Analyzing the Needs for Developing an Android-Based Learning Media Application in the Subject of Appraisal

Kartika D. S. Susilowati(✉), Nur Indah Riwajanti, and Muhammad Muwidha

Accounting Department, State Polytechnic of Malang, Malang, Indonesia
kartika.dewi@polinema.ac.id

Abstract. The goal of this study was to determine whether there was a need for developing android-based learning materials in the Appraisal course. This is exploratory descriptive research. The subjects of this study were students in the State Polytechnic of Malang's Diploma IV Finance study program, class of 2017. A total of 39 students were selected at random for the study. Data was gathered through observing students during the learning process and handing out questionnaires to them. The outcomes of the observations show that the Appraisal course's learning materials continue to rely on PowerPoint presentations and handbooks/texts delivered both face-to-face and via e-learning. According to the findings of the study reveals that students need learning media that allow them to learn lessons on their own at any time and in any location utilizing Android-based mobile phones.

Keywords: Needs analysis · Learning need · Appraisal · Android-based learning media

1 Introduction

The spread of COVID-19 is an international problem, Indonesia is one of the countries that has not been spared from the virus. The government has put in a lot of effort to stop COVID-19 from spreading. People are encouraged to stay at home during the lockdown, then to keep their distance from other people during Social Distancing and Physical Distancing [1]. The impact of COVID-19 is felt in various sectors: the education sector. The reason is that since the lockdown has been imposed, campuses must be closed and learning is treated online. Online learning is different from face-to-face learning in class because when learning in class a lecturer must indirectly insert a humanist message to shape the character of his students [2].

In this regard, the lecturer has a critical role to play; they must be able to improve the quality of their learning by maximizing the use of Information and Communication Technology (ICT) to support them in their daily learning activities, improve the effectiveness and efficiency of the learning process, and assist them in accomplishing learning objectives [3]. In addition, learning supported by ICT will create situations and

environments for students that can stimulate the ability to be creative and innovative [4]. Learning as a system consists of several components, namely objectives, materials, methods or implementation, and evaluation [5]. The four components become a reference to design a learning design in a measurable and directed manner so that learning can achieve the expected goals. The ability of a lecturer in designing, developing, and then applying a learning design will affect his success in the learning process on campuses. The learning plan is principally a process of preparing learning objectives, choosing the right strategies in learning, making materials, and evaluating all learning components [6].

A need analysis was performed to examine the type of computer application materials required by students. This is in line with [7]'s assertion that a need analysis is required when creating learning materials. Chen [7] splits these needs into two categories: target and learning needs. The learner's target needs refer to what they need to know in order to perform in the target environment, as well as what they already know and what they need to know. Target needs must ensure that the course offers information that is both relevant and valuable. It's more practical to consider the target situation in terms of necessities, weaknesses and wants. What the learner needs to know in order to perform effectively in the goal-setting is referred to as necessities. Lacks relate to the gap between the target competency and the learner's current competency, while needs refer to the learner's desire to learn.

The purpose of this study is to identify the requirements for developing an android-based learning media for the Appraisal course. The media will be used to provide students with asset appraisal knowledge and skills. In order to achieve the goal, the lecturer must appropriately construct teaching-learning materials, which include the materials to be taught, learning methods and activities, and desired learning styles by the students. The findings of this study are intended be used to develop an android-based learning media for the Appraisal subject, allowing students to learn independently while using their own mobile phones.

2   Literature Review

One aspect related to supporting the learning process is learning resources. Learning resources are everything that contains knowledge developed from a curriculum that is structured systematically and following the characteristics of students [8]. Various forms of learning resources can be used as learning resources such as in the form of audio, visual, and audiovisual both printed and electronic [9]. Along with the rapid development of technology, learning activities must be well planned so that they can keep up with technological developments. Especially as a millennial generation, students like technology-based learning resources, including android-based learning resources because they are easy, handy, and convenient to access [10]. In addition, innovative learning with adequate teaching materials will be able to improve the quality of learning following technological developments.

