

ISBN :



CONFERENCE PROGRAMS AND ABSTRACT

**ADVANCING SUSTAINABLE SCIENCE AND TECHNOLOGY
THROUGH EFFECTIVE COLLABORATION**

OCTOBER 20-21, 2021

**Palembang, Province of South Sumatera
Indonesia**

Organized By :



FOREWORD FROM GENERAL CHAIR 5th FIRST 2021 INTERNATIONAL CONFERENCE



Assalamu'alaikum wr wb,

Alhamdulillahirrobbil 'alamin, Thank to the God, almighty, due to His bless and love, we are granted good health and opportunity so that we can meet here in the event of the 5th FIRST and the 3rd SNAPTEKMAS 2021.

The honorable keynote speakers of the 5th FIRST and the 3rd SNAPTEKMAS 2021

Dra. Nana Yuliana, MA., Ph.D., as The Indonesian LBBP Ambassador for the Republic of Cuba, concurrently with the Commonwealth of the Bahamas, Jamaica, the Dominican Republic and Haiti

Prof. Ramaraj Boopathy. from U Alcee Fortier Distinguished Service Professor of Biological Sciences At the Nicholls State University, USA

Dr. Ing. Ahmad Taqwa, the Director of State Polytechnic of Sriwijaya.

The honourable keynote speakers, distinguished guests, all participants, ladies and gentlemen,

For the beginning of my speech, let me welcome all of you with my great warm hug. It is a great honor for me that you choose the 5th FIRST and the 3rd SNAPTEKMAS 2021 as your conference. I am so proud that the authors still become enthusiastic to develop the knowledge although in this pandemic situation. Let us still work hard to support the development of the world through the research, science, and technology in many parts of the knowledge, as what has been purposed by the FIRST conference itself.

In this occasion, I would like proudly to inform you that the 5th FIRST and the 3rd SNAPTEKMAS 2021 as the forum to share knowledge, to search, to find, and to enlarge the link with other industries and universities has attracted so many authors from abroad, such as from: Politeknik Tun Syed Nasir Syed Ismail; MARA University; Politeknik Mukah Sarawak; University Sultan Zainal Abidin, Terengganu, Malaysia; Politeknik Melaka (PMK) Malaysia; Iloilo Science and Technology University (ISAT-U) Philipina; Politeknik Kota Kinabalu; Universiti Teknologi Malaysia; The National University of Malaysia; National Chin-Yi University of Technology (NCUT); Accounting Research Institute UiTM-Malaysia; Management and Science University Malaysia; AlBaha University, KSA, Saudi Arabia; Politeknik Melaka (PMK), Malaysia; Kuantan Community College, Pahang, Malaysia; Universiti Brunei Darussalam; and Ferdowsi University of Mashhad, Iran.

Welcome to all of the researchers that become the collaborators in our research and community service. It is our great honour to have you as our collaborators and participants in the 5th FIRST and the 3rd SNAPTEKMAS 2021.

The honourable keynote speakers, distinguished guests, all participants, ladies and gentlemen,

In this chance, I would like to say thank you very much to the Director of State Polytechnic of Sriwijaya for his full support in the development of the Research and Service Community programs. Due to his hard work and his belief to all of the committee so that this event can be held.

In this occasion, I also would like to convey my big thank to all of the keynote speakers, invited guests, all the participants, all reviewers, and all committee of the 5th FIRST and the 3rd SNAPTEKMAS 2021. Without you all, this event will be nothing. May Allah SWT gives His reward for your sincerity. As the time goes by, it is hoped that our cooperation and coordination in the FIRST and SNAPTEKMAS can be maintained and improved. I hope that you can enjoy this conference and can get a big benefit from this event. I also wish that we can meet again in the forthcoming FISRT ad SNAPTEKMAS

Wassalamu'alaikumwaraahmatullahi wabarakatuh

FOREWORD FROM DIRECTOR OF STATE POLYTECHNIC OF SRIWIJAYA



The honorable, FIRST 2021 and SNAPTEKMAS 2021 keynote speakers,

Dra. Nana Yuliana, MA., Ph.D., as The Indonesian LBBP Ambassador for the Republic of Cuba, accredited to the Bahamas, Republic of Dominican, Republic of Haiti and Jamaica

