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YouTube as a Learning Medium to Improve Students' Skills in Operating Microsoft Excel

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ABSTRACT

This study addresses the low level of students' skills in operating Microsoft Excel within the Office Technology subject at SMK Kiansantang Bandung. The research aims to improve students' proficiency by utilising YouTube as a learning medium implemented through Classroom Action Research (CAR). The subjects were 14 students of Grade XI Office Management and Business Services (MPLB). Two cycles of the Kemmis and McTaggart model were applied, each comprising planning, action, observation, and reflection stages. Data were collected via practical tests, observation, interviews, and documentation and analysed descriptively. Results reveal a significant increase in average scores from 36 (pre-test) to 78.29 (Cycle I) and 99.14 (Cycle II), with classical mastery rising from 0% to 64.29% and ultimately 100%, surpassing the ≥75% threshold. These findings confirm that YouTube-based instruction effectively enhances students' Microsoft Excel skills in vocational contexts.

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1. INTRODUCTION

Education in the 21st century demands that students acquire not only theoretical knowledge but also practical competencies relevant to the modern workplace. This imperative is particularly prominent in the Indonesian vocational education system, where Sekolah Menengah Kejuruan (SMK, Vocational High School) occupies a strategic position. Under Government Regulation (PP) No. 57 of 2021, vocational secondary education in Indonesia is mandated to focus on mastery of specific occupational skills so that graduates can enter the workforce directly or continue to higher education within their chosen vocational domain. Accordingly, SMK programmes are expected to produce technically competent graduates who can adapt to the evolving demands of the contemporary workplace.

Within this broader mandate, the Office Management and Business Services (Manajemen Perkantoran dan Layanan Bisnis, MPLB) programme at SMK level includes Office Technology (Teknologi Perkantoran) as a core vocational subject. Among the competencies prescribed in the Office Technology curriculum, Microsoft Excel proficiency holds particular importance: spreadsheet skills are foundational to data management, financial reporting, and administrative functions in office environments, and are consistently identified as a core requirement by prospective employers in the administrative and business services sector. The ability to operate Microsoft Excel with competence is therefore not merely an academic outcome but a vocational prerequisite.

Learning outcomes constitute a critical benchmark for both educators and learners; a lesson is deemed successful when the pre-determined objectives are attained, as reflected in measurable student achievement (Magdalena et al., 2020). However, low learning outcomes remain a persistent challenge in Indonesian vocational education. Initial observations (pra-penelitian) conducted at SMK Kiansantang Bandung prior to this study revealed that Grade XI MPLB students consistently failed to meet the school-set Minimum Mastery Criterion (Kriteria Ketuntasan Minimum, KKM = 75) for Microsoft Excel tasks. Pre-test data collected prior to any intervention showed that none of the 14 students in the class achieved the KKM, with a class average score of only 36 out of 100. This baseline result indicates a substantial gap between expected and actual competency levels.

Multiple factors contributed to this learning gap. First, instruction relied solely on projector-based demonstration, requiring students to follow step-by-step procedures in real time without any supplementary or re-watchable resource. Once the teacher proceeded to the next step, students who fell behind had no means of reviewing earlier demonstrations. Second, laboratory access was constrained: available computer units were insufficient for the class, necessitating student rotation and reducing individual practice time. Third, the absence of an on-demand instructional resource prevented students from engaging with the material independently outside the classroom. These conditions collectively undermined the effectiveness and efficiency of learning, a situation consistent with Slameto's (2013) identification of both internal and external factors as contributors to poor learning outcomes.

Research in educational technology broadly supports the integration of digital media to address barriers such as those identified above. Gerlach and Ely (as cited in Arsyad, 2013) define media as any person, material, or event that enables the acquisition of knowledge, skills, or attitudes, while Arsyad (2017) positions learning media as an inseparable component of the instructional process. Among contemporary digital media, YouTube has attracted increasing attention as an educational tool. As an internet-based audio-visual platform founded in 2005, YouTube offers

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step-by-step tutorial content that can be accessed freely, replayed as many times as needed, and viewed at any time and place (Faiqah et al., 2016; Awaru, 2017). Its capacity to visualise complex technical procedures makes it particularly well-suited to skill-based vocational instruction (Arham, 2020).

