Development of Practical Learning for Virtual Business Simulation Courses in Business Administration Study Program at Medan State Polytechnic

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Abstract

This study aims to determine the virtual business simulation learning model and then to determine the virtual business simulation learning process design model used by students of the Medan State Polytechnic Business Administration Study Program. Data collection was carried out by making direct observations on Business Administration study programs, especially in classes with the practice of Business Simulation courses. In the second stage, the researcher conducted direct interviews with students, 5th semester Business Administration lecturers who taught the Business Simulation course in accordance with the learning process of the business simulation practice being carried out. Literature study by collecting data and information both from data on the implementation of business simulation courses that have been carried out and those that will be carried out and such as libraries, the internet, literature and previous research related to the problems encountered, researchers observed simulations of business offering practices in class, data analysis was carried out by tabulating data, and processing data by transcribing interview results, coding and interpreting them so that further concluded with a business simulation learning model. The result of the research is the development of virtual business simulation courses by imitating what has been madewww.moonsonsim.com, then carried out in 3 stages, namely: needs analysis, data collection, product design/virtual learning and virtual business simulation learning process design is carried out by: choosing Edmodo which will later be used as a virtual learning tool, preparing photos of learning materials, preparing pointers virtual teaching sentences, setting up virtual teaching creation tools

I. Introduction

Business trips in industries managed by human resources generally have knowledge, understanding of theory and practice regarding the business being run. As time goes by, which drives changes in advances in the use of technology, companies, in order to remain able to run a business, must keep up with changes in this era. This will help make the work of business people easier and also make business people understand the use of sophisticated technology.

Medan State Polytechnic has 6 departments and 23 study programs. One of the existing study programs is the business administration study program. The curriculum

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includes introductory business courses, business simulation, financial management, English, management, marketing, and others. From the curriculum it can be seen that students of the business administration study program are capable of handling secretarial, manager, finance, production, communication and other work. One course designed for students of the business administration study program is the business simulation course. In this business simulation course, students in 1 class are divided into 6 companies, 1 bank, and teaching staff act as cash consumers and credit consumers. Each company group consists of a manager, secretary, finance department, and goods control department. In the learning process in class, each company carries out a business simulation like in the company, consumers order goods from retailers and retailers send goods to consumers. Likewise, retailers order goods to agents and agents send goods to retailers and agents order goods to producers and producers send goods to agents. Likewise other simulations, for example the finance section records finances in cash receipts journals and cash disbursements journals, cash ledgers, accounts payable and receivable ledgers and others. The secretary makes petty cash reports, carries out telephone messages and others. The finance department routinely visits the bank to deposit and withdraw cash. That's the class situation in this business simulation lesson. Each company transacts business in one company, namely managers, secretaries, the finance department, and the goods control section do their job. Things like that happen in class in a business simulation lesson. To address this it is considered necessary to look for a learning model that can make it easier for students to stimulate business wherever they are.

The learning process has a variety of methods and media that can be used. At each turn of the academic year, various learning methods will appear which are considered more encouraging in increasing competency. Media will also experience development from conventional to technological. This media is needed to facilitate the learning process. In addition, learners / students will be more required to study independently. Indirectly preparing methods and media that can lead to more advanced competencies and increase creativity.

The development of learning media used today is better known as "e-learning" or "Digital or Virtual Learning Media". According to (Batubara, 2021) digital learning media is learning media that works with digital data or can produce a digital image that can be processed, accessed, and distributed using digital devices. The most common examples of digital devices are: computers, tablets, smartphones, digital cameras, digital clocks, and digital TVs. Some of these tools are often used to create and operate digital learning media.

The digital learning system was implemented because of the Covid-19 pandemic atmosphere which required distance learning. And besides that, the digital learning system will also be implemented more effectively in the classroom with digital business simulations. This system will continue to be used, and developed as much as possible so that students or lecturers can use it easily. One of the applications of digital learning media at the Medan State Polytechnic is "Digital Business Simulation". Digital business simulation is one of the courses with the application of digital learning (e-learning). Business simulation is deep business engineering which involves three main activities including preparation, implementation and evaluation.

The simulation flow takes place in parallel, and according to the scheme of the buying and selling process in several companies. This simulation process has attracted the attention of students, especially the business administration study program. The preparation of documents that were carried out during the simulation took place as one of the assessments in organizing digital archives. Learning models that are indirectly related,

and train skills in utilizing information technology that is growing in the corporate business world.