Prof. Ramaraj Boopathy., from U Alcee Fortier Distinguished Service Professor of biological sciences at the Nicholls State University, USA

Dr. Ing. Ahmad Taqwa, MT., as Director of Politeknik Negeri Sriwijaya

Assalamualaikum wr wb,

Let us extend our gratitude to Allah SWT, the most gracious, the most merciful. Due to His bless, we can gather here, at the Opening Ceremony of the FIRST 2021 and SNAPTEKMAS 2021

First of all, Please let me deliver my warm welcome to all keynote speakers and all participant of FIRST 2021 and SNAPTEKMAS 2021. It is my great pleasure to meet and see you in this event.

Although, there are so many obstacles that should be faced in the pandemic situation, however, as young generation, we should be optimistic, stay strong and be active in searching and finding the solution. The FIRST 2021 and SNAPTEKMAS 2021 as the DIES of State Polytechnic of Sriwijaya annual event will become one of the media to support those activities. The researchers could share knowledge, find partners, and enlarge the collaboration through this event.

Based on the change in the model of the teaching learning activity that focuses on the MERDEKA BELAJAR, State Polytechnic of Sriwijaya has a big desire in getting acceleration in the internationalization of the institution. One of them by improving the overseas and industrial collaboration, especially in joint research and joint publication. In the beginning of 2021, the research and community service unit in Politeknik Negeri Sriwijaya has launched new schemes of research and community service, namely the Overseas Collaboration Research and Overseas Collaboration Community Service. Thanks to God, those schemes have attracted researchers not only from Asia but also several other countries outside Asia, such as: research and community service collaboration with Al Baha University from Saudi Arabia, with Ferdowsi University of Mashhad from Iran, and with Princess Sumaya University of Technology from Jordan, as well as several other foreign universities.

In this occasion, I also would like to welcome all the researchers that become the collaborators in our new scheme of research and community service. It is our great honour to have you as our collaborators.

The honourable participants,

At this time, State Polytechnic of Sriwijaya has held 5 times of FIRST. FIRST publications from previous conferences have been successfully indexed not only in SCOPUS, but also in WOS. This 5th FIRST seminar will be conjugated with the 3rd National Seminar on Community Service SNAPTEKMAS. (National seminar of applied technology for public). All of these are the efforts to improve the quality of Polsri lecturers which significantly have a positive effect on the learning process of Polsri students.

Before ending my speech, I would like to congratulate the participants of The FIRST 2021 and SNAPTEKMAS 2021. May the noble efforts, support, and cooperation of researchers in this conference will continue. Special thanks to the organizer and co-organizer committee of The FIRST 2021 and SNAPTEKMAS 2021 for the hard work and the commitment in realizing this conference. Do maintain the spirit of working in a team and continue to unite in order to display a culture of excellence in the eyes of the country and the world.

With Bismillahirrahmanirrahim, I officiate The FIRST 2021 and SNAPTEKMAS 2021.
Wassalamu'alaikum warrahmatullahi Wabarakatu

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KEYNOTE SPEAKER



Prof. Ramaraj Boopathy

Alcee Fortier Distinguished Service Professor of biological sciences
at the Nicholls State University, USA