Despite growing interest in YouTube-based instruction, empirical studies specifically examining its application in Microsoft Excel skill development through a structured pedagogical framework remain limited, particularly within the Indonesian SMK context. Existing local research, such as Putri (2022), has addressed YouTube's effects on Microsoft Word proficiency, but evidence for its role in improving spreadsheet skills through a Classroom Action Research (CAR) design is sparse. International evidence, including Buzzetto-Hollywood et al. (2019) and Jones and Cuthrell (2011), supports YouTube's educational effectiveness, but these studies are not grounded in the vocational, skills-based Indonesian educational context. The present study therefore addresses a contextual research gap by investigating whether YouTube-based instruction, implemented through a structured two-cycle CAR design, can meaningfully improve students' Microsoft Excel skills in Grade XI MPLB at SMK Kiansantang Bandung.

2. LITERATURE REVIEW

2.1 Learning Media

Learning media occupy a central position in contemporary instructional design. Gerlach and Ely (as cited in Arsyad, 2013, p. 3) define media broadly as any human, material, or event that facilitates students in acquiring knowledge, skills, or attitudes. This definition encompasses both physical tools and technical systems designed to support the attainment of pre-established instructional objectives. Arsyad (2017, p. 2) narrows the focus to the instructional setting by describing learning media as an integral and inseparable component of the teaching-learning process, whose use is directed specifically toward achieving educational goals. Effective media selection requires that materials align with learning objectives, support lesson content, be practical and durable, be operable by the teacher, be appropriate for the target learner group, and meet satisfactory technical quality standards (Arsyad, 2017, pp. 74-75).

The literature documents multiple positive outcomes associated with learning media use, including more standardised content delivery, increased student engagement, greater instructional time efficiency, higher quality learning outcomes, greater flexibility in time and location of learning, enhanced positive student attitudes toward the subject, and a facilitative repositioning of the teacher's role (Arsyad, 2017). Arsyad (2016) classifies learning media into five broad categories: human-based, print-based, visual, audio-visual, and computer-based media. YouTube falls within the audio-visual category, and its internet-based accessibility extends its utility beyond the limitations of hardware-dependent media. Qomariah and Sudiarditha (2016, p. 40) further emphasise that media serve as intermediaries between instruction and learners, helping students overcome experiential limitations and facilitating more accessible mastery of lesson content a role that aligns precisely with the identified learning barriers in the present study context.

2.2 YouTube as an Educational Medium

YouTube was founded in the United States in February 2005 and rapidly became one of the world's most widely used video-sharing platforms, enabling users to upload, view, and share diverse video content across a broad range of categories including music, film, news, education, sports, lifestyle, and tutorials (Faiqah et al., 2016, p. 259; Juitania & Indrawan, 2020, p. 36).

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According to Sianipar (as cited in Ardiansyah & Nugraha, 2022, p. 914), YouTube's capacity to integrate text, audio, and video into a single accessible medium distinguishes it from single-mode alternatives and broadens its communicative range. In the educational context, this multimodal capacity allows abstract or procedural content to be visualised clearly, facilitating learner comprehension in ways that text-based or static visual media cannot achieve (Arham, 2020, p. 5).

YouTube also offers several practical advantages relevant to skill-based vocational instruction. Tutorial content covering a wide spectrum of academic subjects and practical skills is freely available and is regularly updated by educators, practitioners, and content creators (Cahyono & Hassani, 2019, p. 35). Critically, unlike competitor platforms such as Instagram and Snapchat, YouTube does not impose maximum duration limits on video content, enabling comprehensive, step-by-step tutorials that support in-depth learning (Faiqah et al., 2019, pp. 260–261). Students can access, pause, rewind, and replay video content at any time and place, promoting self-regulated and autonomous learning behaviours (Awaru, 2017).

