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Development Of Interactive Learning Multimedia Based On Canva In Vocational Subject Of Culinary

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Abstract
Students with mild intellectual disabilities often face challenges in understanding abstract concepts and require specialized learning tools that support visual and interactive engagement. This study aimed to develop and evaluate the validity, practicality, and effectiveness of a Canva-based Interactive Learning Multimedia (ILM) designed specifically for vocational culinary education at SLB Negeri 1 Padang. Employing the Research and Development (R&D) method, this study involved expert validation, user practicality testing, and effectiveness analysis using quantitative techniques. Content and media validation were conducted by six experts using the Aiken's V formula, practicality was assessed by one teacher and five students through questionnaires, and effectiveness was tested using normality, homogeneity, T-test, and effect size calculations with SPSS 27. The findings revealed that the ILM was highly valid, with average Aiken's V scores of 0.97 (material experts) and 0.92 (media experts). Practicality scores from both students (3.87) and teachers (3.85) classified the media as very practical. Statistical analysis showed that the data were normally distributed and homogeneous. The T-test results demonstrated a significant difference in learning outcomes ($t = 4.382 > t\text{-table} = 2.306$; $p < 0.05$), indicating the effectiveness of the media. Furthermore, the effect size (Cohen's $d = 2.8$) suggested a very large effect on student performance. In conclusion, the Canva-based Interactive Learning Multimedia is a valid, practical, and highly effective tool to enhance vocational learning outcomes for students with mild intellectual disabilities. This innovation is recommended for broader implementation and further development in inclusive education settings.

INTRODUCTION

Inclusive education aims to provide equal learning opportunities for all students, including those with special educational needs such as students with mild intellectual disabilities (De Galicia

2024; Nusantara and Kaihatu 2025). These students often face cognitive challenges, particularly in processing abstract information and engaging with traditional, text-heavy learning resources. Therefore, the use of technology-based instructional tools that cater to their specific learning needs is essential to enhance engagement and improve learning outcomes. Vocational education, such as culinary training, demands practical, step-by-step understanding, which can be supported effectively through visually rich and interactive learning media (Jongsuksomsakul 2024; Wahyudiati 2023).

In recent years, Interactive Learning Multimedia (ILM) has gained attention as a powerful tool to facilitate learning, particularly in special education. Numerous studies have reported the effectiveness of multimedia in increasing student motivation, understanding, and retention, especially when it incorporates audio-visual elements and interactive features (Ishlahiyah, Furaida, and Latifah 2020; Lestari et al. 2024). Platforms like Canva, which offer easy-to-use design tools and multimedia integration, provide educators with accessible means to create customized content. However, despite its popularity in general education contexts, the application of Canva-based ILM specifically for students with mild intellectual disabilities in vocational subjects remains underexplored (Herhana, Rusnaini, and Nuryadi 2024; Indriyani, Fendi, and Haron 2024).

A review of existing literature reveals a significant research gap in the development and empirical evaluation of Canva-based multimedia for inclusive education settings. While several studies focus on interactive media in mainstream classrooms, only a few address its adaptation for students with cognitive impairments, and even fewer investigate its use in vocational training environments. This gap indicates the need for focused studies that not only design but also rigorously validate and test the practicality and effectiveness of such tools for special education purposes.

The novelty of this research lies in the development and evaluation of a Canva-based Interactive Learning Multimedia tailored for vocational culinary education at a special needs school (SLB Negeri 1 Padang). Unlike previous studies that primarily emphasize general content delivery, this study integrates accessibility features, structured learning sequences, and visual support specifically for students with mild intellectual disabilities. The media was designed not only to meet curriculum standards but also to accommodate cognitive limitations, ensuring inclusivity and independent learning (Pangesthi et al. 2024; Triwoelandari, Handayani, and Arif 2023).

Therefore, this study aims to develop a Canva-based ILM that is valid, practical, and effective in improving the learning outcomes of students with mild intellectual disabilities in a vocational culinary class (Faridah et al. 2025; Rosel and Faridah 2023). By addressing the current gap in the application of mainstream digital tools in special education, this research contributes to the growing body of knowledge in inclusive pedagogy and provides empirical evidence for the broader use of interactive media in specialized educational settings (Wibowo and Limken 2021; Wulandari, Sugeng, and Khumaedi 2023).

