexts. This perspective is complemented by competency-based assessment, which emphasizes the demonstration of occupational competencies through performance rather than the recall of theoretical knowledge. Vocational and workplace learning further ensure that assessment activities reflect professional practice and workplace expectations. These complementary perspectives are integrated into a collaborative interdisciplinary project that brings together several general education subjects within a single project. The project then serves as the basis for the collaborative project-based Educational Unit Examination (USP), which functions as a school-level summative assessment. The implementation of this assessment model is subsequently examined through the perceptions of students, teachers, school management, and education-office stakeholders.

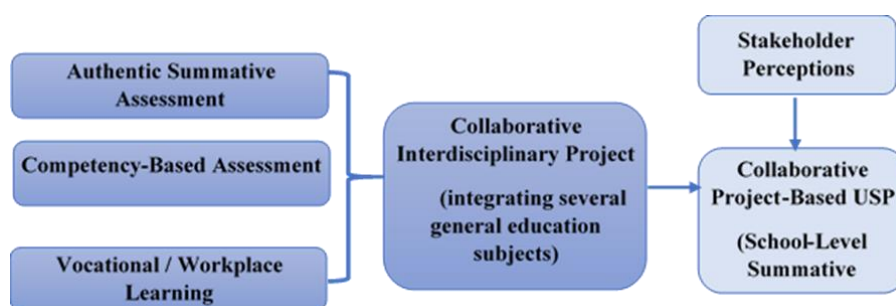


Figure 1. Conceptual Framework of the Proposed Collaborative Project-Based Educational Unit Examination (USP)

The main research gap addressed in this article is the limited empirical discussion of how cross-curricular collaborative projects can be institutionalized as a school-level final summative assessment in vocational high schools. Many previous studies position PjBL as a learning approach, digital media as instructional innovation, or authentic assessment as classroom practice. Fewer studies examine USP as a school assessment architecture involving students, teachers, school management, and education agency stakeholders. Assessment innovation is shaped not only by task quality, but also by teacher capacity, leadership support, student readiness, workload, and policy legitimacy.

Vocational High School 1 Anyer has developed a subject-collaborative project-based USP since 2023 as an alternative to final written exams. This model consists of preparation, pre-USP, and USP implementation stages. During the preparation stage, the school and teachers determine the theme, project type, grading system, and collaborative project modules. In the pre-USP phase, students work in groups to compile daily journals, proposals, laboratory procedures, and project products under teacher guidance. In the implementation phase, students present their project results as a group and answer individual questions from collaborating subject teachers. This structure is intended to assess the process, product, presentation, argumentation, and individual accountability.

Accordingly, this study aims to describe stakeholders' perceptions of the implementation of the collaborative project-based USP as a school-level summative assessment innovation in vocational education. Rather than examining causal effectiveness, the study provides descriptive evidence regarding stakeholder perceptions to inform the future development of authentic school-based assessment practices.

2. Method

This study employed a descriptive quantitative survey design to investigate stakeholders' perceptions of the implementation of the collaborative project-based Educational Unit Examination (USP) at VHS 1 Anyer. A descriptive survey was considered appropriate because the purpose of the study was to describe stakeholders' perceptions of an existing school-level assessment innovation rather than to examine causal relationships or evaluate intervention effectiveness. Accordingly, the primary construct investigated in this study was stakeholders' perceptions of the collaborative project-based USP, rather than its objective effectiveness. A descriptive quantitative survey was considered appropriate because it enables researchers to collect standardized data from multiple stakeholder groups and describe their perceptions of an educational program without examining causal relationships [14].