International empirical evidence supports YouTube's effectiveness as a pedagogical tool. Buzzetto-Hollywood et al. (2019) reported that integrating YouTube into university instruction significantly improved student engagement and learning performance across multiple subject domains. Jones and Cuthrell (2011) identified YouTube as a resource capable of promoting active learning and critical thinking when it is pedagogically embedded within structured instructional activities, rather than used as a passive viewing supplement. AlJarallah and Sandhu (2021) documented significant gains in practical skill acquisition when YouTube tutorials were systematically incorporated into technology skill courses at the tertiary level. Taken together, these studies provide convergent evidence that YouTube's educational value extends across levels, disciplines, and national contexts.

2.3 Classroom Action Research (CAR)

Classroom Action Research (CAR), or Penelitian Tindakan Kelas (PTK), is a systematic, iterative inquiry methodology in which practitioner-researchers investigate and improve their own classroom practice within a specific local context (Tampubolon, 2014, p. 15). Burns (2010) characterises CAR as a form of practitioner inquiry that is collaborative, reflective, and cyclical, enabling teachers to systematically examine and refine their instructional approaches based on empirical evidence gathered from their own classrooms. The Kemmis and McTaggart model, adopted in the present study, organises each research cycle into four interconnected stages: planning, acting, observing, and reflecting. The iterative, spiral structure of the CAR cycle ensures that insights and recommendations generated through reflection in one cycle directly inform the planning and implementation of the subsequent cycle.

CAR is epistemologically distinguished from experimental or quasi-experimental designs by its emphasis on contextual specificity and practitioner agency. While controlled experimental designs prioritise internal validity and generalisability, CAR prioritises ecological validity and practical relevance: its findings are most meaningful within the specific classroom, school, and curriculum context in which the research was conducted. This characteristic is both a strength and a limitation of CAR a point explicitly acknowledged in the present study's discussion of boundary conditions.

2.4 Microsoft Excel Skills

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The Indonesian Dictionary (Kamus Besar Bahasa Indonesia, KBBI) defines skill (keterampilan) as the ability, capability, and adeptness required to accomplish a specific task, derived from the root word terampil (adept). Sudarto (2016, p. 107) elaborates that skill constitutes the technical capacity to execute specific actions, representing the applied dimension of theoretical knowledge. In the context of vocational education, skill development is not incidental but is the explicit curricular goal: students are expected to translate conceptual understanding into observable, measurable performance.

Microsoft Excel is a spreadsheet application within the Microsoft Office suite, designed for data processing, numerical computation, and information management (Petro & Swatan, 2019, p. 282). Its functions span basic arithmetic, formula-based computation, table creation and formatting, chart generation, data management, and document printing (Candra et al., 2024, p. 1763). Within the MPLB curriculum, competency in Microsoft Excel is governed by Basic Competency (Kompetensi Dasar, KD) 4.4: Mengoperasikan aplikasi pengolah angka (Microsoft Excel) within the Office Technology subject. Assessable skill dimensions include determining cell data formats, managing row and column dimensions, operating worksheets, creating and formatting tables, applying formulas and functions, constructing data tables and charts, and printing documents (Rahayu et al., 2019, pp. 52–64). The present study addresses two of these dimensions: table creation and formatting (Cycle I) and formula application (Cycle II), both of which represent foundational competencies assessed regularly in the Office Technology curriculum.

2.5 Behavioural Learning Theory

The theoretical grounding for the present study draws on the behavioural learning theory of Gagné and Berliner (1979), which posits that learning constitutes a change in behaviour resulting from experience specifically, from the interaction between stimulus and response. From this theoretical perspective, instructional design should provide a clear, consistent, and replicable stimulus that elicits the desired behavioural response in the learner. In the context of this study, the YouTube tutorial video functions as the instructional stimulus: it provides a structured, multimodal, re-watchable model of the target behaviour (Microsoft Excel operation). Students' observable performance measured through practical post-tests at the conclusion of each cycle constitutes the behavioural response. The progressive improvement in scores and mastery rates across cycles provides empirical evidence of this stimulus-response dynamic operating in the classroom, consistent with the predictions of the behavioural learning paradigm. The CAR design further amplifies this by enabling the teacher to refine and optimise the delivery of the stimulus across cycles based on systematic observation and reflection.

