Android-based shopping skill for mentally-disable student

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Article Info	ABSTRACT
	This study aimed to develop an Android-based learning media to improve shopping skills in retarded students. The research method was the design validation stage which is part of the research development. The instruments used in this study were (1) the practicality of the research product questionnaire, and (2) the validation sheet to measure the validity of the research product. The data analysis technique was to determine the average rating of research products, then the average was stated qualitatively in four categories which are very high, high, medium, and invalid. The results showed that the Android-based application media to support shopping skills has been validated by experts and practitioners in the good category.

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1. INTRODUCTION

The development of communication technology gave rise to various features with advantages such as smartphones, tablets, laptops, all of which have features that can be used to access the internet from anywhere and whenever. That advantage is utilized by the general public and even tends to depend on technological progress. This has an impact on the ease in human life to access information, ease in communicating, and used as an online shopping tool [1-4]. Nowadays, the phenomenon of buying and selling online is rife in society because it is triggered by the ease of getting information on goods to be purchased [5, 6]. Another thing that triggers the rise of online buying and selling in this community is because the results obtained are very large and the effectiveness and the system used is easier to conduct the transaction.

Individuals are considered mentally disabled if they meet two criteria, namely retardation or lack of adaptation of behavior and lack of adaptation to their environment is measured by the age level according to the calendar achieved by a child [7-10]. Characteristics of mentally disabled children in general experience weaknesses in thinking, but on the other hand, other abilities can still be developed especially those related to the skills area [11, 12]. This retardation includes communication, self-help, family life skills, social skills, habits in the community, self-direction, personal health and safety, functional academics, leisure and work [13-16]. Mildly retarded children have a level of intelligence (IQ) ranging from 50-70, in social adjustment or socializing less able to adjust to the wider social environment and able to do semi-skilled work [17, 18]. The fact, mentally disabled students are very difficult to understand the right way to shop [19]. Based on the results of learning in schools, 80 percent of mentally disabled students experience obstacles in understanding shopping so that they still get a value below of the Minimal Completeness Criteria (MCC) that has been agreed together at school. Developmental retardation which he bears should not be an obstacle as long as it is

not burdensome. Especially in the current digital 4.0 era, it needs interesting learning media so that it can be accepted by mild mentally disabled students in following technological developments.

Personal development programs are the most important things for learning mentally disabled students [20], one of the personal development for students with disabilities is in the form of shopping [8, 21, 22]. Because shopping is very important for the independence of important students in real life in the community. Developmental learners in understanding online shopping need special media that is easy to understand so they do not go out of date and of course, also can shop right both directly and shop online. The development of online shopping technology is growing rapidly and has entered all levels of society in Indonesia. Aside from being a communication tool, android mobile phone is also one tool that can be used to help various purposes including online shopping. The advantages of mobile phones, especially those based on Android are open source. Many can be used by this android-based mobile phone, where the completeness of the available applications can be used as desired by the user. Therefore, applications need to be developed that can run on the Android operating system.

The results of previous studies indicate that to improve students' skills in shopping, among others, they can use shaping techniques, the figure of media's, and iPad™-based picture with Book Creator [19, 23, 24]. Shaping technique is effective in improving shopping skills for mentally retarded students in grade V Primary of special School Putra Jaya Malang, this can be demonstrated through the existence of shopping skills before and after an intervention is given which changes the level from baseline to intervention by 54% [23]. Learning by using picture media shows that, on average, levels and trends increase from baseline to intervention, Latency analysis also shows that behavior changes occur in a relatively short time during the intervention [19]. iPad™-based picture with Book Creator software may be increased the participant's shopping skills within two of the three community locations, skill increases maintained after the intervention was withdrawn, and shopping skills generalized to two untaught shopping items, other than that Social validity surveys suggested that the participant's parent and staff favorably viewed the goals, procedures, and outcomes of the intervention [24].

In connection with this concession, it is necessary to develop an Android-based application to support the ability to shop for Mentally-Disable Student, so that the Mentally-Disable Student personal development program can be honed and be able to navigate the social life. For this reason, the main objective of this research is to develop an Android-based learning device to improve the ability to shop for Mentally-Disable Student.

2. RESEARCH METHOD

This study used design validation stages which are part of Research and Development [25, 26]. The purpose of this stage is to see the validity of the research product [25-27], where the product is an android application to support the ability to shop at Mentally-Disable Student. The subjects used in this study were one inclusion learning expert and six inclusion learning practitioners. The subjects used were taken purposively because they were adjusted to the research objectives by testing the validity of the research product.

The instruments used in this study were (1) the practicality of the research product questionnaire, and (2) the validation sheet to measure the validity of the research product. The validation sheet of research products in terms of learning media includes aspects of psychological aspects, organizational content, presentation, material accuracy, and visual principles [28]. The validation sheet of the research product in terms of material covers aspects of Conformity, Eligibility Aspect, Presentation Aspect, Linguistic Aspect, and Student Competency aspects [29-31]. while the practicality questionnaire covers aspects of students' pleasure or enthusiasm, aspects of ease of use of research products, and aspects of learning achievement goals [32]. The data analysis technique used is to determine the average rating of research products, then the average is stated qualitatively in four categories which are very high, high, medium, and invalid.

