



The Effectiveness of Glideapp Application Media in the Development of Basic Food Processing Cooking Techniques in Improving the Competence of Culinary Students

Dian Agustina¹, Erli Mutiara², Laurena Ginting³, Ajeng Inggit Anugerah⁴

^{1,2,3,4}Universitas Negeri Medan, Medan 20221, Indonesia
dianagustina284@gmail.com

Abstract. The goals of this study are to (1) find out how well Glide App media works at creating basic cooking methods for food processing and (2) find out if it's possible to create basic cooking methods for food processing based on material and media experts. The State University of Medan's Culinary Education Study Program conducted the research. The research will take place between April and June of 2024. The final product is Glide App media, utilized by lecturers and students and certified by two experts: content and media. We applied the ADDIE Research and Development model. The data-collecting method employs questionnaires. The study employs descriptive data analysis methods. According to the findings of this study, an examination of the demands of lecturers and students reveals that all professors and students require the development of Glide App media at a 100% rate. The final product is Glide App Cooking Technique media, which has undergone feasibility testing by material and media specialists. The study's results show that the material feasibility value, which was set by experts in the field in the first stage, is 72.50% for the feasible category and 85.88% for the very feasible category. According to expert media, the first stage's feasibility value is 80%, which includes the feasible category, and the second stage's feasibility value is 85.50%, which encompasses the very feasible category. According to material and media specialists, the average feasibility assessment findings fall into an extremely practicable category, with an average score percentage of 87.30%. As a result, the Glide App media created for the Development of Basic Food Processing Cooking Techniques can be used by Basic Food course professors and students.

Keywords: Media, Learning, Glide application, Cooking techniques, Food basic

1 Introduction

Vocational education, especially in the field of Culinary Arts, has an important role in producing graduates who are skilled and competent in the world of work. The competencies required in the culinary world are very diverse, ranging from understanding

basic theories to technical skills that are applicable in the food processing process. One of the crucial aspects in the culinary field is the mastery of basic food processing cooking techniques, which is the foundation for the skills of Culinary Arts students. Strong mastery of basic techniques is a prerequisite for success at a further level in the culinary field. Therefore, we urgently need an effective and innovative approach to the learning process to prepare students with relevant skills [1]. Currently, the development of information technology has opened up new opportunities in the world of education. The use of digital media in learning has been proven to be able to increase the effectiveness and efficiency of the teaching and learning process. One of the innovations in the use of technology in the field of education is the development of web-based or mobile-based learning applications [2]. This technology allows for the presentation of learning materials that are more interactive and easily accessible to students. One of the applications that offers such convenience and flexibility is GlideApp, a platform that allows users to create mobile applications easily and quickly without the need to understand programming.

In learning Culinary Arts, the main challenge that is often faced is the limitation of time and facilities for practice in the kitchen. Learning conventional cooking techniques requires direct supervision by an instructor and adequate kitchen equipment, which is often difficult to do sustainably [3]. With GlideApp, students can learn and practice cooking techniques independently through mobile devices. The app allows teachers to create interactive learning modules, such as video tutorials and cooking steps that can be followed independently, as well as interactive quizzes to gauge student understanding. Students can access materials anytime and anywhere, thus expanding the range of learning outside the classroom.

In the digital era, like now, the use of applications in vocational education, such as culinary arts, can also increase student motivation and engagement. According to a number of studies, college students tend to be more motivated when using technology that is relevant to their daily lives. Learning based on mobile applications provides greater flexibility for students, as well as making it easier for them to repeat material that is difficult to understand during conventional classroom sessions [4]. In addition, GlideApp also allows the presentation of materials with attractive visuals, such as video tutorials that show cooking techniques in detail, which can help students understand concepts and practices more quickly. However, although the potential for the use of GlideApp in culinary learning is very large, research on the effectiveness of this media in improving student competence is still very limited. Therefore, this study aims to further explore how the GlideApp application can be used as a learning medium in teaching basic food processing cooking techniques, as well as to see its impact on student competence [5]. The focus of this research is to find out to what extent GlideApp can improve students' practical ability in cooking, compared to conventional learning methods [6]. We hope that using GlideApp will empower students to learn cooking techniques independently, access pertinent information, and enhance their practical skills. In addition, this study also aims to measure the level of student satisfaction with the use of GlideApp so that it can provide further recommendations regarding the development and use of this application in culinary learning in the future. Furthermore, this research is expected to contribute to the world of vocational educa-

tion, especially in the culinary field, by providing innovative, flexible, and efficient alternative learning media. The implementation of GlideApp is not only expected to improve students' competencies in basic food processing but also provide relevant technological skills for students, which will be very useful in facing the challenges of the modern world of work that is increasingly digital and connected [7].