Nurdyansyah [11] believes that learning media has a critical role in enhancing the quality of teaching and learning. The media utilized in learning must be relevant for the school or college and the students, so the media selection must be fitted to the learning

objectives. According to Santoso [12], the objective of employing learning media, in general, is to assist teachers or lecturers in delivering messages or subject matter to students in a way that is easier to understand, more entertaining, and fun for them. Learning media are tools and methods used as communication mediators between teachers and students in the learning process to optimize communication and increase engagement between lecturers and students [13]. The use of information technology in the classroom will make learning more exciting and meaningful for students. Furthermore, the use of information technology will make learning more motivating and provide students with an engaging and meaningful learning experience [14].

For the construction of instructional courses and training programs, the ADDIE model is the most widely utilized approach. This approach provides clear steps for successful implementation. The ADDIE model is a systematic approach to instructional course design by providing a framework that ensures that the designs are effective and efficient [15]. In addition, Hoke [16] also explained that using the ADDIE model approach is very appropriate because the instruction design is systematic.

The stages of this model are as follows:

1) Analysis
   The analysis stage entails determining what the learner will get away from the experience. Several actions, such as doing a needs analysis, identifying problems, and conducting task analysis, must be carried out in order to find out and define what must be learned.

2) Design
   Learning objects, exercises, assessment instruments and their contents, subject analysis, lesson plans, and learning media choices are all part of the design phase. This step must be methodical and precise. A systematic approach to identifying, developing, and evaluating a set of strategic plans to meet a learning project's goals is referred to as systematic planning.

3) Development
   During the development stage, the designer must refer to the outcomes of the two preceding stages and create a product for information transmission. The development step entails deciding on materials and media as well as assessing them.
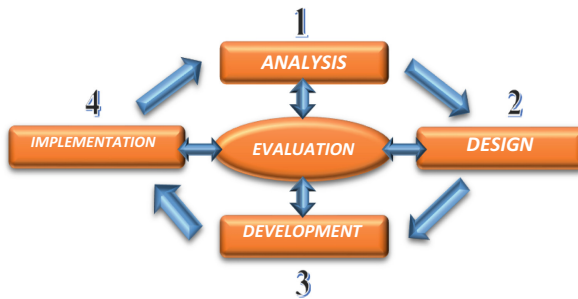

Fig. 1. ADDIE model.

4) Implementation

At this stage, the designer must take an active role. They must continue to analyze, redesign, and improve the quality of the resulting product to ensure that it is delivered efficiently.

5) Evaluation

At this stage, the designer must decide and evaluate whether the problems faced can be solved, whether the objectives can be achieved, what is the impact of the program and training, and what needs are needed in future programs and training (Fig. 1).

3   Research Methodology

This research is classified as R&D for the purpose of developing a specific product [17]. Data collection, data identification, data quantification, data description, and product creation were the stages used in this study. The software application is being developed in accordance with the target needs and learning objectives of the students. The respondents in this study were 39 D4 Finance students in the academic year 2020/2021. Information about students' needs was collected through questionnaires, personal interviews, data collection (collecting exam papers, textbooks, journals, and analyzing the data), observation (observing students in their classes), informal consultations with lecturers and students, and tests [18].

After that, descriptive analysis was used to examine the data. The results of the needs analysis were carefully summarized in order to improve understanding and share what had been discovered with others. The information gathered was identified, quantified, and described. The need analysis discussed in this paper covered the following items (Fig. 2).
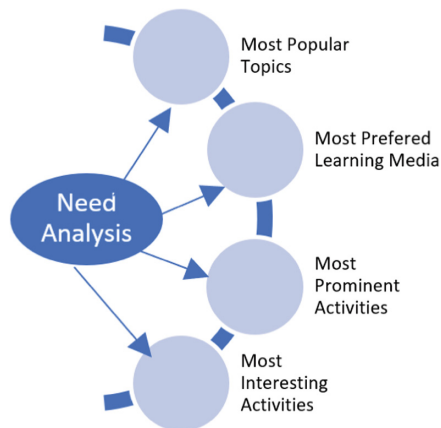
Fig. 2. Items in the need analysis.