Fulbright Scholar Fulbright Senior Specialist World Class Professor-Government of Indonesia. Honorary Visiting Professor, ITB, Indonesia Alcee Fortier Distinguished Service Professor John Brady Endowed Professor in Biological Sciences Nicholls State University Business Address: Alcee Fortier Distinguished Service Professor John Brady Endowed Professor in Biological Sciences Department of Biological Sciences Nicholls State University Thibodaux **EDUCATION:** B.Sc. Zoology, University of Madras, India; 1979 M.Sc. Environmental Biology, Tamil Nadu Agricultural University, India; 1981 Ph.D. Environmental Biology, University of Madras, India; 1986 **UNIVERSITY RESPONSIBILITIES:** Responsibilities include Teaching Environmental Biotechnology, a Senior and Graduate level course, Marine and Environmental Biology (Graduate Course), Microbiology and Environmental Biology courses. Research interests include Bioremediation of Hazardous Chemicals and Anaerobic Microbiology. Service includes advising students, participate in Departmental and University committees and serving the local and regional communities. Advisor to Masters Program in Marine and Environmental Biology. **PROFESSIONAL EXPERIENCE:** January 2013 – Present: John Brady Endowed Professor in Biological Sciences, Department of Biological Sciences, Nicholls State University, Thibodaux. Teaching, Research, and Service to the University and Community. August 2012 – Present: Alcee Fortier Distinguished Service Professor, Department of Biological Sciences, Nicholls State University, Thibodaux. Teaching, Research, and Service to the University and Community. August 2004 – Present: Distinguished Service Professor, Department of Biological Sciences, Nicholls State University, Thibodaux. Teaching, Research, and Service to the University and Community. **MAJOR AREAS OF RESEARCH INTERESTS:** Anaerobic digestion, Composting, Biodegradation of hazardous chemicals. Antibiotic resistant bacteria and Antibiotic resistance genes in the aquatic ecosystem. Isolation and identification of novel bacteria. Anaerobic degradation of explosive chemicals with particular reference to sulfate reducing bacteria. Design and development of biological reactor systems. Microbial immobilization of

heavy metals and radionuclides. Alcohol production from agricultural residues. Water quality in the wetlands. Alternative to sugarcane burning, Biological control of termites. Organic ways to control land loss and coastal restoration.

KEYNOTE SPEAKER



Dr. Ing. Ahmad Taqwa, MT.

Director of Politeknik Negeri Sriwijaya Indonesia


Director of State Polytechnic of Sriwijaya, other than that, he is still active at Head of The Research and Publication Commission Forum Director of State Polytechnical In Indonesia, Founder of The Online Journalist Board (IWO) Sumsel, Chairman of The Advisory Board of UKM Nusantara Palembang and Assessor of Higher Accreditation Board. **EDUCATION:** Diplom Ingenieur Electrical Engineering HTL, Ingenieurschule Beider Basel, Switzerland; 1994, Magister (2005) and Doctoral (2010) at Electrical Engineering, Bandung Institute of Technology, Indonesia. **RESEARCH:** Head of Research Assignment “Mini PLTS Periodic Cooling System to Overcome Overheating in Palembang City” (2019), Member of The Research Assignment “Effects of Sea Salt Dust Collection on Output Loss and Solar Panel Output Efficiency” (2020), and Head of Research Assignment “Design and Build of Wireless Sensor Network Prototype Detection Of Landslides Based on IOT and LORA” (2020). **DEDICATION:** “The Design and Evaluation of Virus Scan in The E-Mail System in SMA N 5 Palembang” (2018), Assignment Service “Utilization of WSN Technology in Parking Air Monitoring Foundation SMP Harapan Mulia Palembang” (2019), Development of Teaching Materials with Interactive Multimedia with Education Game for Harapan Mulia Junior High School Students” (2020). **AWARD:** Certificate In Participating In The 200 Hour Advanced Technical Teacher Training awarded by FONTYS and PEDC (1998), Satyalancana Karya Satya X Year 2011 And Satyalancana Karya Satya XX Year 2017 by The President of The Republic of Indonesia. **WORKSHOP:** Seminar and Focus Group Discussion Forum The Rector of Indonesia “Economic Stability In The Vuca Area”, Ujung Pandang (2020), Workshop on Using Integrated Resources Information System Applications For Lecturers of State Polytechnical Polytechnic, Palembang (2019) And Workshop of Learning Methodology of Polsri Lecturers and Outside Education Domicile (PDD) as a Source Person, Palembang (2019).