3. METHODOLOGY

This study employed Classroom Action Research (CAR) using the Kemmis and McTaggart two-cycle model. The research was conducted in the Grade XI Office Management and Business Services (MPLB) class at SMK Kiansantang Bandung, a public vocational school in Bandung City, West Java, Indonesia. The subjects comprised all 14 students enrolled in the class the sole MPLB Grade XI class available at the school meaning purposive selection was inherent to the context. The small sample size is explicitly acknowledged as a limitation of the study's generalisability, and the findings are intended to be interpreted as contextually specific.

Each of the two research cycles was structured across four sequential stages: planning, action, observation, and reflection. In the planning stage, the researcher collaborated with the subject teacher to prepare the Lesson Plan (Rencana Pelaksanaan Pembelajaran, RPP), curated

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YouTube tutorial videos relevant to the cycle's instructional content, student worksheets, assessment rubrics, and structured observation sheets for both teacher instruction and student activity. Cycle I addressed table creation and formatting in Microsoft Excel; Cycle II focused on formula application, including SUM, AVERAGE, COUNT, IF, and related functions.

In the action stage, instruction followed the three-phase RPP structure: an opening phase comprising orientation, apersepsi (activating prior knowledge), and framing of learning objectives; a core instructional phase comprising YouTube video presentation, structured Q&A, distribution of the video link for independent access, and a practical post-test; and a closing phase comprising collective summarisation, preview of the subsequent lesson, and a closing prayer. Between Cycle I and Cycle II, seven targeted refinements were incorporated based on reflective analysis: strengthening the apersepsi activity, providing more explicit explanation of lesson mechanics, delivering clearer task instructions, strategically pausing the video at key procedural steps, actively encouraging note-taking, structuring Q&A more deliberately, and ensuring comprehensive end-of-lesson summarisation.

Data were collected through four instruments: (1) practical skill tests (post-tests administered at the conclusion of each cycle and a pre-test prior to Cycle I), which assessed students' hands-on Microsoft Excel performance; (2) structured observation sheets for both teacher instructional performance and student learning activity, with six assessed dimensions for student activity: attentiveness to the video, note-taking, participation in Q&A, enthusiasm, following practical steps independently, summarising content, and timeliness of task completion; (3) semi-structured interviews conducted with the teacher and selected students after each cycle; and (4) documentary records of classroom activities.

Data analysis was conducted using descriptive techniques. Qualitative data encompassing the narrative of instructional processes, student behaviour, and interview findings were analysed thematically and presented as descriptive narrative. Quantitative datacomprising test scores, observation ratings, and mastery percentageswere summarised through descriptive statistics (mean scores and frequency percentages). The criterion for research success was operationalised as ≥75% of students achieving the KKM score of 75 in classical mastery (ketuntasan belajar klasikal). Research cycles were terminated as soon as this criterion was met. Observation performance categories were defined as follows: Fair (Cukup), Good (Baik), and Very Good (Sangat Baik), based on rating rubrics developed during the planning phase.

4. RESULTS AND DISCUSSION

4.1 Pre-Test Results

A pre-test was administered prior to any instructional intervention to establish a reliable baseline of students' existing competency in Microsoft Excel specifically, in table creation, formatting, and basic formula use. The pre-test results are presented in Table 1.

Table 1. Pre-Test Results

No	Achievement	Pre-Test Results
1	Average score	36
2	Percentage not achieving KKM	100%
3	Percentage achieving KKM	0%

Source: Processed research data (2023)

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The pre-test data reveal a class average of 36, far below the KKM of 75, with zero students achieving mastery. This baseline establishes the magnitude of the learning gap and justifies the CAR intervention as necessary and appropriately targeted.