The study was conducted at VHS 1 Anyer, Banten Province, Indonesia, a vocational high school that has implemented a collaborative project-based USP as an alternative to conventional written final examinations since the implementation of the Merdeka Curriculum. Participants were selected using purposive sampling because only stakeholders who had direct experience with the planning, implementation, assessment, or supervision of the collaborative project-based USP were considered capable of providing informed perceptions regarding the assessment model. The inclusion criteria were: (1) grade XII students who had completed the collaborative project-based USP; (2) subject teachers who participated in project planning, implementation, and assessment; (3) school management members responsible for supervising the implementation of the USP; and (4) education-office stakeholders serving as Vocational High School supervisors. The respondents consisted of 318 participants, including 286 grade XII students, 25 subject teachers, five members of the school management team, and two education-office stakeholders. Because the school management and education-office stakeholder groups were relatively small, findings for these groups should be interpreted cautiously and regarded as descriptive evidence rather than representative estimates.

The assessment innovation examined in this study was a collaborative project-based Educational Unit Examination (USP) that integrates several subjects into a single interdisciplinary project. Unlike conventional subject-based examinations, this model allows each collaborating subject to assess its own learning outcomes using the same project as shared assessment evidence. As illustrated in Figure 2, the implementation consisted of five sequential stages: preparation, pre-USP activities, USP implementation, assessment, and stakeholder evaluation. During the preparation stage, teachers collaboratively determined the project theme, developed interdisciplinary project modules, established assessment criteria, and prepared assessment instruments. During the pre-USP stage, students prepared project proposals, daily journals, laboratory procedures, and practical activities under teacher supervision. During the USP implementation stage, students completed the project, presented the results collaboratively, and individually responded to questions from teachers representing different subjects. Student performance was subsequently evaluated based on the project process, final product, presentation quality, and individual accountability.

Flow of collaborative project-based USP implementation and evaluation

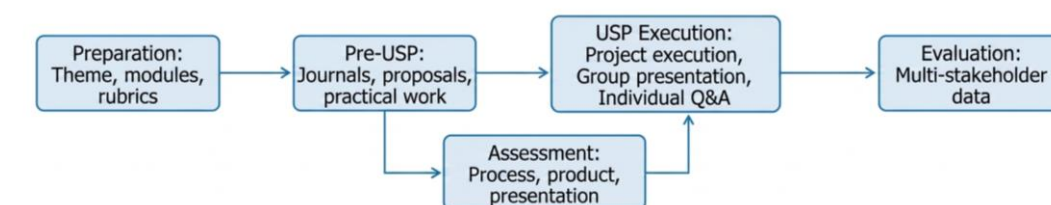


Figure 2. Implementation and Evaluation Pathway of the Collaborative Project-Based USP Model

Data were collected using structured online questionnaires administered through Google Forms. Separate questionnaires were prepared for students, teachers, school management members, and education-office stakeholders according to their respective roles in the implementation of the collaborative project-based USP. Each questionnaire consisted of 20 statements organized into five assessment indicators, with four statements representing each indicator. Although the indicators differed slightly across respondent groups to reflect their respective roles in the implementation of the

collaborative project-based USP, they consistently addressed planning and implementation, competency achievement, assessment quality, workplace relevance, student learning experiences, and future sustainability. An example of a test item is presented in Table 1.

Table 1. Example Questions Based on Indicators

Respondent Group	Indicator	Representative Questionnaire Item
School management	Planning and teacher collaboration	Collaboration among teachers in designing and implementing the project-based School Examination (USP) was effective, characterized by intensive communication, clear division of roles, and mutual agreement regarding implementation.
Teachers	Competency achievement	Projects assigned to students demonstrate their tangible capabilities within the context of vocational learning.
Students	Competency achievement	The project-based USP helps me understand the subject matter more deeply because I am directly involved in the project execution process.
Education-office stakeholders	Policy evaluation and implementation	The implementation of project-based School Final Examinations (USP) in vocational high schools (SMK) represents an assessment innovation aligned with the direction of vocational education policy, which emphasizes strengthening practice-based competencies.