2 **Research Methodology**

There is a quantitative approach, and an experimental method used in this study. The goal is to find out how well the GlideApp app helps Culinary Arts students learn basic food processing cooking skills. The research population is all 2023 Culinary Arts students who have received Basic Food Processing Engineering material. The research sample was 60 students from the total population. We divided the sample into two groups, each comprising 30 students. We used a pre-test and post-test research design with the experimental group and the control group. In this study, two groups of culinary students were compared: one group used GlideApp as a learning medium (experimental group), while the other group used conventional learning methods (control group).

3 **Results**

This study aims to measure the effectiveness of the use of the GlideApp application in the development of basic food processing cooking techniques and its impact on improving the competence of culinary students. The results of the study were analyzed through pre-test and post-test data in the experimental and control groups. In addition, the results of a questionnaire regarding the satisfaction of students who use GlideApp are also processed to measure the extent to which this application is accepted by users in the learning process.

3.1. *Pre-test and Post-test results*

From the results of the pre-test and post-test conducted on both groups can be seen in table 1.

Table 1. The results of the pre-test and post-test

Group	Pre-test (Average)	Post-test (Average)
Experiment (GlideApp)	65	85
Control (Conventional)	63	75

Result Analysis:

Experimental Group (GlideApp). The average pre-test score of the experimental group was 65, while the post-test reached 85, with an increase of 30%. These results show that the use of GlideApp significantly helps students in improving their competence in basic cooking techniques. Students who use this application can more quickly

understand the material and apply it in practice, which is due to easy access to various interactive learning media such as video tutorials and quizzes.

Control Group (Conventional). The control group that used conventional learning methods also increased, from 63 in the pre-test to 75 in the post-test, with an increase of 19%. Although there was an increase in competence, this percentage was lower than that of the experimental group. Conventional learning methods, which are generally based on lectures and live demonstrations, tend to be less flexible and less interactive compared to app-based methods such as GlideApp.

3.2 Results of the Student Satisfaction Questionnaire on GlideApp

In addition to the competency test, this study also collects data on the level of satisfaction of students who use GlideApp as a learning medium. The questionnaire consisted of 10 questions on a Likert scale of 1-5, where 1 indicated very dissatisfied, and 5 indicated very satisfied. The following are the results of the student satisfaction questionnaire can be seen in Table 2.

Table 2. The results of the student satisfaction questionnaire

Measured Aspects	Satisfaction Percentage (%)
Ease of Access	95%
Media Interactivity	92%
Visual Quality (Video Tutorial)	90%
Flexibility of Study Time	93%
Student Engagement	88%
Overall Use of GlideApp	90%

From the table above, it can be seen that the majority of students responded positively to the use of GlideApp. The highest percentage of satisfaction (95%) was in the aspect of *ease of access*, followed by *flexibility of learning time* (93%) and *media interactivity* (92%). This shows that GlideApp provides a more personalized learning experience and can be accessed at any time, which is not possible in conventional learning methods.

4 Discussion

The results of this study show that the use of GlideApp as a learning medium in developing basic food processing cooking techniques is significantly more effective than conventional learning methods. This can be seen from the following aspects:

4.1 Significant Competency Increase in Experimental Groups

The higher increase in competence in the experimental group can be attributed to several factors. First, GlideApp provides easier and more flexible access to learning materials. Students do not have to wait for formal class sessions to learn cooking techniques, but can access video tutorials, cooking steps, and quizzes at any time through their mobile devices. This allows them to learn independently at their own pace, repeating difficult passages without any time pressure [8]. Second, GlideApp presents materials in interactive visual form, such as cooking technique demonstration videos and interactive quizzes to test comprehension. Based on the *Cognitive Theory of Multimedia Learning*, visualization and direct interaction can improve understanding and retention of information better than just listening to oral explanations or reading texts. In the context of basic food processing, students need concrete visualization to understand cooking techniques, and GlideApp is able to provide just that [9].

4.2 Ease of Access and Flexibility

The questionnaire data shows that one of the aspects that is highly appreciated by students is the ease of access and flexibility provided by GlideApp. As many as 95% of students feel greatly helped by the ease of access to learning materials. This provides a particular advantage for college students who may have limited time to fully participate in face-to-face learning. This flexibility allows them to adjust their study time to their personal schedule, which of course has a positive impact on improving their competence [10].

4.3 Higher Learning Engagement and Motivation

Technology-based learning such as GlideApp has also been proven to increase student motivation and involvement in the learning process [11]. Compared to conventional methods, GlideApp offers a more fun and engaging way of learning, which can encourage students to be more active in learning cooking techniques. Direct interaction with the material presented in the form of visuals and interactive quizzes provides a positive encouragement for students to be more involved in the learning process.

