INCREASING MOTIVATION AND INTEREST IN LEARNING THROUGH SISIPJA'S INTERACTIVE DIGITAL MEDIA

Dicha Putri Rezkia[1], Gimin[2], Gusnardi[3], Suarman[4], R.M Riadi[5]
[1] Mahasiswa Pascasarjana Pendidikan Ekonomi, Universitas Riau, Indonesia
[2, 3, 4, 5] Dosen Pascasarjana Pendidikan Ekonomi, Universitas Riau, Indonesia
[1]dicha.putri6947@grad.unri.ac.id, [2]gimin@lecturer.unri.ac.id,
[3]gusnardi@lecturer.unri.ac.id, [4]suarman@lecturer.unri.ac.id, [5]rm.riadi@lecturer.unri.ac.id

Abstract

This research aims to develop an interactive digital learning media, SISIPJA (Accounting Cycle for Service Companies), to enhance students' motivation and interest in learning. The research method employed is Research and Development (R&D) using the ADDIE model (Analysis, Design, Development, Implementation, and Evaluation). The research subjects involved 114 students of SMK Negeri 4 Pekanbaru. Data were collected through interviews and questionnaires, and were analyzed using descriptive statistics, t-tests, and n-gain analysis to measure the effectiveness. The results of media validation based on the assessment of 1 media expert and 2 material experts indicate that the SISIPJA media is highly suitable for use, with a final validity score categorized as very suitable, along with several suggested improvements. At the implementation stage, the SISIPJA media was applied in accounting learning and resulted in a significant increase in students' motivation and interest in learning, with a medium n-gain category. This means that the interactive digital learning media SISIPJA is considered very positive and suitable for use in accounting learning.
Kata Kunci: learning motivation, learning interest, interactive digital learning media, SISIPJA, service company accounting cycle

Abstrak

Penelitian ini bertujuan untuk mengembangkan media pembelajaran digital interaktif SISIPJA (Siklus Akuntansi Perusahaan Jasa) untuk meningkatkan motivasi dan minat belajar siswa. Metode penelitian yang digunakan adalah Research and Development (R&D) dengan model ADDIE (Analysis, Design, Development, Implementation, and Evaluation). Subjek penelitian adalah siswa SMK Negeri 4 Pekanbaru yang berjumlah 114 orang. Pengumpulan data dilakukan melalui wawancara dan angket, kemudian dianalisis menggunakan statistik deskriptif, uji t, dan analisis n-gain untuk mengukur keefektifannya. Hasil validasi media berdasarkan penilaian 1 orang ahli media dan 2 orang ahli materi menunjukkan bahwa media SISIPJA sangat layak digunakan dengan skor akhir validitas berkategori sangat layak, disertai beberapa saran perbaikan. Pada tahap implementasi, media SISIPJA diterapkan dalam pembelajaran akuntansi dan menghasilkan peningkatan motivasi dan minat belajar siswa yang signifikan dengan kategori n-gain sedang. Hal ini berarti bahwa media pembelajaran digital interaktif SISIPJA dinilai sangat positif dan layak digunakan dalam pembelajaran akuntansi. Kata Kunci: motivasi belajar, minat belajar, media pembelajaran digital interaktif, SISIPJA, siklus akuntansi perusahaan jasa

INTRODUCTION

21st-century learning is no longer solely centered around the teacher; it also demands active student participation. Instead of being forced to learn, students are encouraged to develop an intrinsic desire to learn, ensuring that learning is meaningful and tailored to their individual needs.[1] During the learning process, teachers are able to directly engage students and foster their independence in learning. This presents a significant challenge for educators, who must constantly seek innovative solutions.[2]

Students experience quality learning when they achieve optimal learning outcomes, although individual achievements may vary due to a multitude of influencing factors. Among these factors, students' motivation and interest in learning play a crucial role.[3] Learning motivation can be a determining factor in achieving goals; the higher the motivation, the greater the likelihood of students attaining higher achievements.[4] Motivated students demonstrate their commitment to learning through active participation, such as asking questions, offering opinions, drawing conclusions, participating in discussions, taking notes, summarizing learning materials, and completing assigned tasks.[5]

Motivation is closely linked to students' interest in learning. Interest can be defined as a condition arising from within the student that is related to their personal desires or needs. During the learning process, students' interest is evident when they show attention and a desire to understand and learn the subject matter and to prove its validity.[6]

Students' learning interests can be influenced by both internal and external factors. Among the external factors that can influence students' learning interest is the use of instructional

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[1] Putu Trisna Hady Permana and Ni Luh Putu Ning Septyarini Putri Astawa, "Artificial Intelligence Dalam Pengembangan Media Pembelajaran Bahasa Inggris," *JIIP - Jurnal Ilmiah Ilmu Pendidikan* 3, no. 3 (2020), https://jiip.stkipyapisdompu.ac.id/jiip/index.php/JIIP/article/view/185.

[2] Lienggar Rahadiantino, "Implementasi Pembelajaran Artificial Intelligence Bagi Siswa Sekolah Dasar di Kota Batu, Malang, Jawa Timur," *Jurnal Inovasi Pendidikan dan Pembelajaran Sekolah Dasar* 6, no. 1 (June 20, 2022): 92–101, https://doi.org/10.24036/jippsd.v6i1.115857.