The questionnaires were developed by the researchers based on the theoretical framework presented in the literature review, including authentic assessment, competency-based assessment, project-based learning, workplace learning, and vocational assessment. The instrument was intended to obtain descriptive information regarding stakeholders' perceptions of the collaborative project-based USP rather than to develop a psychometric measurement scale. Because this study analysed institutional survey data that were available only in aggregated form, psychometric procedures such as content validity indices, exploratory factor analysis, confirmatory factor analysis, and internal consistency reliability (e.g., Cronbach's alpha) were not conducted. Therefore, the questionnaire should be interpreted as a descriptive data collection instrument, and this limitation should be considered when interpreting the findings.

Data were analyzed using descriptive statistics because the objective of the study was to describe stakeholders' perceptions rather than to compare respondent groups or test statistical relationships. Responses were measured using a four-point Likert scale, ranging from 1 (strongly disagree) to 4 (strongly agree). For positively worded statements, agree and strongly agree responses were classified as positive responses. For negatively worded statements, reverse scoring was applied so that disagree and strongly disagree represented positive perceptions. The percentage score for each indicator was calculated from the average percentage of positive responses across all items within the corresponding dimension. The interpretation of percentage scores followed Riduwan [15]. 81–100% = very effective; 61–80% = effective; 41–60% = fairly effective; 21–40% = less effective; and 0–20% = Ineffective. Inferential statistical analyses were intentionally not performed because the study adopted a descriptive research design, the available data were aggregated at the indicator level, and the school management (n=5) and education-office stakeholder (n=2) groups were too small to support meaningful statistical comparisons. Therefore, the findings are presented descriptively using percentages, group averages, and indicator-level response patterns.

3. Result and Discussion

3.1 Result

3.1.1 Overall Stakeholder Perceptions

Overall, all respondent groups reported positive perceptions of the collaborative project-based USP. Table 2 shows that school management gave the highest rating at 90%, followed by education-office stakeholders at 89%, students at 82%, and teachers at 73%. Based on the adopted percentage scale, the management, stakeholder, and student groups were in the “very effective” category, while the teacher group was in the “effective” category. These findings should be read as perceived effectiveness because the data were derived from stakeholder questionnaires rather than objective performance indicators.

Table 2. Respondent Composition and Descriptive Perceived-Effectiveness Summary

Respondent Group	N	Overall Perceived Effectiveness (%)	Category
School management	5	90	Very effective
Teachers	25	73	Effective
Students	286	82	Very effective
Education-office stakeholders	2	89	Very effective

The difference between the highest and lowest overall perceptions reached 17 percentage points (90% versus 73%). Despite this variation, none of the respondent groups rated the collaborative project-based USP below the effective category, indicating broad institutional acceptance of the assessment model within the school. Because these findings were derived from perception questionnaires rather than objective assessment outcomes, they should be interpreted as stakeholder perceptions rather than evidence of actual effectiveness.

3.1.2 Indicator-Level Perceptions

Table 3 presents the indicator-level pattern. The teacher group showed the widest variation, ranging from 64% for student engagement in groups to 81% for subject collaboration. The student group was relatively stable, ranging from 78% for satisfaction to 86% for workplace relevance. School management and education-office stakeholders gave high ratings for sustainability-related indicators, but their small sample sizes mean that these percentages are sensitive to changes in individual responses. Therefore, the descriptive results are useful for identifying perceived strengths and weaknesses, but they cannot be generalized statistically.

Table 3. Indicator-Level Perceived Effectiveness of Collaborative Project-Based USP by Respondent Group

Respondent group	Indicator	Effectiveness (%)	Interpretation
School management	Planning and teacher collaboration	90	Very effective
School management	Teacher performance	88	Very effective
School management	Assessment system by teachers	92	Very effective
School management	Student learning experiences	84	Very effective
School management	Expectations for ongoing implementation	96	Very effective
Teachers	Competency achievement	79	Effective
Teachers	Subject collaboration	81	Very effective
Teachers	Student engagement in groups	64	Effective
Teachers	Workplace relevance	71	Effective
Teachers	Practicality and implementation	68	Effective