4   Findings and Discussion

In April 2021, a requirements assessment was completed. The responders were 39 D4 Finance students enrolled in the 2020/2021 academic year. Questionnaires and interview guides were used as data gathering instruments. The following questions are included on the questionnaire sheet for the development of teaching materials:

1) How do students learn in the Appraisal course?
2) What learning materials would students like to use to help them learn the Appraisal?
3) How is the lecture strategy applied to the Appraisal course lecture?
4) Is the learning media that lecturers currently use accompanied by pictures, audio, or videos that are interesting and easy to understand?
5) What are students' suggestions for developing teaching materials to make it easier to understand the Appraisal course?

   While the interview guides contain the following questions:

1) How do students react to the classroom learning process based on their experiences and observations during the Appraisal course?
2) What are the obstacles in studying the Appraisal course?
3) How is the lecturing strategy applied to the appraisal course?
4) What are the learning materials that have been used in the appraisal course?
5) What is the scope of material in the appraisal course?

   The study's objectives also include a description of the students' target needs in the Appraisal course. What the learners need to know to perform in the target environment, what they already know, and what they need to know are all referred to as target needs. The purpose of the Appraisal learning course, the student's knowledge level, and the usage of Appraisal for the students' next profession are all part of the target needs analysis. The following is a description of the purpose, the student's knowledge level, and the usage of Appraisal in their next career.

   The results of the needs analysis revealed that 37% of students identified topics linked to property assessment as the skills to be developed. Topics linked to company value were chosen by 29% of students and personal property topics were chosen by 34% of students as the next skills to be improved. While data on student knowledge levels reveal that 77% of students admitted to not understanding this subject, 5% said they knew little (while interning at the assessor's office), and the remaining (18%) knew this subject since they had attended brief training on it.

   According to the results of the needs analysis, 86% of students believe Appraisal will be valuable in their next profession, 66% of students use Appraisal to assist their studies, and 34% of students use Appraisal to support their jobs. On the other side, 4% of the students said that Appraisal would be useless in their future employment. When students were asked to choose their favorite topic in appraisal course, the most popular topic was personal property, which was chosen by 56% of students, followed by company valuation (32%), and intangible assets (12%) (Fig. 3).
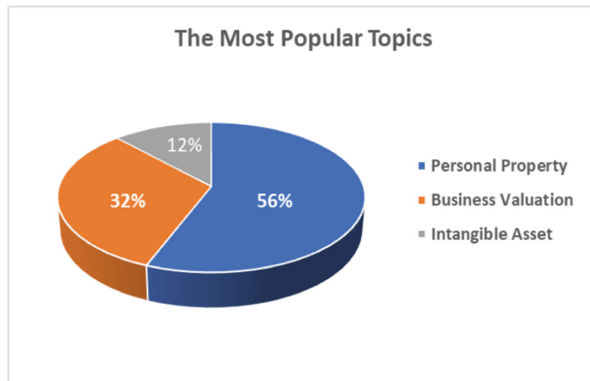
**Fig. 3.** The most popular topics.
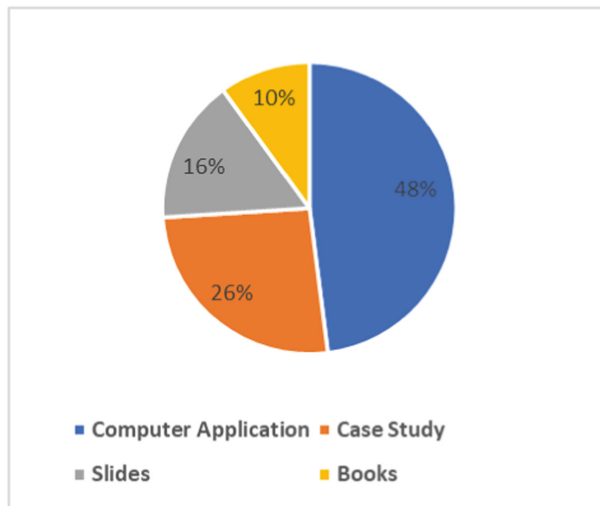