Based on the data, as well as the description above, the researchers took case studies related to the development of digital business simulation learning, and made observations in developing learning media. Seeing the existing developments, information technology is more in demand so that in the long term it will be used in spreading knowledge, training skills, and increasing creativity. Researchers are interested in taking the title: "Development of Practical Learning for Digital/Virtual Business Simulation Courses in the Business Administration Study Program, Medan State Polytechnic".

1.1 Formulation of the problem
The formulation of the problem of this research is:
1. What is the concept of virtual business simulation learning?
2. What is the model/design of the business simulation learning process used in the Medan State Polytechnic business administration study program?

1.2 Research Limitations
The limitation of this research is about learning methods and learning models for business simulation courses that are carried out virtually. This business simulation learning is limited only to business simulations carried out by managers, secretaries, finance departments, and goods control departments both internally and externally to the company, finally this research is limited to only three (3) stages: 1) potential problems/needs, 2) data collection, 3) product design/virtual learning

II. Review of Literature

2.1 Description of Theory
a. Definition of Business and Virtual Simulation
1. Business simulation
This course is business engineering on a microworld scale which involves three main activities integrally; includes: business conceptualization, business experimentation, and business reflection. Which engineering can be done optionally; at the business laboratory level or in the real field. So that students can experience a complete learning cycle; starting from developing solid business theories and hypotheses (cognitive & intellectual learning), then testing the effectiveness of these theories and hypotheses in the field (action learning), and finally re-examining and reflecting on the assumptions, attitudes that have plagued conceptualization and experimentation. carried out in order to obtain wiser business insights (emotional learning).

Simulation is defined by Harrell in Putra (2019) as "imitation of a dynamic system created using a computer model with the aim of evaluating and improving system performance". Simulation based on this understanding is a way to evaluate and improve a system that includes entities, activities, resources and controls through an imitation model created using a computer program. Simulation models are often created using programs specifically designed for modeling. In business simulation activities, students carry out business management practices, starting from conducting business planning, managing the legality of business establishment, conducting business management, financial management, HR, marketing, business management and evaluating business development.

According to Hidayatno and Halim in Muhammad (2010) Simulation game is a combination of two types of experiential learning methods, namely simulation which can imitate a behavior or process, and game which is a competitive activity. Combining formal teaching methods with simulation games can be a very effective method of learning.

b. Digital business simulation

Digital simulation is software that has the power to engineer original shapes with easy visualization. Another understanding of digital simulation is a teaching aid or system using digital implementation in data processing to produce an output (Maggie, 2016). Several goals of digital simulation, including (Maggie, 2016):

a. Instill sharing behavior (sharing) to others
b. Providing product ideas or explanations of other people's work through digital media devices.
c. Knowledge and skills for students to form creativity in creating information networks with other parties.

Business simulation training using MonsoonSIM (digital) conducted by previous volunteers has given positive results to participants, namely participants can manage a company including its resources, conduct long-term analysis for the company, and be able to analyze market needs and competitors. Simulation games can also motivate students through the material provided according to the curriculum, so as to create direct feedback received by students (Ariyani, 2020)

The concepts covered by MonsoonSIM include (Monsoon, 2011);

1. Fundamentals of business and economics
2. Management of business operations
3. Enterprise Resource Planning (ERP)
4. Logistics and Supply Chain Management (SCM) This is an important and fundamental concept that applies to trading, distribution, e-commerce, manufacturing, and service businesses.

b. Process Management Business simulation

According to Putra (2021:6) there are several business simulation management processes:

1. Identification Process. In this section, the business problem is defined, then the processes related to the business problem are identified. The output of this phase is a new/updated process architecture that provides an overall view of the processes within the organization and the relationships between them. Usually this phase is carried out in conjunction with performance measurement.
2. Discovery Process. In this section, the current state of each process is documented, in the form of the current process model.
3. Process Analysis. In this section, problems/issues in the as-is process are identified, documented and measured quantitatively. The output of this phase is a structured collection of issues, as well as settlement solutions.

c. Learning and Learning Process
1. Learning

To increase the knowledge and skills of human resources can be done by transforming the organization to become a learning organization (learning organization). Learning organizations are open systems organizations in a constantly changing environment that have different characteristics when compared to organizations that perform effectively. Educational organizations must strive to disseminate knowledge to all its members and students to develop

knowledge and skills in order to continuously improve the process of activities, replace outdated practices (poor practices) and minimize repetition in work. Improving the ability of members of educational organizations on an ongoing basis is needed to deal with very fast and turbulent changes.Yusuf,Adie E., 2008).