Respondent group	Indicator	Effectiveness (%)	Interpretation
Students	Competency achievement	82	Very effective
Students	Student activities in groups	80	Effective
Students	Collaboration and group work	84	Very effective
Students	Workplace relevance	86	Very effective
Students	Satisfaction	78	Effective
Education-office stakeholders	Policy evaluation and implementation	88	Very effective
Education-office stakeholders	School and teacher performance	90	Very effective
Education-office stakeholders	Assessment system and accountability	86	Very effective
Education-office stakeholders	Impact on students	84	Very effective
Education-office stakeholders	Expectations regarding the development of job skills	96	Very effective

Category Note: 61%–80% = effective; 81%–100% = very effective (derived from source data interpretation)

Figure 3 further illustrates that the strongest perceived dimensions are sustainability expectations, cross-subject collaboration, and workplace relevance. The weakest dimension is teacher-rated student engagement in groups. This result indicates that although the collaborative project format is perceived as relevant and integrative, the model still needs stronger mechanisms for monitoring individual contribution, preventing passive participation, and ensuring fairness in group-based assessment.

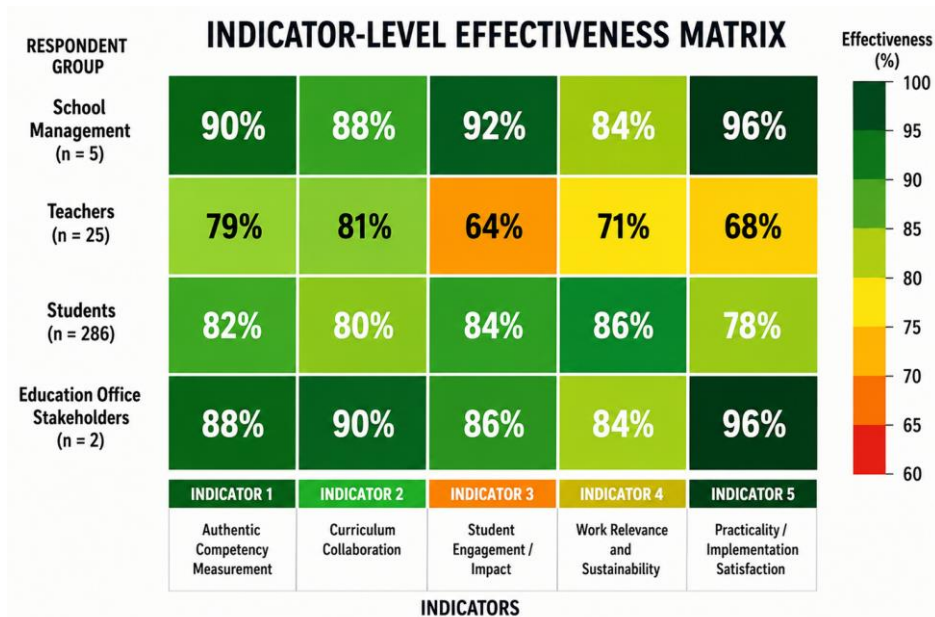


Figure 3. Indicator-Level Perceived Effectiveness Across Respondent Groups. Refer to Table 3 for an Explanation of Indicator Names. Source: Authors' Elaboration Based on Survey Data

3.2 Discussion

3.2.1 Stakeholder Perceptions of Collaborative Project-Based USP

The findings indicate that stakeholders generally perceived the collaborative project-based Educational Unit Examination (USP) as an appropriate innovation for implementing summative assessment in vocational education. School management, students, and education-office stakeholders rated the assessment model as very effective, whereas teachers rated it as effective. Although the level

of perception varied among respondent groups, all groups expressed positive views regarding the implementation of the assessment model.

These findings support the concept of authentic summative assessment, which emphasizes that students should demonstrate knowledge, practical skills, and professional competencies through meaningful performance tasks situated in realistic contexts rather than solely through conventional written examinations [9], [10]. Similarly, competency-based assessment argues that valid assessment should be based on observable evidence of occupational performance instead of isolated knowledge recall [11].