RUNDOWN
The 5th FIRST 2021 INTERNATIONAL CONFERENCE
(FORUM IN RESEARCH SCIENCE AND TECHNOLOGY)
SNAPTEKMAS (Seminar Nasional Aplikasi Teknologi pada Masyarakat) 2021
Palembang, South Sumatera, Indonesia
Thursday, October 21, 20201

| | | Thursday, October 21, 20201 | | | |
|-----------------|---|---|----------------------|--------------------------------------|--------------------------------------|
| No. | Session | Person in Charge | Time Allotment (WIB) | Liaison Officer | |
| 1. | Registration | Event Section Committee | 07.00 – 08.00 | Doeslohal Djumrianti, S.E.MIS., Ph.D | |
| 2. | The Opening Ceremony | | | | |
| 3. | Do'a | | | | |
| 4. | Indonesian National Anthem | | | | |
| 5. | Chair Report Speech | Event Section Committee | 08.00 – 09.00 | | |
| 6. | Speech and Opening Remarks by Director of State Polytechnic of Srwijaya | | | | |
| 7. | Souvenirs Gift, Group Photos | | | | |
| PLENARY SESSION | | | | | |
| No. | Keynote Speaker | Affiliation | Time Allotment (WIB) | Moderator | Liaison Officer |
| 1. | Dra. Nana Yuliana, MA., Ph.D. | The Indonesian LBBP Ambassador for the Republic of Cuba, concurrently with the Commonwealth of the Bahamas, Jamaica, the Dominican Republic and Haiti | 09.00 – 10.00 | Tiur Simanjuntak M.Pd. | Doeslohal Djumrianti, S.E.MIS., Ph.D |
| 2. | Prof. Ramaraj Boopathy | Alcee Fortier Distinguished Service Professor of biological sciences at the Nicholls State University, USA | 10.00 – 11.00 | Prof. Hasan Basri | Dr. Nyayu Latifah Husni, M.T. |
| 3.. | Dr. Ing. Ahmad Taqwa, MT. | Director of Politeknik Negeri Sriwijaya, Indonesia | 11.00 – 12.00 | Jaksen M. Amin, M.Si. | Dr. Martha Aznury, S.Pd., M.Si. |

PARALLEL SESSION

| No. | Theme | Room | Time | Moderator | Articles |
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| 1. | TRACK 1 (Engineering and Science) | 1 | 13.00 – 16.00 | Dr. Eng Tresna Dewi, M.Eng./ Ika Sulianti, ST, MT | 15 |
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| 3. | TRACK 1 (Engineering and Science) | 3 | 13.00 – 16.00 | Fatahul Arifin, M.Eng, Ph.d./ Dr. Indrayani, S.T., M.T. | 13 |
| 4. | TRACK 2 (Computer Science, Computer Engineering, Information System, Informatics Management) | 4 | 13.00 – 16.00 | Rika Sadariawati, M.Si./ M.Miftakul Amin, S.Kom., M.Eng | 13 |
| 5. | TRACK 2 (Computer Science, Computer Engineering, Information System, Informatics Management) | 5 | 13.00 – 16.00 | Dr. Nyayu Latifah H, MT./ Lindawati, S.T., M.TI | 12 |
| 6. | TRACK 3 (Social Science) | 6 | 13.00 – 16.00 | Doeslohah Djumrianti, S.E.MIS., Ph.D/ Dr. Marieska Lupikawati | 13 |
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| 9. | SNAPTEKMAS 2 | 9 | 13.00 – 16.00 | Leni Novianti, M.Kom./ Maivi Kusnandar, M.Kom | 15 |
| 10 | SNAPTEKMAS 3 | 10 | 13.00 – 16.00 | M Husni Mubarak, M.Si./ Martinus Mujur, ST, MT | 15 |
| 11 | SNAPTEKMAS 4 | 10 | 13.00 – 16.00 | Dr. Ade Silvia H, MT./ M. Sopian Soim, ST, MT | 13 |



CLOSING SESSION

| Event | Time | Room |
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| <ul style="list-style-type: none">- Closing Ceremony- Announcement of:<ol style="list-style-type: none">1. Best Paper FIRST IC 20212. Best Paper SNAPTEKMAS 20213. Best Presenter FIRST IC 20214. Best Presenter SNAPTEKMAS 2021- Quiz Online | 16.00– 17.00 | Main Room |

TRACK 3 (Social Science)