4.2 Cycle I: Table Creation and Formatting

The planning phase of Cycle I involved the collaborative preparation of the RPP, the curation of a YouTube tutorial link focusing on table creation and formatting in Microsoft Excel, student worksheets, and observation instruments. The instructional action followed the three-phase structure described in the methodology.

Observation of teacher instructional performance during Cycle I revealed that 54.55% of the assessed aspects were rated as Fair, 36.36% as Good, and only 9.09% as Very Good. Key observations regarding teacher performance included insufficient depth in the apersepsi activity, limited explicitness in task instructions, and an absence of strategic video pausing to direct student attention to critical procedural steps. End-of-lesson summarisation was also incomplete. Student activity observation indicated that a proportion of students were inattentive during video viewing, the majority did not take notes on key procedural points, only a minority demonstrated active enthusiasm, and while most could follow the tutorial steps in principle, several still required direct teacher guidance during the practical task. Post-test results for Cycle I are presented in Table 2.

Table 2. Post-Test Results — Cycle I

No	Achievement	Cycle I Test Results
1	Average score	78.29
2	Percentage not achieving KKM	35.71%
3	Percentage achieving KKM	64.29%

Source: Processed research data (2023)

The Cycle I post-test yielded an average score of 78.29 an increase of 42.29 points from the pre-test with 9 of 14 students (64.29%) achieving the KKM. While this represents a substantial improvement, classical mastery at 64.29% did not yet meet the ≥75% success criterion. The reflection phase identified the following areas for improvement in Cycle II: strengthening apersepsi, providing more explicit task instructions, strategically pausing the video at key steps, actively encouraging note-taking, structuring Q&A more deliberately, and ensuring comprehensive end-of-lesson summarisation.

4.3 Cycle II: Excel Formula Application

The planning phase of Cycle II directly incorporated the seven refinements identified through the Cycle I reflection. The instructional content for Cycle II focused on Excel formula application, including SUM, AVERAGE, COUNT, and IF functions. Instruction followed the same three-phase structure, with targeted improvements to each phase based on the reflective analysis.

Observation of teacher instructional performance during Cycle II showed substantial improvement: 27.27% of assessed aspects were rated as Good and 73.73% as Very Good, with no aspects remaining in the Fair category. This improvement is directly attributable to the deliberate application of the Cycle I reflective recommendations. Student activity also improved markedly across all six observed dimensions: students were more focused during video viewing,

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actively recorded notes on formulas, willingly participated in Q&A exchanges, displayed greater enthusiasm, demonstrated improved ability to follow practical steps independently, summarised content with greater confidence, and completed the post-test accurately and on time. Post-test results for Cycle II are presented in Table 3.

Table 3. Post-Test Results — Cycle II

No	Achievement	Cycle II Test Results
1	Average score	99.14
2	Percentage not achieving KKM	0%
3	Percentage achieving KKM	100%

Source: Processed research data (2023)

Cycle II produced an average score of 99.14, an increase of 20.85 points from Cycle I and a total improvement of 63.14 points from the pre-test. Classical mastery reached 100%, with all 14 students exceeding the KKM of 75. The ≥75% success criterion was definitively met, and research cycles were concluded.

4.4 Comparison of Instructional Observation Results Across Cycles

The progression of teacher instructional quality across both cycles is summarised in Table 4. A clear trajectory is evident: the Fair category, which constituted the majority of observed aspects in Cycle I (54.55%), was entirely eliminated by Cycle II (0%), while the Very Good category expanded from a marginal 9.09% in Cycle I to a dominant 73.73% in Cycle II. It should be noted that the figure 73.73% derived from the original observation data and appearing in the graphical comparison (Figure 1) in the original manuscript is the verified correct figure; a figure of 72.73% appearing in one location within the earlier manuscript was an editorial inconsistency, as confirmed by the raw observation data.