The findings also align with the principles of competency-based assessment, in which assessment focuses on students' ability to demonstrate occupational competence rather than simply recalling theoretical knowledge. By integrating several subjects into a single project, the collaborative project-based USP enabled students to demonstrate technical knowledge, communication, teamwork, and problem-solving skills simultaneously, thereby providing broader assessment evidence than conventional subject-based examinations. This interdisciplinary structure is consistent with workplace learning principles, where competence is demonstrated through integrated professional activities requiring communication, collaboration, decision-making, and problem-solving rather than isolated subject knowledge [12].

3.2.2 Why Did Teachers Report Lower Perceptions?

One of the most notable findings of this study is that teachers consistently reported lower perceptions than the other stakeholder groups. Although teachers still classified the collaborative project-based USP as effective, their overall rating (73%) was substantially lower than that of school management (90%), education-office stakeholders (89%), and students (82%).

This finding may reflect the different roles assumed by teachers during implementation. Unlike students or institutional stakeholders, teachers were directly responsible for designing interdisciplinary projects, aligning assessment tasks with learning outcomes, preparing scoring rubrics, supervising project implementation, conducting individual oral examinations, documenting assessment evidence, and coordinating final grades across collaborating subjects. Consequently, teachers experienced considerably greater implementation demands than the other respondent groups. Previous studies have shown that authentic and performance-based assessment increases teachers' responsibilities in designing assessment tasks, developing scoring rubrics, coordinating assessment decisions, and documenting assessment evidence [9], [13].

The relatively lower ratings on student engagement in groups (64%) and implementation practicality (68%) further suggest that teachers perceived challenges in ensuring equitable participation and managing the complexity of interdisciplinary assessment. Group projects may obscure unequal individual contributions unless assessment procedures include systematic documentation of student participation and clearly defined individual responsibilities. These findings therefore indicate practical implementation challenges rather than rejection of the collaborative project-based USP itself.

3.2.3 Educational Implications for Vocational Summative Assessment

The relatively high ratings for workplace relevance, subject collaboration, and sustainability expectations indicate that respondents viewed the collaborative project-based USP as reflecting the characteristics of vocational education more effectively than traditional written examinations.

Vocational education aims to prepare graduates who are capable of applying knowledge in authentic occupational contexts. Consequently, summative assessment should measure not only cognitive achievement but also students' ability to perform professional tasks, collaborate with others, solve practical problems, and communicate their work effectively. The collaborative project-based USP responds to these expectations by integrating several subjects into a shared assessment task while allowing each subject to assess its own learning outcomes through common performance evidence. This result corroborates the assertion made by Budiono and Hatip [16] that the main goal of summative evaluation is to gauge students' learning progress at a given time point using predetermined learning accomplishment standards.

Unlike conventional Project-Based Learning, which primarily functions as an instructional approach within individual subjects, the collaborative project-based USP serves as a school-level assessment architecture. It enables interdisciplinary collaboration among teachers while reducing fragmented assessment and encouraging students to demonstrate competencies across multiple learning domains within a single authentic project. While most previous studies position Project-Based Learning as an instructional strategy implemented within individual subjects, the present study extends this perspective by conceptualizing collaborative projects as a school-level summative assessment architecture that enables multiple subjects to assess different learning outcomes using shared performance evidence. This institutional perspective has received relatively limited attention in previous vocational education literature. The results show that the Collaborative Project-Based School Examination (USP) successfully empowers students to use their knowledge and abilities to accomplish relevant, practical tasks. This outcome is in line with the findings of Arhin et al. [17], who stated that students' abilities to apply their knowledge and cognitive capabilities to solve significant and important problems are reflected in authentic assessment. Consequently, the application of Collaborative Project-Based USP offers a more real measure of students' competency accomplishment, which is very relevant to the goals of vocational education, in addition to serving as a summative assessment of learning outcomes.