METHODS

This study employed a Research and Development (R&D) approach to design, develop, and evaluate the Canva-based Interactive Learning Multimedia (ILM) for vocational culinary education targeting students with mild intellectual disabilities. The development model consisted of several key stages: needs analysis, design, development, validation, practicality testing, effectiveness

testing, and dissemination. The multimedia product was created using Canva, integrating text, images, audio, and interactive components to facilitate independent and visually guided learning for students. Validation of the multimedia content was conducted by three material experts and three media experts, using Aiken's V formula to measure the content validity across key aspects such as relevance, presentation, interactivity, and usefulness.

Practicality testing was conducted in SLB Negeri 1 Padang, involving five students with mild intellectual disabilities and one vocational teacher. Participants were asked to access the multimedia via Chromebooks or mobile phones, and then provide feedback through structured questionnaires. To assess effectiveness, the study employed pre- and post-test comparisons between control and experimental groups. Data were analyzed using SPSS version 27, including normality testing (Kolmogorov-Smirnov), homogeneity testing (One-Way ANOVA), independent samples t-test, and effect size calculation using Cohen's d. These methods were applied to determine whether the developed multimedia had a statistically significant and meaningful impact on student learning outcomes.

RESULT AND DISCUSSION

The results of this study present a comprehensive analysis of the development and implementation of Canva-based Interactive Learning Multimedia (ILM) in vocational culinary education for students with mild intellectual disabilities. The findings encompass three key aspects: validity, practicality, and effectiveness of the multimedia. Data were collected through expert validation, user assessments, and statistical testing, which together provide strong evidence of the ILM's feasibility and impact. The results are presented in tabular form, followed by detailed interpretations to support the research objectives

Table 1. Summary of Research Results

No.	Test/Aspect	Result	Criteria/Interpretation
1	Content Validity (Material Experts)	Avg. Aiken's V = 0.97	Highly Valid
	Relevance: 0.95; Presentation: 0.976; Exercises: 0.972; Usefulness: 1.0	-	-
2	Media Validity (Media Experts)	Avg. Aiken's V = 0.92	Highly Valid
	Navigation: 0.98; Visuals: 0.92; Media Integration: 0.83; Usefulness: 0.98	-	-
3	Practicality Test	Students: 3.87; Teacher: 3.85	Very Practical
4	Normality Test (Kolmogorov-Smirnov)	Sig. = 0.200	Data are Normally Distributed
5	Homogeneity Test (One Way ANOVA)	Sig. = 0.037 (F count > F table)	Homogeneous Data
6	Effectiveness Test (T-test)	t count = 4.382 > t table = 2.306	Significant Effect (Ha accepted)
7	Effect Size Test	Cohen's d = 2.8	Very Large Effect

The development phase of the Interactive Learning Multimedia (ILM) based on Canva was thoroughly evaluated for its validity, practicality, and effectiveness. Material validation by experts

resulted in a high Aiken's V average score of 0.97, indicating strong content alignment and instructional relevance. Similarly, media validation yielded an average score of 0.92, showing the multimedia was well-designed in terms of navigation, visuals, and integration.

Practicality tests involving both teachers and students with mild intellectual disabilities revealed high user satisfaction, with average scores of 3.87 and 3.85 respectively, categorizing the media as "very practical."

Effectiveness analysis began with prerequisite tests. The normality test (Sig. = 0.200) confirmed that data were normally distributed, and the homogeneity test supported equal variance across groups. The T-test showed a significant effect of the media on student learning outcomes (t count = 4.382 > t table = 2.306), thus supporting the hypothesis that the multimedia intervention had a positive impact.

Further analysis using Cohen's d effect size showed a value of 2.8, indicating a very large effect of the Canva-based interactive multimedia on learning outcomes in vocational culinary education for students with special needs. These results demonstrate the media's high potential for enhancing educational quality and learner engagement.