ROOM : 6
 TIME : Thursday, 21 October, 2021/ 13.00 - 16.30
 ARTICLES : 13
 MODERATOR : Doeslohal Djumrianti, S.E.MIS., Ph.D/ Dr. Marieska
 Lupikawati

| NO | Time | ID | AUTHORS | TITLE | AFFILIATION |
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| 1 | 13.00-13.10 | 3847 | Ayu Chotibah, Bainil Yulina, Desi Apriyanty, Evada Dewata, Pridson Mandiangan | THE INNOVATION OF SOUTH SUMATERA TRADITIONAL BATIK E-COMMERCE APPLICATIONS | State Polytechnic of Sriwijaya |
| 2 | 13.10-13.20 | 3683 | M. Thoyib, Riza Wahyudi, Firmansyah, Darul Amri | THE ANALYSIS OF COST QUALITY ON PRODUCTIVITY OF IRON RAILING PRODUCTS IN SMALL AND MEDIUM BUSINESS IN PALEMBANG | State Polytechnic of Sriwijaya |
| 3 | 13.20-13.30 | 3757/3756 | Nelly Masnila, Firmansyah, Jovan Febriantoko, Riana Mayasari, Jamaliah Said | Quality of Financial Reporting and Impact of GGG Implementation: Study on Local Government in Indonesia | State Polytechnic of Sriwijaya |
| 4 | 13.30-13.40 | 3796 | Evi Agustina Sari, Sri Gustiani, Yusri, Tiur Simanjuntak | An Error Analysis of English Sentence Construction in Writing Subject Made by the Students of the English Department at Sriwijaya State Polytechnics | State Polytechnic of Sriwijaya |
| 5 | 13.40-13.50 | 3827 | Edwin Frymaruwah, Farah Aida Ahmad Nadzri, Periansya, Evada Dewata | DISCLOSURE OF SUSTAINABLE PERFORMANCE IN HIGHER EDUCATION IN INDONESIA | State Polytechnic of Sriwijaya, UiTM |
| 6 | 13.50-14.00 | 3976 | Hendra Hadiwijaya Febrianty Rezanía Agramanisti Azdy | Improvement of LPKA Class 1 Palembang Electronic Dashboard with Field Performance Monitoring | Palcomtech Polytechnic, STMIK PalComTech |
| 7 | 14.00-14.10 | 3853/4034 | Neneng Miskiyah, Purwati, Yulia Pebrianti, Keti Purnamasari, Nyimas Miftahul Jannah, | OPTIMIZATION OF INCOME PARAMETERS OF SONGKET CRAFTSMEN ON KOPERASI SONGKET PALEMBANG | State Polytechnic of Sriwijaya |

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Accounting Comics as a Medium of Learning

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ABSTRACT

This study is research qualitative, to contribute to learning media development in SMK Negeri 1 Palembang. The multimedia is in the form of accounting comics with accounting cycle materials for class X. Comics are made in comic books and animated videos that can be accessed through web blogs. This research is a 4D model (Define, Design, Development, and Dissemination). The study was conducted from July to September 2021. Data collection was performed by monitoring, Q&A, questionnaires, and validation of expert teams. Accounting comics was validated by the expert judges of many 20 people. The expert validation showed that: accounting comic learning media belongs to a very viable category and fits the criteria of media eligibility. Thus, accounting comic media can be piloted at a later stage and used for the accounting learning process.

Keywords: *media of learning, accounting comics, multimedia.*

1. INTRODUCTION

Covid 19 pandemic has brought a change from learning in class to an online class. Using effective and quality learning media becomes one of the efforts in realizing a fun and not boring learning atmosphere. The learning process in school is a fun activity, where students can interact with each other. However, some of these activities have now stopped. The use of online learning media takes students to understand teaching materials easily and unsaturated. One of the efforts that can be done is to use accounting comics on accounting learning. Comics in the form of cartoon images that describe characters in the story and provide entertainment to the reader. Reading comics can be done anytime and anywhere.