3.2.4 Practical Implications for Implementation

The findings also provide several practical implications for vocational schools intending to implement collaborative project-based summative assessment. Schools must make sure that comprehensive assessment criteria, methods for evaluating each student's participation, active instructor roles as facilitators, and proportionate time and assignment management are available for the best outcomes. Findings about learning motivation, assessment portfolios, equality, work preparedness, teacher competency development, and student needs are also taken into account in this argument as variables affecting the innovation's effectiveness [18].

First, interdisciplinary projects should be explicitly mapped to the intended learning outcomes of each participating subject to ensure assessment validity [19]. Second, assessment rubrics should distinguish between project processes, final products, presentations, and individual accountability to improve fairness [20]. Third, portfolio documentation, daily work journals, teacher observations, peer assessment, and individual oral questioning should be incorporated to provide sufficient evidence of each student's contribution and competency development [21]. Finally, regular moderation meetings among teachers are required to improve scoring consistency and strengthen assessment accountability [22]. These measures may reduce the practical challenges identified by teachers while preserving the authenticity of collaborative project-based assessment.

3.2.5 Study Limitations and Future Research

Several limitations should be acknowledged. First, the findings are based exclusively on stakeholder perceptions collected through questionnaires and therefore cannot be interpreted as evidence of objective assessment effectiveness. Second, the study was conducted in a single vocational high school, limiting the transferability of the findings to other educational contexts. Third, the school management (n=5) and education-office stakeholder (n=2) groups were relatively small and should therefore be interpreted cautiously. Finally, the study did not include objective indicators such as student achievement scores, rubric-based competency assessments, portfolio quality, oral examination performance, or graduate outcomes. This study relied exclusively on stakeholder perceptions collected through questionnaires, and the results therefore cannot be interpreted as evidence of objective assessment effectiveness. Although stakeholder perceptions provide valuable insights into assessment practices, they should be complemented by objective measures of learning outcomes to achieve a more comprehensive evaluation of assessment effectiveness [23].

Future research should integrate perception data with objective measures of student performance and assessment quality. Multi-school studies involving different vocational programs would also provide stronger evidence regarding the effectiveness and transferability of collaborative project-based USP as a school-level summative assessment model.

4. Conclusion

This study concludes that stakeholders generally held positive perceptions of the implementation of the collaborative project-based Educational Unit Examination (USP) at Vocational High School 1 Anyer as a school-level summative assessment innovation in vocational education. School management, students, and education-office stakeholders rated the model as very effective, while teachers rated it as effective, although with relatively lower perceptions. Overall, stakeholders perceived the model as supporting cross-subject collaboration, authentic competency demonstration, and stronger alignment between school assessment and workplace-oriented learning. The scientific contribution of this study lies in providing empirical evidence of stakeholder perceptions toward an innovative school-level summative assessment model that integrates authentic assessment, competency-based assessment, interdisciplinary collaboration, and workplace-oriented learning within a single assessment framework. Unlike conventional Project-Based Learning, which primarily functions as an instructional approach, the collaborative project-based USP is conceptualized as a structured school-level assessment architecture that enables multiple subjects to assess their respective learning outcomes through shared project evidence while maintaining individual accountability and assessment transparency. This perspective extends current discussions on authentic assessment by demonstrating how interdisciplinary collaborative projects can be institutionalized as a comprehensive summative assessment model in vocational education. Nevertheless, these conclusions should be interpreted within the scope of the present study. The findings are based on stakeholders' perceptions collected from a single vocational high school and therefore do not provide evidence of actual effectiveness or causal relationships. Consequently, the results should not be generalized to other vocational schools without further empirical investigation. From a practical perspective, successful implementation of collaborative project-based USP requires transparent assessment rubrics, explicit alignment with learning outcomes, portfolio documentation, evidence of individual contribution, individual oral questioning, teacher moderation, and institutional support to manage teachers' assessment workload. Future research is recommended to combine stakeholders' perception data with objective measures of assessment outcomes, such as rubric-based competency scores, portfolio quality, project performance, individual oral examination results, and graduate employability indicators. Multi-school studies involving different vocational programs are also needed to examine the transferability and sustainability of the collaborative project-based USP across diverse educational contexts.