Table 2. Comparison of Pre-test and Post-test Scores Between Control and Experimental Groups

Group	N	Pre-test Mean	Post-test Mean	Mean Gain	Interpretation
Experimental	5	68.2	84.4	16.2	Significant Increase
Control	5	67.6	72.8	5.2	Slight Increase

Table 2 presents the comparison of average scores between the control and experimental groups before and after the intervention. The experimental group, which used the Canva-based Interactive Learning Multimedia, showed a substantial increase from a pre-test mean score of 68.2 to a post-test mean score of 84.4, resulting in a mean gain of 16.2 points. In contrast, the control group, which did not use the multimedia, improved only slightly, with a mean gain of 5.2 points.

These findings clearly indicate the positive impact of the multimedia intervention on students' learning outcomes. The significant difference in mean gains supports the results from the T-test and effect size analysis, further validating the effectiveness of the developed ILM in enhancing understanding and retention among students with mild intellectual disabilities in vocational culinary education.

Discussions

The results of this study indicate that the development of Canva-based Interactive Learning Multimedia (ILM) for vocational culinary education is both valid and practical for students with mild intellectual disabilities. The high Aiken's V scores from both material and media experts (0.97 and 0.92 respectively) demonstrate that the content aligns with the learning objectives and is delivered in a visually engaging and accessible format. These findings align with previous research emphasizing the importance of expert validation in ensuring that multimedia learning tools meet pedagogical and technological standards (Qian 2024; Raga and Surjowati 2024).

The practicality test further supports the usability of the developed multimedia. The scores from both students (3.87) and teachers (3.85) classify the media as "very practical," highlighting the

ease of access, user-friendly interface, and the suitability of the multimedia for the target learners. This suggests that Canva, as a platform, offers sufficient flexibility and accessibility features that support differentiated instruction for students with special needs. Moreover, the positive feedback from end-users underscores the importance of involving teachers and students during the development process (Akmal, Putri, and Sutanti 2024; Sari and Wati 2020; Sitangsu, Utami, and Agustini 2025).

Effectiveness was confirmed through rigorous statistical testing, beginning with normality and homogeneity assessments. The results confirmed that the data were suitable for parametric testing, and the T-test revealed a statistically significant improvement in students' learning outcomes when using the ILM. This finding supports the hypothesis that interactive multimedia positively influences engagement and knowledge retention, particularly in practical, skill-based learning environments such as vocational culinary education (Muhajir, Sarwendah, and bin Ibrahim 2024; Rahmi[1] et al. 2025; Ulyani and Jayanti 2025).

The effect size result (Cohen's d = 2.8) demonstrates a very large impact of the ILM on student learning outcomes, signifying not just statistical but also practical significance. This reinforces the role of well-designed digital tools in enhancing learning among students with intellectual disabilities, who often require more visual, interactive, and repetitive learning materials (Razman and Yasak 2024, 2024). Overall, the success of this multimedia development highlights the potential of technology-based instruction to improve inclusive education and should encourage future innovations in this area (Mahanani et al. 2025; Rahmi et al. 2025; Zainuddin et al. 2024).

CONCLUSIONS

The findings of this study confirm that the development of Canva-based Interactive Learning Multimedia (ILM) for vocational culinary education is valid, practical, and highly effective for students with mild intellectual disabilities. The multimedia met the criteria of high content and media validity, demonstrated strong practicality based on user feedback, and significantly improved student learning outcomes, as evidenced by statistical testing and a very large effect size. Therefore, the Canva-based ILM can be considered a suitable and impactful learning tool for enhancing inclusive vocational education. Its implementation is recommended not only for similar educational contexts but also as a model for developing accessible digital learning media for students with special needs.

CONFLICTS OF INTEREST STATEMENT

Regarding this study, the author declares that there is no conflict of interest.

AUTHOR CONTRIBUTIONS

Study concept and design: Novri Wahyuni. Acquisition of data: Elida Elida. Analysis and interpretation of data: Kasmita Kasmita. Drafting the manuscript: Novri Wahyuni. Critical revision of the manuscript for important intellectual content: Dony Novaliendry. Statistical analysis: Novri Wahyuni.

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