2. Learning process

The development of learning strategies is very important in knowledge management. Whereas in the field of management, in 1959, Peter Drucker already used the term "Knowledge Worker" (Ichijo and Nonaka, 2007).

The success of an organization, especially an educational organization, will have an impact on accelerating the learning process, both at the individual, group and organizational levels. The same is true for learning in college classes at universities. The success of learning in the college class has an impact on the process of forming or creating knowledge and skills that are fast and of good quality at the level of individual students (students), groups and classes. Furthermore, the success of this learning will be the key for students to gain competitive advantage in the labor market and the business world.

Characteristics in organizational learning always begins with independent learning efforts (*self-directed learning*) in the learning environment that influencescreativity, academic performance, future aspirations, curiosity, and student life satisfaction in the learning process (Edmondson et al; 2012) and will further influence learning in the work environmentreal (work-placed learning). The assumption about independent learning (self-directed learning) is that learning done in adulthood is more independent and autonomous. Organizational members must be driven by individual desires to make the organization in a better direction by developing their skills. For this reason, motivation, trust, multi-driven and leadership support are needed. Every member of the organization must function as a self-learner to meet rapidly changing work demands.

Individual learning outcomes are then transformed into organizational knowledge that can be accessed by all members as a form of organizational learning. Individual learning knows how to learn according to their needs and is always ready to face new challenges. However, in line with the rapid development of competition and the need for strategy development to obtain faster and more innovative business opportunities, the ability of all members of the organization is demanded. Individual learning must be developed into team learning within the organization (*team-based organization*). Many benefits can be obtained from learning teams, namely the opportunity to do self-management (Umi Rusilowati, 2013), high participation and division of tasks and responsibility for the entire task.

d. Learning Process Design Business and Virtual Simulation

Table 1. Business Simulation Learning Process

Persiapan	Pelaksanaan	Evaluasi
• pengajar bertindak sebagai produsen dan konsumen dari pedagang pengecer	• overview seluruh mata kuliah yang berhubungan dengan simulasi bisnis • membagi siswa dikelas menjadi 6 kelompok • membuat dokumen	• pengajar akan menilai setiap mahasiswa berdasarkan kualitas dari: 1.Akuntansi 2. surat-surat yang dibuat 3. sistem administrasi yang dipakai 4. peran aktif mahasiswa 5. kerjasama dengan anggota kelompok 6. Inisiatif dalam kelompok

2.2 Previous Research

Literature review or previous research is carried out with the aim of comparing research conducted with previous research. In previous research, there were several results related to customer service which were used as a reference for this research and are summarized in the following table:

Table 2. Previous Research

Researcher Name	**Yananto Mihadi Putra**
Research Title	Cycle Analysis of Business Process Management at PT Indofood Sukses Makmur Tbk
Research Year	2021
Research Resources	PT Indofood Sukses Makmur Tbk
Research result	1 The inclusion of internal audit into the organizational structure of the company. This aims to evaluate the effectiveness of Indofood's internal control system, ensuring that all procedures have been carried out in accordance with regulations and on time. Ensuring the reliability of operational and financial information and compliance with company regulations and policies. company can be achieved properly, effectively and efficiently.
Researcher Name	**Alfine Putra Mulyadi**
Research Title	Development of Tsunami Disaster Simulation Information Media
Research Year	2019
Research Resources	BMKG Bandung
Research result	From this research it was analyzed that the product developed was in the form of a Digital Simulation e-learning portal based on an analysis of conditions and learning potential. The effectiveness of increasing learning abilities using the Digital Simulation e-learning portal has an 87% increase in learning outcomes before and after the product is used. The level of product efficiency is determined, based on the concept of learning time, rationally based on the time used and the time needed the result is 1.3> 1, then the product is efficiency.
Researcher Name	**Pippin Farida Ariyani**
Research Title	Virtual Business Simulation at Budi Mulia Vocational School
Research Year	2020
Research Resources	Budi Mulia High School
Research result	This virtual business simulation training activity has provided experience to Budi Mulia Vocational School students in managing finance, procurement, retail, warehouse and production in a company using a cloud base system application, namely the MonsoonSIM simulation game.
Researcher Name	**Mohammed**
Research Title	Business simulation game designshuttlecock company as a tool for industrial engineering design practicum

Research Year	2010
Research Resources	PT. Jago Jaya, Solo
Research result	This business simulation game was developed using Stella software version 9.1.3 and Ms. Excel can be used as a tool for PTI practicum for the 2010 period. A computer-based business simulation game designed to increase students' understanding of the process of buying, producing, selling and finance in shuttlecock companies.