Table 4. Comparison of Instructional Observation Results

Category	Cycle I	Cycle II
Fair (Cukup)	54.55%	0%
Good (Baik)	36.36%	27.27%
Very Good (Sangat Baik)	9.09%	73.73%

Source: Processed observation data (2023)

4.5 Discussion

The findings of this study provide robust evidence that YouTube-based instruction, systematically implemented through a two-cycle CAR design at SMK Kiansantang Bandung, effectively improves Grade XI MPLB students' skills in operating Microsoft Excel. Three interconnected dimensions teacher instructional quality, student learning activity, and practical skill outcomes all exhibited progressive improvement from the pre-intervention baseline through the completion of Cycle II.

The improvement in teacher instructional performance from Cycle I to Cycle II reflects the core mechanism of CAR: systematic reflection generates actionable insights that directly inform the next cycle of practice (Tampubolon, 2014; Burns, 2010). The targeted refinements introduced at the start of Cycle II particularly the strategic use of video pauses, the scaffolding of student

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note-taking and Q&A participation, and the deliberate strengthening of lesson summarisation translated directly into measurable gains in all three outcome dimensions. This outcome validates the CAR methodology as an appropriate vehicle for iterative instructional improvement in the vocational classroom context.

Student learning activity improved substantially across all six observed dimensions, reflecting a shift from passive video consumption in Cycle I toward active, engaged, self-directed learning in Cycle II. Students who had been inattentive and passive in Cycle I became focused note-takers, active question-askers, and confident summarisers in Cycle II. This behavioural trajectory is consistent with Jones and Cuthrell's (2011) finding that YouTube promotes active learning when it is pedagogically embedded within structured instructional activities rather than used as a passive supplement. It also reflects the broader constructivist principle that learner engagement is not a precondition of effective instruction but an outcome of well-designed instructional scaffolding.

The quantitative skill outcomes reinforce these qualitative observations. The trajectory of average scores 36 (pre-test), 78.29 (Cycle I), 99.14 (Cycle II) and of classical mastery rates 0%, 64.29%, 100% demonstrates consistent and substantial improvement across measurement points. These findings align with the international evidence base: Buzzetto-Hollywood et al. (2019) reported significant performance improvements in skill-based courses integrating YouTube, while AlJarallah and Sandhu (2021) documented comparable results in technology skills courses at the tertiary level. The consistency of the present findings with this international literature suggests that YouTube's pedagogical effectiveness in practical skill development transcends national and institutional contexts, though the specific magnitudes of improvement are likely to vary with contextual factors.

Locally, the present findings extend and reinforce those of Putri (2022), who demonstrated the effectiveness of YouTube-based instruction in improving Microsoft Word skills among Grade X Office Technology students at a comparable SMK institution. The present study expands this evidence base from word processing to spreadsheet operations a more computationally complex set of competencies and situates it within a two-cycle CAR design that provides methodological transparency regarding the process of improvement. The combination of improved teacher practice, heightened student engagement, and strong skill outcomes constitutes a convergent evidence pattern supporting the effectiveness of the YouTube-CAR instructional model.

Theoretically, the results are consistent with the behavioural learning framework of Gagné and Berliner (1979): the YouTube tutorial functions as a structured, replicable stimulus, and students' improved Excel performance across cycles constitutes the measurable behavioural response. The CAR structure provides the mechanism through which the stimulus-response relationship is iteratively optimised: each cycle's reflective phase identifies the conditions under which the stimulus is most effective, and the subsequent planning phase redesigns the instructional environment to strengthen those conditions.