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References

- [1] K. Fatinah, F. N., Hikmat, M. H., & Ratih, "Authentic assessment in vocational high school: Teachers' perspectives, practice and challenges," *J. Lit. English Educ. Study Progr.*, vol. 6(1), pp. 61–70, 2025.
- [2] C. Author, "Abdurrahman Abstrak Introduction The current secondary education system in Egypt tends to emphasize mastery of theory over practical application , leading to students feeling unprepared to face the challenges they encounter in the workforce . 1 The excess," vol. 9, no. 2, pp. 92–103, 2024, doi: 10.30983/educative.v9i2.8574.
- [3] B. Sudarsono et al., "Development of Integrated Project-based (PjBL-T) model to improve work readiness of vocational high school students," *J. Pendidik. Vokasi*, vol. 12, no. 3, pp. 222–235, Dec. 2022, doi: 10.21831/jpv.v12i3.53158.
- [4] L. M. Natasya, "Asesmen dalam Pendidikan : Memahami Konsep , Fungsi dan Penerapannya Natasya Lady Munaroh mengumpulkan informasi guna membuat keputusan yang tepat terkait siswa , kurikulum , " *Dewantara J. Pendidik. Sos. Hum.*, vol. 3, no. 3, pp. 281–297, 2024.
- [5] K. Dianti, M. Ulfah, A. Salam, G. Gunawan, and L. Luthfiyah, "Analisis Asesmen Diagnostik,

