

## **BUKU DIGITAL PRAKTIK AKUNTANSI JASA (BUDIAJA) AS A LEARNING SUPPORT IN THE INTRODUCTION TO ACCOUNTING COURSE**

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### **Abstract**

*As one of the leading universities in Jombang, STIE PGRI Dewantara Jombang strives to provide the best possible service to all students with various abilities, including slow learners. A learning aid technology was created that makes it easier for students to carry out lectures, one of which is the Introduction to Accounting course. This activity aims to create learning aids technology to make it easier for students to absorb the lesson with the BUDIAJA application. This activity lasted approximately five months, from the preparation stage to the final evaluation of the activity. This activity involved the writing team, a professional software developer, 20 volunteer students, and educational technology consultants. From the activity results, it is known that the response given by students after using BUDIAJA was excellent and increased understanding. The follow-up plan for this activity is to develop the program to be applied to other courses.*

**Keywords:** BUDIAJA, assistive technology, Introduction to Accounting

## **A. INTRODUCTION**

### **1. Background**

Law No. 8 of 2016 Article 10 states that people with disabilities have the same right to obtain quality education and adequate accommodation as students. Persons with disabilities consist of everyone who has experienced physical, intellectual, mental, and sensory limitations for a long time and has difficulty interacting with the environment. Hence, people with disabilities need special aids, modifications, or specific techniques to make learning and actively participating in their environment easier.

According to education statistics data presented by the Central Statistics Agency (BPS) in 2018 as presented on the news page of the education financing service center of the Ministry of Education, Culture, Research and Technology (Puslapdik Kemdikbud) in 2021 shows that education for people with disabilities is still relatively low. There were 30.7% of persons with disabilities who did not finish school until secondary education. Meanwhile, people with disabilities who successfully graduated from university, only 17.6% of the total people with disabilities. In addition, the number of jobs for people with disabilities in the 2016-2019 period never grew by more than 49% (<https://puslapdik.kemdikbud.go.id/artikel/>)

Based on the data above, it can be seen that the level of education of people with disabilities is still relatively low. It also correlates with the level of absorption of the workforce of persons with disabilities. It is the concern of all elements of society, both government and private sector, to participate in caring and trying to overcome gaps in the social and educational fields for people with disabilities.

In Law No. 8 of 2016, there are various disabilities consisting of 5 categories. The five categories include: 1) physical, 2) intellectual, 3) mental, 4) sensory, and 5) multiple or multiple disabilities. Physical disabilities include amputation, paralyzed withers, paraplegia, cerebral palsy, stroke, leprosy, and small people such as dwarfism. Intellectual disabilities include slow learning and Down syndrome. Mental disabilities

include schizophrenia, bipolar, depression, anxiety, personality disorders, autism, and hyperactivity. Sensory disability consists of the blind, deaf, speech-impaired, and speech-deaf. Medium, multiple, or multiple disabilities are two or more disabilities carried by one person.

From the understanding of disability above, it appears that slow learning is one form of mental disability that is not widely understood. Intellectual disabilities can be distinguished based on intelligence level and adaptive behavioral functions (Law No. 8 of 2016). Based on the level of intelligence, intellectual disability is measured by the level of academic intelligence / Intelligence Quotation (IQ), namely: 1) Light Category for IQ 52-79, 2) Medium Category for IQ 36 – 51, and 3) Weight category for IQ 20 – 35.

Based on the function of adaptive behavior, intellectual disability can be divided into three. *First*, for the light category with its characteristics, it is challenging to meet academic demands and communication and social skills that begin to appear when entering school age. *Second*, the medium category, with characteristics of developing communication and social skills, experiences obstacles after reaching the age of children. *Third*, Weight categories with attributes of communication and social skills of persons with severe intellectual disabilities do not develop since childhood.

From the understanding of intellectual disability above, if examined further, without us realizing it, there are many around us, including in the university environment. In the college environment, there are still many students who, at first glance, seem normal. However, when faced with intellectual abilities, many of these students experience academic disabilities or slow learning (*slow learner*), especially those related to number solving, known as dyscalculia. Slow learner students struggle to do mathematical calculations, as in the Introduction to Accounting course.

Introduction to Accounting is one of the compulsory courses for Accounting students, including at STIE PGRI Dewantara. This course is given in the first semester for accounting majors. One of the basic skills needed to take this course is recording transactions. Recording transactions to presenting financial statements in the Introduction to Accounting course study requires expertise to register and sort transactions according to transaction events. Recording transactions begins with understanding the forecast number, journaling, transferring to the general ledger, presenting the balance sheet, and preparing financial statements. It is undoubtedly one of the obstacles for children with dyscalculia, so a learning model is needed so that dyscalculia children can be motivated to learn independently or *self-directed learning* (SDL). The SDL learning model is applied through an independent learning system that makes students more active and open in determining achievements. The right tool for helping children with special needs is called *Assistive Technology*. Some examples of technologies developed to help children with special needs are SIDoBi for deaf people and JAWS for blind people.