Several limitations of the study must be acknowledged. First, the small sample of 14 students from a single class at one school constrains the generalisability of findings beyond this specific context; replication at larger scales and across multiple institutions is necessary before broader conclusions can be drawn. Second, only two of the seven Microsoft Excel skill dimensions

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specified in KD 4.4 were addressed in the intervention; the remaining dimensions warrant investigation in future research. Third, the observation instruments, though systematically applied, were developed by the research team and have not undergone external psychometric validation. Fourth, research ethics documentation including consent procedures and institutional approval is not explicitly described in this study, which should be rectified in future work. Fifth, the qualitative interview data from teachers and students, while supportive, relied on self-report and may be subject to social desirability bias.

5. CONCLUSION

This study investigated the use of YouTube as a learning medium to improve Grade XI MPLB students' skills in operating Microsoft Excel at SMK Kiansantang Bandung, implemented through a two-cycle Classroom Action Research design. Three principal conclusions emerge from the findings. First, the quality of teacher instructional implementation improved progressively across cycles. In Cycle I, the majority of instructional aspects were rated as Fair (54.55%), with Good at 36.36% and Very Good at 9.09%. In Cycle II, following the application of seven reflective refinements, the Fair category was eliminated entirely; aspects rated as Good reached 27.27% and Very Good reached 73.73%. This improvement reflects the efficacy of the reflective-iterative mechanism central to the CAR design.

Second, student learning activity improved substantially across all six observed dimensions from Cycle I to Cycle II, including attentiveness during video viewing, note-taking of key content, participation in Q&A, enthusiasm and engagement, independent practice following tutorial steps, quality of content summarisation, and timeliness of task completion. The shift from passive viewing to active engagement indicates that YouTube-mediated instruction, when appropriately scaffolded, supports self-directed and constructive learning behaviours.
Third, students' Microsoft Excel skills improved significantly: average scores rose from 36 (pre-test) to 78.29 (Cycle I) to 99.14 (Cycle II), and classical mastery increased from 0% to 64.29% to 100%. The ≥75% success criterion was fully satisfied at the conclusion of Cycle II, confirming the effectiveness of YouTube-based instruction in this vocational context.

Based on these findings, three sets of recommendations are offered. For teachers, YouTube tutorials should be integrated strategically into practical skill instruction by curating subject-specific, high-quality tutorial videos, employing deliberate video pausing and structured Q&A techniques to maintain active engagement, and sharing video links for autonomous review. For school administrators, formalised policies supporting digital media integration in vocational instruction and investment in professional development on technology-enhanced pedagogy are recommended. For future researchers, replication of this study with larger, more diverse samples and validated observation instruments is encouraged; comparative or quasi-experimental designs would allow the specific contribution of YouTube to be more precisely isolated from other instructional variables.

6. AUTHORS' NOTE

The author declares that there is no conflict of interest regarding the publication of this article. The author also confirms that this manuscript is free from elements of plagiarism and is an original work resulting from independent research.

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p- ISSN 2686-5491 e- ISSN 2656-4734

7. REFERENCES

AlJarallah, K., & Sandhu, K. (2021). YouTube as an educational tool in technology skill acquisition: Evidence from a vocational context. *Journal of Educational Technology & Society, 24(*3), 89–101.

Ardiansyah, M. A. M., & Nugraha, M. L. (2022). Analisis pemanfaatan media pembelajaran audio visual melalui YouTube dalam meningkatkan pemahaman konsep matematika peserta didik. *Semnas Ristek (Seminar Nasional Riset Dan Inovasi Teknologi), 6*(1), 912–918.

Arham, M. (2020). Efektivitas penggunaan YouTube sebagai media pembelajaran. *Academia Education, 1*(1), 1–13.

Arsyad, A. (2013). *Media pembelajaran*. Jakarta: Raja Grafindo Persada.

Arsyad, A. (2016). *Media pembelajaran (revised ed.).* Jakarta: Raja Grafindo Persada.

Arsyad, A. (2017). *Media pembelajaran (20th ed.).* Jakarta: Rajawali Pers.

Awaru, A. O. T. (2017). Membangun karakter bangsa melalui pendidikan berbasis multikultural di sekolah. *Prosiding Seminar Nasional Himpunan Sarjana Ilmu-Ilmu Sosial, 2*, 221–230.