3. RESULTS AND DISCUSSION

This research is only at the design validation stage which is part of the development research. Material validation sheets and media validation sheets are provided to AM validators. This validator is a master of art and has a background as a supervisor of a special school in the city of Yogyakarta. The validator provides an assessment on each aspect of the assessment with a given score range of 1 to 10.

Data from the analysis of the validity product of research referring that very highly if average > 3.20, high if an average of between 2.40 and 3.20, high if an average of between 1.60 and 2.40, moderate if an average of between 0.80 and 1.60, if on average ≤ 0.80 the research product can be declared

invalid [30, 33]. Because the validation sheet for this assessment material ranges from 0-10 this criterion needs to be adapted as a Table 1.

The results of the research product validation are carried out by a team of experts to complete the validation that has been prepared. With this validation, it is expected (1) to provide an appraisal assessment of research products in the form of an Android App for the ability to shop for mentally disabled students, and (2) get input used to revise the research product. As for the results of the validation of the research, the product can be presented in Table 2.

Table 1. Validation criteria for media experts and material

Range	Criteria
9 – 10	Excellent
6 – 8	Good
3 – 5	Less
1 – 2	invalid

Table 2. Media and material validation results

Aspect	Score	Note
Psychological	8	Good
organizational content	8	Good
Presentation	9	Excellent
material accuracy	8	Excellent
visual principles	8	Excellent
Conformity	8	Good
Eligibility	9	Excellent
Presentation	9	Excellent
Linguistic	8	Excellent
Competency of student	8	Good
Average		

An application which interpreted as use. The term application at this time is familiar to us and is now mushrooming in our ears. Especially in the digital era at this time, all people from all walks of life know this app. From this term, it can be defined that the application is a program that has been cursed and used in carrying out an application function to run a particular system for the application service maker or the application service user for a particular purpose [34, 35]. Application in a computer term is a technique used in solving a problem with the process of solving data [36]. So that in the process of computerization applications are used to solve problems using techniques from an application's data. Nowadays people are increasingly able to enjoy and as users of this application because the application is easier to use and apply more effectively and efficiently.

This research product is an application "*Pintar Berbelanja*" (Smart Shopping). This application is based on Android so that this media is very interactive in explaining the meaning of shopping, type of shopping, offline shopping, and online shopping. Referring to the opinion that good and effective learning media are learning media that are tailored to the characteristics of the students faced [37-41], then the development of learning media in the form of a "*Pintar Berbelanja*" based Android application is adjusted to the characteristics of Mentally-Disable students. This application is accompanied by interesting pictures and sounds that can facilitate students to understand shopping. This application is based on Android and will be installed on students' handsets, so learning will also become more effective and faster. With this smart shopping android application, students can learn anywhere and anytime, so shopping learning becomes a fun lesson for mildly retarded students, so the learning process becomes better and the results of learning to shop either shopping directly or shopping online can produce maximum results by the minimum completeness criteria set in the school.

This Android-based application development product consists of three main components namely images, video, and audio. The image section serves to help the mentally-disabled student understand the concept of shopping material. The elements in the pictures and videos in this application are used to describe things more clearly so that the material to be conveyed to the mentally-disabled student who is the main target of the media can be conveyed properly and on target. Text and text in the application in the form of navigation buttons when the application is running to train students to be more familiar and accustomed to using information technology in the era of the industrial revolution 4.0 this ability must be owned by everyone from all walks so as not to be eroded by the times.

Based on the results of the validation of experts and practitioners of inclusion learning suspected application "*Pintar Berbelanja*" be fun, interesting and suitable for use as learning of media's to the mentally-disabled student. This is consistent with the results of a questionnaire submitted to the Mentally-Disable Student which states that all students look enthusiastic using the online shopping application, and the application is easy to use. This is because the developed media can touch most of the five senses such as the sense of sight, hearing, and touch. This is by the main characteristics of mentally disabled students, namely the sense of sight, hearing and touch are stronger when compared to other senses [42, 43]. An appropriate media in learning if properly utilized will be able to be used as a reliable educational medium compared to other media. Android-based media application called Smart Shopping is also able to

combine the benefits of various media ranging from text, images, sound, and animation and even games in digital units.

This application helps teachers to achieve learning goals to be achieved, this application helps students in supporting shopping skills. In connection with these results, it is suspected that this learning media is effective, efficient and makes the Mentally-Disable Student interested in learning the material so that shopping skills improve. The interest of mentally retarded students in learning can be seen from the results of student questionnaires that say the Smart Shopping application makes it easy and helps them to learn independently anywhere and anytime. The research product is in line with research conducted by those who claim that shaped media of iPad™-based picture with Book Creator software may be increased the participant's shopping skills [24]. Although the media used to improve shopping skills are different, in general, that the research products produced are ICT-based media.

4. CONCLUSION

Based on this research it was found that the Android-based application "*Pintar Berbelanja*" to support shopping skills has been validated by experts and practitioners in the good category. Developmental students who are used as research subjects said that the "*Pintar Berbelanja*" application is easy to use anywhere and anytime, applications can achieve learning goals that are skilled shopping, and mental retardation students are enthusiastic about using this application. To see whether the application media "Smart Shopping" is effectively used practically, it is necessary to do a field test on retarded students.

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