III. Research Method

The type of research used is research and development or Research and Development (R&D). Research and development methods or Research and Development (R&D) is a series of processes or stepssteps in the context of developing a new product or perfecting an existing product so that it can be accounted for. In carrying out research and development, there are several methods used, namely methods: descriptive, evaluative, and experimental (Trianto, 2011).

In general, the research and development steps used in this study are: 1) determining potential/needs 2) data collection, and 3) designing a virtual business simulation learning development model

IV. Result and Discussion

The development research process in this research is divided into 3 parts:

4.1 The process of identifying problems
Before developing practical learning for virtual business simulation courses, the initial stage that is carried out is analysis, this activity is in the form of analyzing the problems encountered in the learning process for business simulation courses.

Identification of problems is based on the Semester Learning Plan (RPS) as a reference in conducting teaching, business simulation CPMK (Match Learning Outcomes) is being able to integrate competencies obtained from prerequisite courses correctly and appropriately and apply them in office situations and work in a team work.

Next, identification of the next problem is carried out from each role that will be played by students when carrying out business simulation practices, the roles are divided as follows:

Table 3. Identification of Problems

No	Roles	Problems
1	Producer (Lecturer)	1. Adjust the topic of the actual simulation according to the current state of the company
		2. Make templates that will be used by students according to their respective roles
		3. Create a workflow that is systematic and easy for students to understand
2	Agents (Lecturers and students)	1. Make adjustments to the topics that have been determined
		2. Can carry out roles according to those in the actual company
	Manager (Lecturers	1. Make adjustments to the topics that have been determined

	and students)	
		2. Can carry out roles according to those in the actual company
	Finance (Lecturers and students)	1. Make adjustments to the topics that have been determined
		2. Can carry out roles according to those in the actual company
	Administration (Lecturers and students)	1. Make adjustments to the topics that have been determined
		2. Can carry out roles according to those in the actual company
	Supplies (Lecturers and students)	1. Make adjustments to the topics that have been determined
		2. Can carry out roles according to those in the actual company
3	Department Store (Lecturers and students)	1. Make adjustments to the topics that have been determined
		2. Can carry out roles according to those in the actual company
	Manager (Lecturers and students)	1. Make adjustments to the topics that have been determined
		2. Can carry out roles according to those in the actual company
	Finance (Lecturers and students)	1. Make adjustments to the topics that have been determined
		2. Can carry out roles according to those in the actual company
	Administration (Lecturers and students)	1. Make adjustments to the topics that have been determined
		2. Can carry out roles according to those in the actual company
	Supplies (Lecturers and students)	1. Make adjustments to the topics that have been determined
		2. Can carry out roles according to those in the actual company
4	Credit Consumers (Lecturers)	1. Make adjustments to the topics that have been determined
		2. Can carry out roles according to those in the actual company
5	Simulation Bank (student)	1. Make adjustments to the topics that have been determined
		2. Can carry out roles according to those in the actual company

After identifying the problem, it can be simplified to:
1) Adjust the topic of the actual simulation in accordance with the current state of the company
2) Create a template that students will use according to their respective roles, create a workflow that is systematic and easy for students to understand
3) Able to carry out roles in accordance with those in the actual company

**4.2 Data Collection Process**
Data collection was carried out by interviews and group discussions, which were attended by students and lecturers of the Business Simulation course, the purpose of these interviews and discussions was to find the most appropriate answers to the problems that had been previously identified.

The results of the interviews and discussions in overcoming the three problems above it was decided to make some adjustments referring to current developments in the business world, sources for these adjustments were taken from websites that provide simulation teaching such as www.moonsonsim.com. After observing the teaching of business simulations conducted by moonsonsim together, it was concluded to be able to follow this pattern in teaching business simulations at the Medan State Polytechnic Business Administration Study Program.

4.3 Creating a Learning Development Design

The design that will be made in the development of business simulation learning is to practice virtually using the Edmodo software/application, while the reason for choosing Edmodo is because it can follow patterns such as those found on moonsonsim.com.