From the results of initial observations made on class X accounting learning at SMK Negeri 1 Palembang, learning still uses package books and problems/exercises in the book. Learning in that way tends to be monotonous and will cause students to get bored quickly. This prompted the research team to provide an alternative learning process using animated accounting comics that can be accessed through web blogs. Comics contain powerful visual elements and stories. Expression visualization invites the reader to be emotionally engaged so that the reader wants to continue reading until it is finished. This inspired the research team to choose material in comic form

Accounting comics in the form of accounting cycles are the products produced in this study.

In addition, using a web blog has advantages over other media, including ease of use and affordable cost. Web blogs are not heavy websites that require a lot of internet quotas. Therefore, learning using accounting comics in the form of animated videos via web blogs needs to be researched so that research results can be tested/acted upon in accounting learning

The learning process using accounting comics is expected to get a positive response from students. Students are expected to be enthusiastic in following the learning process. Using comics, get a fun learning atmosphere and information presented an easier to understand because of interesting presentation and blends elements of images, narratives, and animations. This is in line with research [1], comics are easy to understand because of their simplicity by combining images and text. Audio (animation) will provide something interesting for students. This is as revealed by [2] that somebody can learn better by combining images and writing. Comic, text-based content that's easy to understand, remember, and something fun [3]. It describes resources that can improve understanding especially to facilitate communication concerning education

Therefore, this study will develop comics as media of learning in the form of animation for online learning. Research issues are namely how to develop a learning

media comic accounting that is suitable for use in the learning process.

2. LITERATURE REVIEW

2.1. Learning Media

Multimedia development is an innovative form in an educational environment [4]. According to the findings of [5], The *Application of TAI* learning models aided by a comic module can increase student outcomes in accounting. Comic learning [6] is effective in improving student learning outcomes. The use of caricatures has both positive and negative effects on a decision [7] : [8] .

2.2 Comics

The existence of comics has been since 1945, as a method that studies content and visual meaning [9]. Comics introduce dialogical reflexivity, integrative knowledge, and socializing [10] and as a means of knowledge communicating [11] [12]. [13], is one of the most significant elements associated [14] : [15] .

2.3 Accounting Cycle

The accounting cycle, something very important [16], tea loss is difficult for students.who are just studying financial accounting. The accounting cycle is the process of recording financial activities [17], in scope:

- 1) analyzing and measuring transactions
- 2) journaling transaction
- 3) posting
- 4) preparing a trial balance
- 5) preparing to adjust entry
- 6) preparing trial balance after adjusting
- 7) financial statements
- 8) closing entry
- 9) trial balance after closed

3. METHODOLOGY

3.1 Research Stage

The study took place in July - September 2021, aiming to develop the media of learning accounting comics on accounting cycle materials. The selection of research locations is based on several considerations:

- Problems faced and the availability of data needed.
- Analysis of needs respecting at learning.
- Availability of facilities and infrastructure, support the use of accounting comic learning media in the form of animated videos accessed through web blogs

The research subject is class X students majoring in accounting SMK Negeri I Palembang.

The research begins with a preliminary study to explore the potential and identify problems that occur in the accounting learning process at vocational schools. Preliminary studies are conducted through the study of literature and information that support the importance of media in learning.

The research uses a 4-D model consisting of four steps: defines, design, development, dissemination [18] modified by [19] Define phase requires a valid, feasible, and efficient analysis of the needs and definitions of accounting comic media for learning media. The design stage consists of planning the development of an accounting comic that suits your needs. The development phase includes creating an animated video and validating accounting comics to experts in learning media (material experts and multimedia experts). The dissemination phase includes the determination of the accounting cycle material to be piloted. The research design is shown in figure 1.

Figure 1 The Frame of Mind Using Model 4D

3.2. Data Collection and Analysis Techniques

Data collection techniques through monitoring, Q&A, questionnaires, and validation. Monitoring, Q&A conducted to get direct information about accounting learning in school. Questionnaires are used to analyze