STIE PGRI Dewantara Jombang has students with diverse intellectual ability backgrounds. However, for the most part, these students, like most small private campuses in Indonesia, have students with medium abilities and tend to be weak in science or STEM subjects. This ability is also necessary to develop students' abilities, especially in courses requiring understanding, mathematical calculations, and recording transactions, such as the Introduction to Accounting course. This course is given to accounting students so they can prepare financial reports correctly and quickly, as well as a basis for taking advanced courses in the Accounting study program. Therefore, it

is necessary to design a learning system that is interesting and contemporary but still easy to digest so that the stigma of being difficult in the Introduction to Accounting course can disappear. This does not rule out the possibility of developing similar learning/lecture models for other subjects if this is done successfully.

## **2. Profile of STIE PGRI Dewantara Jombang**

STIE PGRI Dewantara Jombang is a private higher education in Jombang Regency. As a private campus with a medium category, STIE PGRI Dewantara Jombang is very aware of the intellectual abilities of its students. Most STIE PGRI Dewantara Jombang students come from nearby senior high schools and have moderate academic skills. Therefore, when they enter STIE PGRI Dewantara Jombang, students have been trained and emphasized on honing their soft skills and creativity to compete when they graduate from college and not be inferior to students from well-known campuses. STIE PGRI Dewantara Jombang seeks to hone the abilities of its students with various intellectual limitations through different soft skills implemented in its educational process.

## **B. LITERATURE REVIEW**

### **1. Dyscalculia**

Difficulty in learning numbers or mathematics, one of which is caused by the learning process at school being less successful, the presence of hemispheric dysfunction, which makes it difficult for someone to understand quantity, arithmetic, abstract numbers, numeracy, also known as dyscalculia (Zamzam 2019). Hanik (2020) explained that dyscalculia makes students have difficulty learning arithmetic, and their memory cannot be memorized well. Some of the statements above are also supported by Latifah (2021), who revealed that children who have difficulty understanding the concept of simple numbers, have difficulty counting, and lack understanding of number perception are called dyscalculia. Dyscalculia is a learning disorder in understanding numbers (Franz et al., 2021; Mammarella et al., 2018). Dyscalculia sufferers cannot read, imagine, and integrate experience and knowledge, especially in understanding story problems. Dyscalculia sufferers also cannot incorporate abstract phenomena because concrete explanations must be given to make them easier to understand. Dyscalculia consists of two types, namely, prognostic and diagnostic (Lambert et al., 2018; Dresler, 2018; Ribeiro & Santos, 2020). Proctagonistic includes difficulty learning numbers or mathematics in ordering and comparing numbers, while diagnostic dyscalculia is difficulty learning numbers or mathematics in understanding the concept of number operations. People with dyscalculia tend to fail academically and feel unable to learn (Demirel, 2021; Wangdi, 2021). Some of the characteristics of dyscalculia sufferers are relatively weak eyesight, so they have difficulty entering numbers into the right column; inability to order numbers; confusion about differentiating numbers that have similar shapes; difficulty understanding direction and time; difficulty calculating nominal amounts of money and estimating sizes and understanding number formulas. This is a fundamental ability needed to learn decision-making, including for undergraduate students.

### **2. Self-Directed Learning**

Self-directed learning is a learning model that considers students' freedom of style in learning, monitoring and evaluating their learning results independently (Rachmawati

2010). According to Hanik (2020), the concept of SDL learning is carried out on their initiative so that students become active and accessible to determine what they want to learn. Meanwhile, Novanda (2019) explains that SLD is a learning method students must use to absorb learning information independently through media.

### 3. Digital Literacy

Solving a problem requires information literacy skills using communication tools, such as social media or the Internet Novanda (2019). Hanik (2020) also revealed that digital literacy requires the ability to use software and operate digital devices related to complex motoric, cognitive, sociological, and emotional skills needed by students so they can function effectively in the digital environment. Another opinion, according to Marhamah (2021), is that digital literacy is not just about using media but is more about the ability to analyze, evaluate, or assess the information obtained.

## C. METHOD

A common problem faced by accounting students who are slow learners is difficulty recording transactions and presenting financial reports correctly, according to Financial Accounting Standards. The condition needs attention because the Introduction to Accounting course is the basic knowledge for taking other courses in the Accounting study program. For this reason, the writing team developed website-based learning media in consultation with professional program developers, namely PT Insan Scholar Media. The development of Android-based learning media using the self-directed learning method aims to provide alternative learning media that is easy and fun for students with dyscalculia. Apart from that, dyscalculic students can run applications independently, which motivates them to be more interested in learning.

The development model that will be used is the ADDIE (Analysis, Design, Development, Implementation, and Evaluation) development model developed by Reiser and Mollanda in 1967. So far, the ADDIE development model has proven successful in improving students' learning abilities (Molenda, 2015; Wijaya & Devianto, 2019).