Below you can see a description of the simulation business learning activities that were created virtually using the software above.
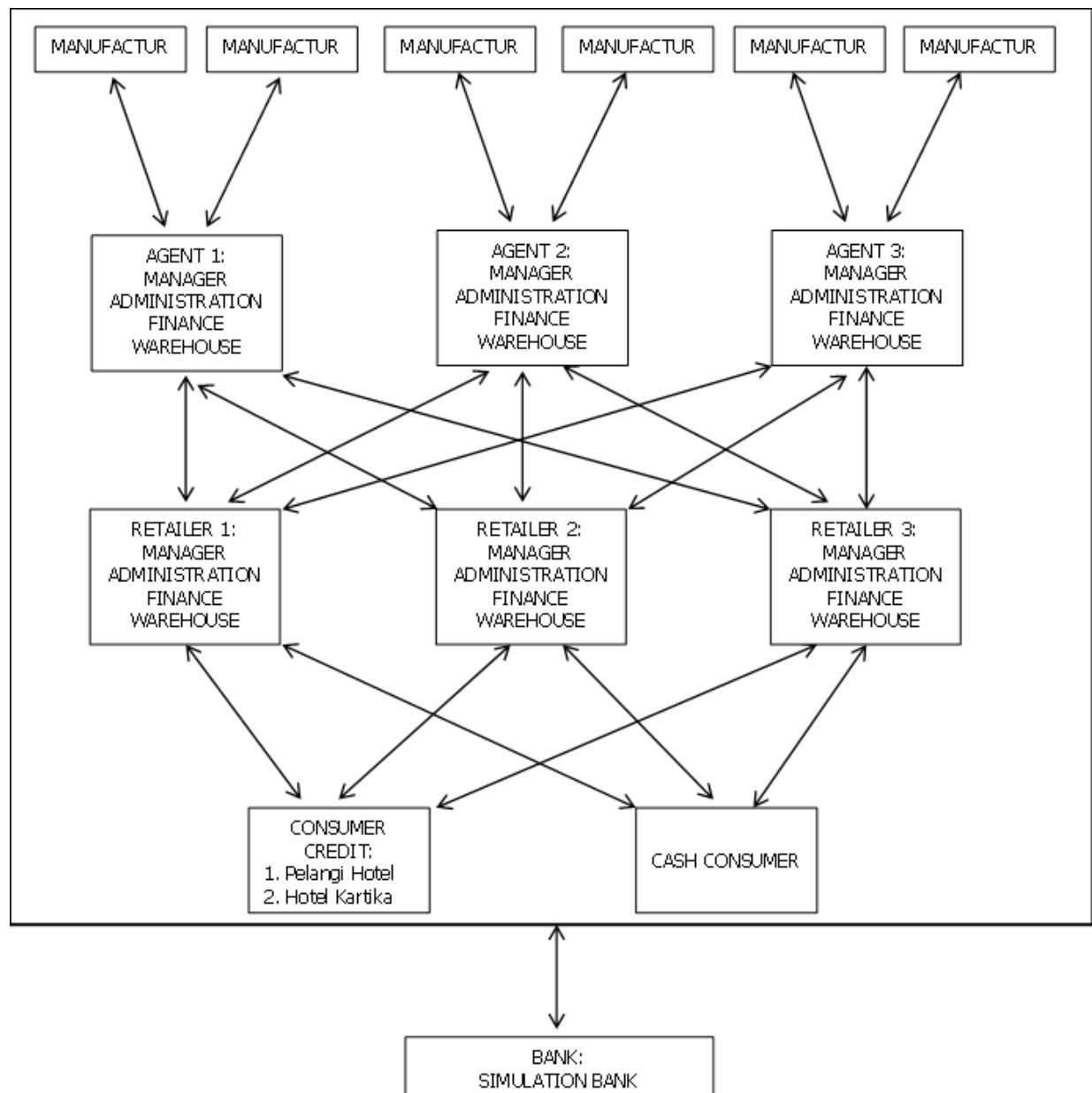
4.4 Discussion

The development of practical learning for business simulation courses virtually will be carried out with Edmodo for the following reasons: 1) it can be used for free 2) the user interface is simple and relatively easy to use even for beginners 3) compatibility, Edmodo supports previews of various types of file formats such as: pdf , pptx, html, etc. 4) Edmodo can not only be accessed via a PC (Laptop/desktop) but can also be accessed using Android-based gadgets.