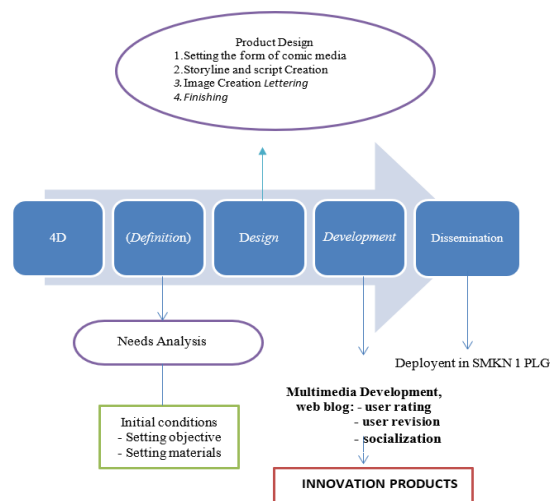


Figure 1 The Frame of Mind Using Model 4D

the needs of teachers and students, as a basis for consideration in developing the required learning media. Validation of media feasibility assessment consists of 10 media and 10 material experts (accounting teachers). Various suggestions and inputs from the teams of experts are used as the basis to improve the resulting media products. Data analysis techniques are qualitative descriptive analysis. Steps of analysis of comic eligibility data are carried out to change qualitative forms to quantitative as shown in Table 1.

Table 1 Score Criteria

| | |
|------------------|---|
| very worthy | 5 |
| proper | 4 |
| enough | 3 |
| Less worthy | 2 |
| very less worthy | 1 |

Calculates average score with:

$$\bar{x} = \frac{\sum x}{N}$$

Information:

\bar{x} = average value

$\sum x$ = total value

N = total appraiser

Then, an average score is changed into five categories. very worthy (A), proper (B), enough (C), less (D), and very less worthy (E). Table 2 shows the ideal assessment criteria

Table 2 Ideal Score

| Nilai | Score Range | Categorie |
|-------|----------------------|------------------|
| A | $X > 4,01$ | Very worthy |
| B | $3,34 < X \leq 4,01$ | proper |
| C | $2,67 < X \leq 3,34$ | enough |
| D | $2,00 < X \leq 2,67$ | less |
| E | $X \leq 2,00$ | Very less worthy |

4. RESULTS AND DISCUSSION

4. 1. Preliminary Study on Needs Analysis

Comics are one of the media teaching and learning activities in the pandemic period. As revealed, [20] comics respond to pandemics /disasters, an interesting study conducts comics such as interesting source material. Comics as an integral part of the research process, there has been an increase [21].

Figures The results of observation and interviews in obtaining information on accounting learning in school have been going well. However, there are still obstacles to the use of learning media (rarely done). Using of technology-based learning media in the learning process is limited to certain materials. Analysis of teachers' needs shows, the use of learning media and utilization in the classroom in accounting learning number 70%, and 70% of teachers expressed difficulties in developing accounting learning media, while 85% of teachers agreed to develop comic media in accounting learning.

4.2 Product Design

Things to do in preparing the initial product design of media, namely establishing basic competencies to be developed in media comics accounting. In this study, the basic competencies chosen are the accounting cycle. Comic media content discusses material ranging from recording transactions to compiling financial statements. The material is presented in an animated video consisting of: first, an introduction that presents information about the transaction recording process. Second, the accounting comic presented the process of preparing financial statements. Third, drill and practice that displays questions /questions about the exercise. Pre-determined media content becomes a guideline for the research team in creating flowchart charts and compiling a storyboard accounting comic. quantitative as shown in Table 1.

Some of the applications used in developing the media of accounting comics are:

1. **Adobe Illustrator** is used for editing and images of characters and characters that will be included in the accounting comics to be developed.
2. **Adobe Audacity** is used to edit the voice used in animated videos.
3. **Adobe After Effect** is used to create animated videos by combining multiple images and sounds that have been created before.
4. **Adobe Media Encoder** is used to perform rendering that works so that the video can be stored in the form of a video such as mp4.

Figures 2 to figure 5 are part of the resulting accounting comics.