Fig. 4. The most preferred teaching media.

Students who are taking Appraisal courses desire a variety of learning media to assist them. According to the needs analysis, 48% of students prefer to use computer applications to assist them in learning this course (android applications and educational games are the most popular), 26% prefer case study discussions, 16% prefer slide presentations, and the remaining 10% prefer books (Fig. 4).

Peer group discussion is the most popular activity in learning appraisal, with 37% of students choosing it, followed by independent study with 33%, and field survey with 20% (Fig. 5).

The lecturer as a source of feedback is the most popular option, with 51% of students opting for it. A lecturer, on the other hand, is chosen by 49% of students as a tutor. According to the results of the needs analysis, 52% of students can learn Appraisal on
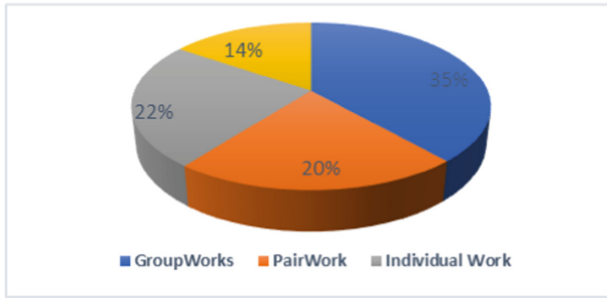
Fig. 5. The most prominent activity.
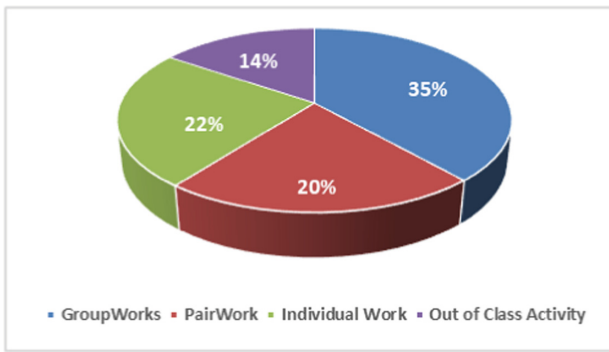
Fig. 6. The most interesting activity.

their own. However, 48% of students require assistance in their studies. According to the results from the need analysis, the most attractive activities were group work, which was picked by 35% of the students, followed by pair work (20%), individual work (22%), and extracurricular activities (14%). The activities in class, which were picked by only 9% of the students, were the least interesting (Fig. 6).

The study's findings also indicated that students demand learning resources that allow them to learn on their own. As a result, an Android-based software app for the Appraisal course is being developed.

5   Conclusion

The learner's learning needs refer to what he or she required to achieve in order to learn. It is focused on the learning process' approach and activities. The information concerning the topic, skills, input, process, lecturer role, learner role, and setting is presented in this phase. This study's findings can be summarized as follows: Students studying Appraisal have a specific goal in mind: to improve their appraisal skills. Students believe that mastering Appraisal will help them in their next employment, especially those who want to start their own business. The findings also suggest that the Appraisal course's learning

materials continue to rely on slide presentations/media PowerPoint and handbooks/e-book delivered either face-to-face or via e-learning. On the other hand, students like learning that employ a variety of learning media that allows them to study freely so they don't get bored, one of which is using Android-based applications. This android-based application is ideal for use as a learning aid to assist students in comprehending appraisal concepts. As a result, developing an android-based application as a learning aid for this Appraisal course is crucial, and it is expected to result in learning media that are creative, effective, and pleasant for students, as well as an increase in student motivation to learn. In Indonesia, 36.5% of people use an Android smartphone, as a result, students are already familiar with the system. Therefore, it is believed that android-based applications will be acceptable and successful in increasing student motivation.