The initial step prepared in compiling virtual learning on the topic of petty cash management is preparing teaching materials that will be converted into virtual form, as follows:
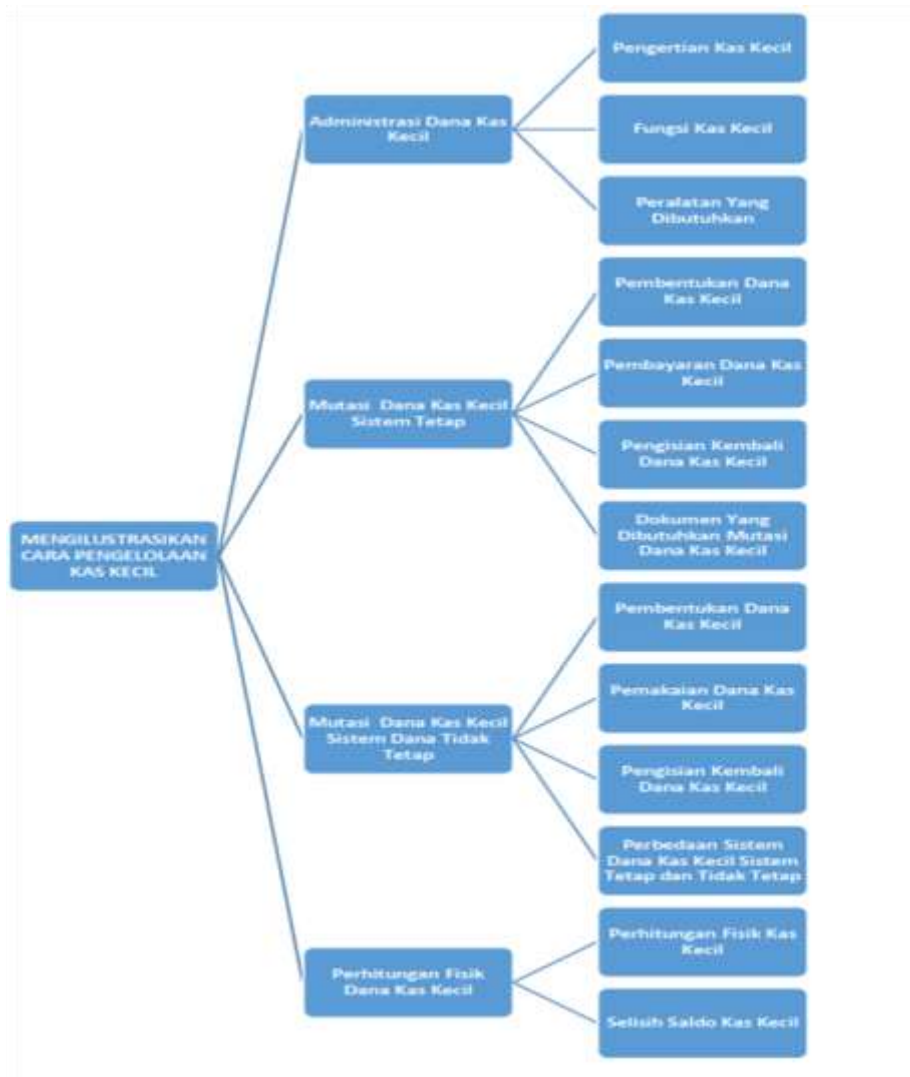
Contoh Bukti Pengeluaran Kas (BPK/BKK) yang dibuat Bagian Utang

PT. Delta Solusindo			
Bukti Pengeluaran Kas		Nomor CK : 701	
		Tanggal : 05-07-2018	
Dibayarkan kepada : Pemegang Dana Kas		No. Akun	Jumlah
Jumlah Uang : Rp. 10.000.000		1.102	10.000.000
Cek No. CD. 03241			
Sepuluh Juta Rupiah			
Untuk Pembayaran : Pembentukan Dana Kas Kecil			
			10.000.000
	Dibayar:	Diterima	
Bagian Utang	Bagian Kasa	Pemegang Dana Kas Kecil	
(ttd)	(ttd)	(ttd)	
Mohammad	Amin	Maulana	

V. Conclusion

The conclusions of the research are:

1. Development of virtual business simulation courses by imitating what has been madewww.moonsonsim.com, then carried out in three (3) stages: 1) needs analysis, 2) data collection, 3) product design/virtual learning.

2. The design of the virtual business simulation learning process is carried out by: 1) choosing Edmodo which will later be used as a virtual learning tool 2) preparing photos of learning materials 3) preparing virtual teaching sentence pointers 4) preparing virtual teaching making tools.

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