Figure 2 Accounting Comics (Introduction section)



Figure 3 Introduction Section of Accounting Comics



Figure 5 Accounting Comics Story Section

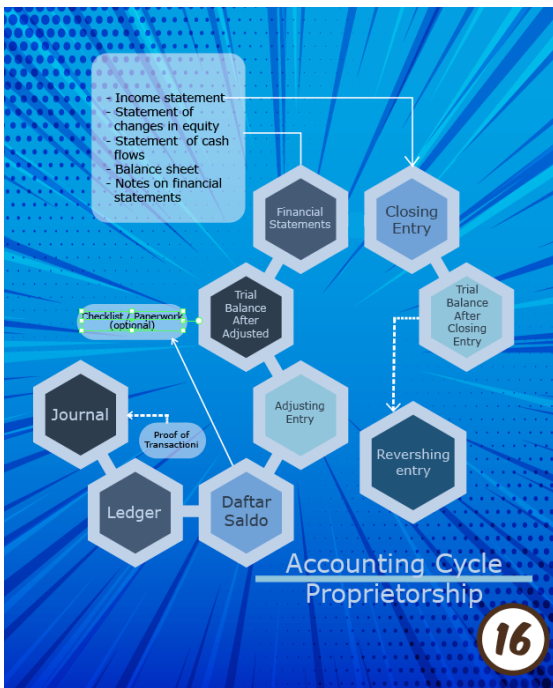


Figure 4 Accounting Cycle

4.3 Analysis Results

The results of validation by a team of experts that have been done, namely:

a. Material Experts

Aspects of the material assessed include aspects of accounting content/materials and aspects of usefulness. The results of material expert, material quality assessment score was obtained 3.99, usefulness aspect was 4.05. The result value of material media is based on expert assessment of material as shown in table 3.

Table 3 Material Expert Validation

| No | Aspect | Average Score | Qualitative Value | Category |
|-----------------------------|------------------|---------------|-------------------|-------------|
| 1 | Material Quality | 3.99 | B | Proper |
| 2 | Benefits | 4.05 | A | Very Worthy |
| An average number of scores | | 8.04 | A | Very Worthy |
| An average score per aspect | | 4.02 | A | Very Worthy |

Source: primary data processed (2021)

b. Media Experts

The media aspects assessed include book cover design, content layout, typography, and illustration. The results of the assessment of the feasibility of accounting comic media by media experts (Table 4). It is known that the cover aspect of the book obtained a score of 4.03, the layout aspect of the content 4.00, the typographic aspect 3.90, the typographic aspect 4.05, the illustration aspect 4.50. The qualitative value of media is based on the expert assessment of the media as shown in table 4.

The overall validation of expert judgment based on table 3 and table 4, obtained an average score of 4.07, thus, the accounting comic learning media is categorized as very "worthy" both based on media eligibility criteria.

Table 4 Media Expert Validation

| No | Aspects | Average score | Qualitative Value | Category |
|-----------------------------|-------------------|---------------|-------------------|-------------|
| 1. | Book cover design | 4.03 | A | very worthy |
| 2. | Content layout | 4.00 | B | proper |
| 3. | Typo graphy | 3.90 | B | proper |
| No | Aspects | Average score | Qualitative Value | Category |
| 4. | Illustration | 4.33 | A | very worthy |
| An average number of scores | | 16.26 | A | very worthy |
| An average score per aspect | | 4.07 | A | very worthy |

Source: primary data processed (2021)

5. CONCLUSION

Accounting learning development in the form of comics on accounting cycle materials for students of SMK Negeri I Palembang is an innovative learning medium. The development of comics through four steps, define (defining), design (designing), develop (development), dissemination (spread). Accounting comics are very worthy of use in the learning process. This result is the same as validation by a team of experts (expert judgment): material experts and media experts.

AUTHORS' CONTRIBUTIONS

Maria Maria: conceptualization, methodology, formal analysis, writing - review & editing. Rosy Armaini: data curation, investigation, writing - review & editing. Leni Novianti: animation, software, writing -

review & editing. Yevi Dwitayanti: validation, writing - review & editing.

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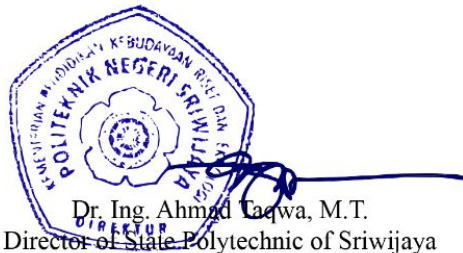
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