References

1. Sengupta, E., & Blessinger, P. (2021). *New Student Literacies amid COVID-19: International Case Studies.* Emerald Group Publishing (p. 200).
2. Chan, R. Y., Bista, K., Allen, R. M. (2021). *Online Teaching and Learning in Higher Education during COVID-19: International Perspectives and Experiences* (p. 266). Routledge.
3. Kumar, A. V. S. (2017). *Optimizing Student Engagement in Online Learning Environments* (p. 338). IGI Global.
4. Shaik, B., Harinath, G. G., & Durga, P. B. (2020). Innovative and creative learning in covid-19. In: *Innovative Teaching and Learning Process during COVID 19* (p. 8).
5. Mahendra, I. G. B., & Wiyono, G. (2019). Evaluation model of the implementation of a quality management system of electrical skills in vocational high school. In: *Innovative Teaching and Learning Methods in Educational Systems* (pp. 59–66).
6. Castella, K. (2018). The research and design process. In: *Designing for Kids* (pp. 7–124).
7. Chen, W. K., Chang, J. R., Chen, L. S., & Hsu, R. Y. (2022). Using refined Kano model and decision trees to discover learners' needs for teaching videos. In: *Multimedia Tools Application* (pp. 1–31).
8. Churchill, D. (2017). Using digital resources for learning in a learning activity. *Digital Resources for Learning* (pp. 133–158).
9. O. E. C. D. OECD. (2015). Fostering new forms of learning for the 21st century. In: *Open Educational Resources* (pp. 39–46).
10. Shank, P. (2011). *The Online Learning Idea Book: Proven Ways to Enhance Technology-Based and Blended Learning* (p. 400). Wiley.
11. Nurdyansyah, N. N. (2019). *Media Pembelajaran Inovatif*.
12. Santoso, P. (2019). Pengembangan Media Interaktif Menggunakan Model Assure Untuk Membantu Guru Dalam Pembelajaran Fisika Tentang Alat Ukur Listrik. *Briliant: Jurnal Riset dan Konseptual*, *4*, 235.
13. Warjo, J., Soetisna, U., Muis, A. (2019). Implikasi Gaya Berpikir dan Interaksi Sosial Siswa pada Pembelajaran Model Kooperatif Berbasis Media Informasi dan Komunikasi Terhadap Prestasi Belajar Siswa. *Edubiologica Jurnal Penelitian Ilmu dan Pendidikan Biologi*, 6, 14.
14. Wu, Z., Zeng, Q., & Hu, X. (2009). Mining personalized user profile based on interesting points and interesting vectors. *Information Technology Journal*, *8*, 830–888.

15. Pakpahan, A. F., Ardiana, D. P. Y., Mawati, A. T., Wagiu, E. B., Simarmata, J., & Mansyur, M. Z. (2020). *Pengembangan Media Pembelajaran* (p. 182). Yayasan Kita Menulis.
16. Hoke, N. (2016). Are You Designing Online Training Or Online Instruction – Is It Addie Or Designing Backwards. In: *EDULEARN16 Proceedings.*
17. Hamzah, A. (2021). Metode Penelitian & Pengembangan (Research & Development) Uji Produk Kuantitatif dan Kualitatif Proses dan Hasil Dilengkapi Contoh Proposal Pengembangan Desain Uji Kualitatif dan Kuantitatif. *CV Literasi Nusantara Abadi* (p. 24).
18. Helaluddin, H. *Need Analysis of Academic Writing Teaching Model Based on Process-genre Approach: What Do They Need?*