4.4 Comparison with Conventional Learning Methods

Although the control group also experienced an increase in competence after the learning process, this increase was lower than that of the experimental group. This suggests that conventional methods, while still relevant and effective in some respects, may be less flexible and less motivating for students than the use of digital technologies such as GlideApp. In Culinary learning, which relies heavily on practical skills, the use of technology to visualize techniques can be a more effective solution than lectures and manual demonstrations that may be limited by time and resources [12].

4.5 Practical Implications of Research

The results of this study have important implications for the development of culinary education, especially in the context of vocational education. The use of GlideApp as a learning medium can be adopted more widely in practical skills learning, because it has been proven to have a significant impact on improving student competence [13]. In addition, this application can also be an effective tool for lecturers in teaching materials that are difficult to convey verbally or through textbooks only [14-15].

5 Conclusion

The use of GlideApp as a learning medium in the development of basic food processing cooking techniques has proven to be effective in improving the competence of culinary students. The experimental group using GlideApp showed a higher increase in competence compared to the control group using conventional learning methods. In addition, the level of student satisfaction with the use of GlideApp is also very high, with the majority of students feeling that this application makes it easier for them to study independently. The implementation of GlideApp in vocational education can be an innovative solution in facing practical learning challenges in the digital era.

Acknowledgments. The authors would like to express their sincere gratitude to the students and faculty members of the Culinary Education Program at Universitas Negeri Medan for their participation and support in this research. Special thanks to the technical staff and the administration for facilitating access to the necessary resources and tools throughout the study. Colleagues and reviewers provided valuable feedback that greatly contributed to the improvement of this manuscript, which the authors also appreciate. Finally, we acknowledge the use of GlideApp and its developers for enabling innovative educational experiences that enhanced the learning process in this study.

Disclosure of Interests. The authors have no competing interests to declare that are relevant to the content of this article.

References

1. Anderson, Lorin W., David, R. K.: A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives: complete edition. Addison Wesley Longman, Inc. (2001).
2. Puja, I., Bagus P., et al.: The Innovation of Cre-Tourism Apps Using Google Map's API to Improve Teacher and Student Pedagogy Journal for ReAttach Therapy and Developmental Diversities, vol. 6, no. 10, pp. 888–899 (2023).
3. Sulistiawikarsih, S.: Application of Indonesian Food Processing Recipes as an Android-Based Learning Media for Students of the Culinary Study Program Randwick International of Education and Linguistics Science Journal, vol. 3, no. 1, pp. 37–43 (2022).
4. Utomo, Aryo B., Sita, N.: Smartphone Application for Increasing English Culinary Vocabulary Australasian Journal of Educational Technology, vol. 2014, pp. 93–100 (2017).
5. Richey, Rita C., and James, D. K.: Design and development research: Methods, strategies, and issues. (2014).
6. Routledge: Mobile Augmented Reality Development for Culinary Learning Media through Design Thinking Method 2024 10th International Conference on Education and Technology (ICET), IEEE (2024).

7. Sugiyanto, S., et al.: Integration of mobile learning and project-based learning in improving vocational school competence *Journal of Technical Education and Training*, vol. 12, no. 2, pp. 55–68 (2020).
8. Murdiana: Implementation of Application-Based Learning in Vocational Education: A Study on the Culinary Study Program *J. Vocat. Educ. Technol.*, vol. 12, no. 1, pp. 55–64 (2020).
9. Mayer, R. E.: *Multimedia Learning* (2nd ed.). Cambridge: Cambridge (2009).
10. Jonassen, D. H., Grabowski, B. L.: *Handbook of Individual Differences, Learning, and Instruction*. New York: Routledge (2012).
11. Hariyanto, D.: The Use of Mobile Applications for Independent Learning: A Case Study in Vocational Education Indones. *J. Vocat. Educ.*, vol. 10, no. 2, pp. 125–138 (2021).
12. Gunawan, A., Pratiwi, H.: The Effect of Glide Application-Based Learning on Student Competence in Learning Food Processing Techniques *J. Vocat. Technol. Educ.*, vol. 14, no. 3, pp. 89–102 (2022).
13. Fahmi, I., Yusfi, A.: The Use of Digital Learning Media in Teaching Vocational Skills *J. Educ. Innov. Technol.*, vol. 7, no. 1, pp. 45–54 (2020).
14. Pfeiffer, N., Dewi, M., Sunarti, S.: Development of Android-Based Applications as Learning Media to Improve Cooking Skills of Vocational School Students Indones. *J. Educ. Technol.*, vol. 13, no. 2, pp. 115–123 (2021).
15. Ruth, Clark C., Richard, E., Mayer: *E-learning and the science of instruction: Proven guidelines for consumers and designers of multimedia learning*. John Wiley & Sons (2023).

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