- Formatif dan Sumatif Serta Implikasinya terhadap Efektivitas Sistem Evaluasi Pendidikan,” *J. Pendidik. dan Pembelajaran Indones.*, vol. 5, no. 2, pp. 555–565, 2025, doi: 10.53299/jppi.v5i2.1234.
- [6] P. Nilsook, P. Chatwattana, and T. Seechaliao, “The Project-based Learning Management Process for Vocational and Technical Education,” *High. Educ. Stud.*, vol. 11, no. 2, p. 20, Feb. 2021, doi: 10.5539/hes.v11n2p20.
- [7] S. Suparmi, F. Sukmawati, B. T. Cahyono, E. B. Santoso, R. Prihatin, and R. Juwita, “-Implementation of Project Based Learning Model in Vocational High School: A systematic Literature Review,” *J. Penelit. Pendidik. IPA*, vol. 10, no. 12, pp. 890–901, Dec. 2024, doi: 10.29303/jppipa.v10i12.8847.
- [8] Sutarto and Jaedun, “Authentic Assessment Competence of Building Construction Teachers in Indonesian Vocational Schools,” *J. Tech. Educ. Train.*, vol. 10, no. 1, pp. 91–108, Jun. 2018, doi: 10.30880/jtet.2018.10.01.008.
- [9] V. Villarroel, R. Melipillán, J. Santana, and D. Aguirre, “How authentic are assessments in vocational education? An analysis from Chilean teachers, students, and examinations,” *Front. Educ.*, vol. 9, Mar. 2024, doi: 10.3389/educ.2024.1308688.
- [10] N. C. J. Welsandt, F. Fortunati, E. Winther, and H. J. Abs, “Constructing and validating authentic assessments: the case of a new technology-based assessment of economic literacy,” *Empir. Res. Vocat. Educ. Train.*, vol. 16, no. 1, p. 4, Apr. 2024, doi: 10.1186/s40461-024-00158-0.
- [11] G. M. Gambi, Ph.D. and O. C. ALONSABE, Ph.D., “Examining and Validating Summative Tests Used in Competency-Based Assessment for TESDA Technology Institutions (TTI): Basis for Training Design,” *Int. J. Res. Innov. Soc. Sci.*, vol. VIII, no. VII, pp. 936–949, 2024, doi: 10.47772/IJRISS.2024.807074.
- [12] M. E. De Vos, L. K. J. Baartman, C. P. M. Van der Vleuten, and E. De Bruijn, “How do workplace educators assess student performance at the workplace? A qualitative systematic review,” *Vocat. Learn.*, vol. 17, no. 1, pp. 165–188, Apr. 2024, doi: 10.1007/s12186-023-09328-9.
- [13] M. Wakid, H. Sofyan, A. Widowati, and A. Zaida Ilma, “Learning-oriented assessment: a systematic literature network analysis,” *Cogent Educ.*, vol. 11, no. 1, Dec. 2024, doi: 10.1080/2331186X.2024.2366075.
- [14] V. De Nguyen, V. D. Tran, V. T. Ho, T. H. Ho, and L. V. N. Nguyen, “Managing Entrepreneurship Education for Vocational College Students: A Case Study in Vietnam’s Mekong Delta Region,” *Educ. Process Int. J.*, vol. 16, no. 1, 2025, doi: 10.22521/edupij.2025.16.199.
- [15] Riduwan, *Skala pengukuran variabel-variabel penelitian*. Alfabeta, 2015.
- [16] A. Nur Budiono and M. Hatip, “Asesmen Pembelajaran Pada Kurikulum Merdeka,” *J. Axioma J. Mat. dan Pembelajaran*, vol. 8, no. 1, pp. 109–123, Apr. 2023, doi: 10.56013/axi.v8i1.2044.
- [17] D. Arhin, E. Gideon Yanney, K. Kwakye, A. Abaidoo, and W. Bonsu Opoku, “TEACHERS PERCEPTIONS AND PRACTICES OF AUTHENTIC (PERFORMANCE-BASED) ASSESSMENT AT THE BASIC SCHOOL LEVEL IN GHANA,” *Int. J. Adv. Res.*, vol. 9, no. 4, pp. 617–624, Apr. 2021, doi: 10.21474/IJAR01/12739.
- [18] B. Hegarty and M. Thompson, “A Teacher’s Influence on Student Engagement: Using Smartphones for Creating Vocational Assessment ePortfolios,” *J. Inf. Technol. Educ. Res.*, vol. 18, pp. 113–159, 2019, doi: 10.28945/4244.
- [19] J. Gulikers, D. Brinkman, and P. Runhaar, “Using a rubric to grasp intercultural competence development in vocational education,” *J. Vocat. Educ. Train.*, vol. 73, no. 1, pp. 47–70, Jan. 2021, doi: 10.1080/13636820.2019.1688854.

-
- [20] R. D. Mahande, F. A. Darmawan, and J. D. Malago, "Metacognitive skill assessment model through the blended learning management system in vocational education," *J. Pendidik. Vokasi*, vol. 11, no. 1, Mar. 2021, doi: 10.21831/jpv.v11i1.36912.
 - [21] Ambiyar, Waskito, Raimon Efendi, and Ratih Agustin Wulandari, "Fostering Lifelong Competency Development: A Digital Authentic Assessment Model for Vocational Internship Programs," *Int. J. Interact. Mob. Technol.*, vol. 19, no. 06, pp. 182–196, Mar. 2025, doi: 10.3991/ijim.v19i06.53813.
 - [22] D. Lestari, R. Oktiani, U. Lutfianasari, and M. Imaduddin, "Chemistry Teachers' Perspectives on the Implementation of Interdisciplinary Science Projects in Vocational Schools: Challenges and Strategic Solutions," *JTK (Jurnal Tadris Kim.)*, vol. 10, no. 1, pp. 76–91, Jun. 2025, doi: 10.15575/jtk.v10i1.37830.
 - [23] M. Sofyan, M. Barnes, and I. Finefter-Rosenbluh, "Fair assessment as an aspect of effective teaching: teachers' and students' perceptions of and positioning within assessment practices in Indonesian vocational higher education," *J. Vocat. Educ. Train.*, vol. 76, no. 4, pp. 795–817, Aug. 2024, doi: 10.1080/13636820.2022.2098170.