1. Analysis (Analysis). At this stage, the main activity carried out by researchers is analyzing product development needs. This analysis is carried out by collecting and identifying information for product manufacturing purposes.
2. Design (Design). This stage is known as the product design stage. At this stage, the team starts by creating a product design, setting learning objectives, designing learning tools, searching for appropriate materials, and designing evaluation tools for learning outcomes.
3. Development (Development). Based on the product design in the previous activity, the researcher begins to realize the design into a product at this stage. The product will be ready to be implemented, and its level of success will be measured at the evaluation stage.
4. Implementation. At this stage, the product that has been developed will be implemented in an actual situation. The implementation in question is distributing applications that have been developed to users.
5. Evaluation (Evaluation). This stage is carried out to measure the achievement of the goals that have been planned in product development (Mollenda, 2015)

## D. IMPLEMENTATION

The development of assistive technology to make it easier for slow learner students to take the Introduction to Accounting course involves several parties, especially the Lecturer Team that teaches the Introduction to Accounting and Advanced Accounting courses. Nuri Purwanto, Ph.D., chairs this core team. The team also involved professional program developers, namely PT Insan Cendekia Media (PT ICN), located in Tulungagung.

Following the ADDIE stages that have been presented, the implementation of this activity is explained as follows:

1. At the analysis stage, the team holds a preliminary meeting to carry out activities. The implementation team divides tasks and determines students as volunteers. The team also collected information on the main problems in the Introduction to Accounting course. It is necessary for designing products.



Figure 1: Initial Implementation Team Meeting

2. At the Design stage, the implementing team begins to design the product. Mr. Feri Irfanto started developing the program in consultation with the software developer. The program design also involved lecturers who taught the Introduction to Accounting course. The program design still refers to the Semester Learning Plan for the Introduction to Accounting course.



Figure 2: Program Design Coordination Meeting

- At the development stage, the implementing team carries out the realization of the designed program. The team also intensively consulted with professional program developers, namely PT ICN and educational technology consultants. The implementation team also conducted an initial pre-test evaluation on 20 student volunteers.



Figure 3: Consultation with PT ICN

- At the implementation stage, the implementing team created web-based learning aids for the Introduction to Accounting course. This program is named Buku Digital Praktik Akuntansi Jasa (BUDIAJA). At this stage, trials were also conducted on 20 student volunteers for this program. At this stage, the products that have been developed will be implemented in real situations. The implementation in question is distributing applications that have been developed to users.

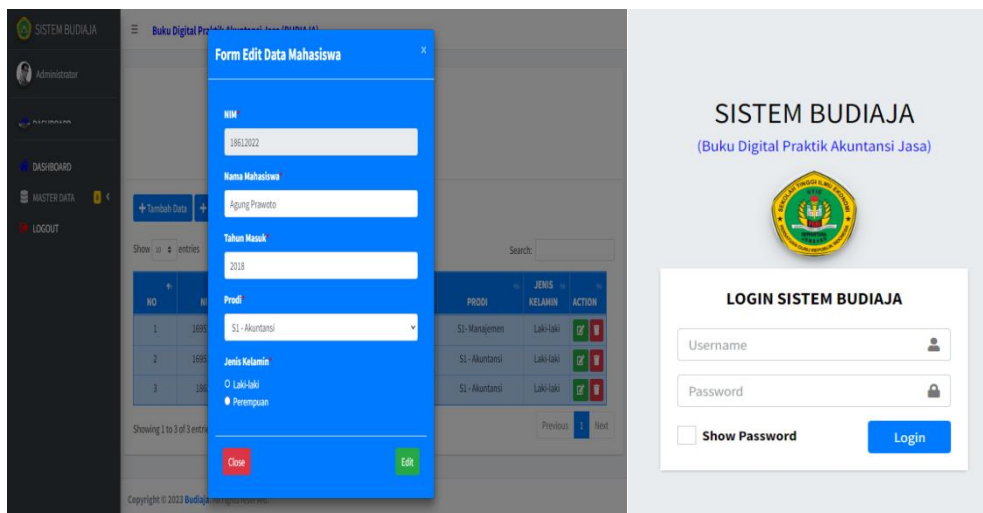


Figure 4: Several views of the BUDIAJA application

- At the Evaluation stage, the team evaluates the implementation of activities. This activity also aims to determine the extent of success in implementing the assistive technology program in the Introduction to Accounting course. From the evaluation results, it is known that the student response was excellent. Students stated that the

BUDIAJA application helped students complete calculations in the Introduction to Accounting course. With the Introduction to Accounting application, students can also study independently and not be fixated on lecture activities on campus.

## E. CONCLUSION

STIE PGRI Dewantara Jombang always strives to improve services to students. Various learning innovations are being developed, one of which is the creation of the BUDIAJA application to help students make it easier for students to understand the process of recording transactions, from journaling to preparing financial reports. From the BUDIAJA program trial results, an excellent response was obtained from students with slow learning abilities and average skills. These results become capital for the writing team to develop it to be better so that it can be used in other courses that also require mathematical calculations, such as financial management.

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