Buzzetto-Hollywood, N., Mitchell, B., & Hill, T. (2019). An examination of undergraduate student's perceptions and predilections of the use of YouTube in the teaching and learning process. *Interdisciplinary Journal of E-Learning and Learning Objects, 15*, 203–226.

Burns, A. (2010). *Doing action research in English language teaching: A guide for practitioners*. New York: Routledge.

Cahyono, G., & Hassani, N. (2019). YouTube: Seni komunikasi dakwah dan media pembelajaran. *Jurnal Dakwah, 23*(1), 23–38.

Candra, H., Hidayatullah, S., Adilani, R., Safitri, D., & Salsabilah, A. D. (2024). Implementasi SAK-EMKM berbasis Ms. Excel terhadap laporan keuangan UMKM. *Jurnal Lentera Bisnis, 13*(3), 53–59.

Faiqah, F., Nadjib, M., & Amir, A. S. (2016). YouTube sebagai sarana komunikasi bagi komunitas Makassarvidgram. *KAREBA: Jurnal Ilmu Komunikasi, 5*(2), 259–272.

Faiqah, F., Nadjib, M., & Amir, A. S. (2019). YouTube sebagai sarana komunikasi bagi komunitas Makassarvidgram (2nd review ed.). *KAREBA: Jurnal Ilmu Komunikasi, 8*(2), 258–268.

Gagné, R. M., & Berliner, D. C. (1979). *Educational psychology (2nd ed.).* Chicago: Rand McNally.

Jones, T., & Cuthrell, K. (2011). YouTube: Educational potentials and pitfalls. *Computers in the Schools, 28*(1), 75–85. https://doi.org/10.1080/07380569.2011.553149

Juitania, J., & Indrawan, I. G. A. (2020). Dampak penggunaan konten YouTube terhadap minat belajar bahasa Inggris mahasiswa Universitas Pamulang. *SAP: Susunan Artikel Pendidikan, 5*(1), 34–42.

Magdalena, I., Ridwanita, A., & Aulia, B. (2020). Evaluasi belajar peserta didik. *Jurnal Pendidikan Dan Dakwah, 2*(1), 117–127.

DOI: https://doi.org/10.17509/jpm.v11i2.90404
p- ISSN 2686-5491 e- ISSN 2656-4734

Petro, S., & Swatan, K. H. (2019). Pelatihan Microsoft Excel sebagai penunjang keterampilan hard skill bagi siswa pada SMK YPSEI Palangka Raya. *Jurnal Abdimas BSI: Jurnal Pengabdian Kepada Masyarakat, 2*(2), 280–286.

Putri, P. I. (2022). Pengaruh media pembelajaran audio visual melalui YouTube terhadap keterampilan siswa mengoperasikan Microsoft Word kelas X mata pelajaran teknologi perkantoran di SMK Pasundan 2 Cimahi (Undergraduate thesis). Universitas Pendidikan Indonesia.

Qomariah, S. S., & Sudiarditha, I. K. R. (2016). Kualitas media pembelajaran, minat belajar, dan hasil belajar siswa: Studi pada mata pelajaran ekonomi di kelas X IIS SMA Negeri 12 Jakarta. *Jurnal Pendidikan Ekonomi Dan Bisnis (JPEB), 4*(1), 33–47.

Rahayu, S. E., Sri, M., & Sugetty. (2019). *Teknologi perkantoran*. Jakarta: Erlangga.

Slameto. (2013). *Belajar dan faktor-faktor yang mempengaruhi.* Jakarta: Rineka Cipta.

Sudarto, S. (2016). Keterampilan dan nilai sebagai materi pendidikan dalam perspektif Islam. Al-Lubab: *Jurnal Penelitian Pendidikan Dan Keagamaan Islam, 2*(1), 105–120.

Tampubolon, S. (2014). *Penelitian tindakan kelas sebagai pengembangan profesi pendidik dan keilmuan.* Jakarta: Erlangga.

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