[3] D. Iswahyuni, S. Adyatma, and A. M. Rahman, "Hubungan Motivasi Belajar Siswa Dengan Hasil Belajar Geografi Di SMA Negeri 1 Kurau Dan SMA Negeri 1 Bumi Makmur," *Jurnal Pendidikan Geografi* 6, no. 2 (2019).

[4] Catur Fathonah Djarwo, "Analisis Faktor Internal dan Eksternal terhadap Motivasi Belajar Kimia Siswa SMA Kota Jayapura," *Jurnal Ilmiah IKIP Mataram* 7, no. 1 (2020): 1–7.

[5] Yusri Wahyuni, "Analisis motivasi belajar matematika Siswa Kelas XII IPA SMA Bunda Padang," *AKSIOMA : Jurnal Matematika dan Pendidikan Matematika* 12, no. 1 (April 19, 2021): 52–59, https://doi.org/10.26877/aks.v12i1.6022.

[6] R. Yohanda, "Metode Studi Kasus: Upaya Guru Dalam Meningkatkan Motivasi Belajar Siswa SMA Negeri 14 Pekanbaru," *Kordinat: Jurnal Komunikasi Antar Perguruan Tinggi Agama Islam* 19, no. 1 (2020).

media. When teachers fail to utilize instructional media optimally in the classroom, it can lead to a decrease in students' learning interest.[7]

By using appropriate and engaging learning media, teachers have the opportunity to stimulate students' learning interest. When teachers can align instructional media with students' needs, it creates a more engaging learning environment, motivating students to learn due to their intrinsic interest in the learning process.[8]

Irlisma[9] stated that engaging learning media can increase students' interest and motivation in learning, thereby improving their understanding of the material. Additionally, interactive learning media can help students who struggle with learning, shape students' personalities, motivate students to learn, increase students' interest in learning, and more. In this regard, Fernandez & Castane[10] suggested that integrating technology into the learning process can have positive impacts, such as enhancing the quality of students' learning experiences, increasing student participation and engagement in the classroom, and improving student learning outcomes. Furthermore, research conducted by Sari and Harjono[11] revealed that the use of interactive learning media can facilitate the development of students' learning interest.

The topic of the accounting cycle for service companies is a crucial component of the vocational school curriculum. This topic refers to the series of processes required to prepare a company's financial statements for each specific period. Through this topic, students are expected to deepen their understanding of financial recording and reporting in a business context. Additionally, this topic covers fundamental concepts such as accounting principles, as well as the classification and grouping of transactions. However, many students struggle to understand this material due to the lack of interactivity in existing instructional media. To address this challenge, the researcher was motivated to develop an interactive digital learning media specifically for the accounting cycle for service companies, named SISIPJA, which stands for "Siklus Akuntansi Perusahaan Jasa."

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[7] Sri Wulan Anggraeni et al., "Pengembangan Multimedia Pembelajaran Interaktif Berbasis Video Untuk Meningkatkan Minat Belajar Siswa Sekolah Dasar," *Jurnal Basicedu* 5, no. 6 (October 22, 2021): 5313–27, https://doi.org/10.31004/basicedu.v5i6.1636.

[8] Lilis Mutia, Gimin Gimin, and Mahdum Mahdum, "Development of Blog-Based Audio Visual Learning Media to Improve Student Learning Interests in Money and Banking Topic," *Journal of Educational Sciences*, April 24, 2020, 436–48, https://doi.org/10.31258/jes.4.2.p.436-448.

[9] Irlisma, "Upaya Peningkatan Hasil Belajar Akuntansi Dasar Siswa SMKN 4 Pekanbaru Menggunakan Media Pembelajaran Berbasis Multimedia Interaktif," *Jurnal Pekbis* 14, no. 1 (2022).

[10] Alfred Fernandez and Castane, "Enhancing Students' Digital Skills through a Biotechnology & Bioprocessing Module Designed for Chemical Engineers," *Cogent Education* 11, no. 1 (December 31, 2024): 2299201, https://doi.org/10.1080/2331186X.2023.2299201.

[11] Rika Kurnia Sari and Nyoto Harjono, "Pengembangan Media Pembelajaran Interaktif Berbasis Articulate Storyline Tematik Terhadap Minat Belajar Siswa Kelas 4 SD," *Jurnal Pedagogi Dan Pembelajaran* 4, no. 1 (April 12, 2021): 122–30, https://doi.org/10.23887/jp2.v4i1.33356.

The development of interactive digital learning media for the accounting cycle for service companies is expected to help vocational school students better understand the subject matter and increase their interest and motivation in the topic. By using this interactive digital learning media, students can directly interact with the content, solve problems, and engage in more engaging learning activities as the material is delivered to students through their respective smartphones.

RESEARCH METHODS

The research employed a Research and Development (R&D) approach utilizing the ADDIE development model. The ADDIE model serves as a framework for developing products, including models, strategies, methods, media, and instructional materials. [12] A visual representation of the ADDIE model is presented in Figure 1.
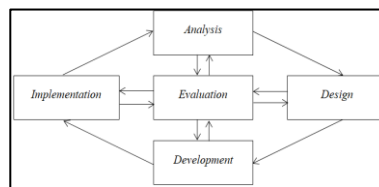

Figure 1. ADDIE Model

The following is an explanation of each stage involved in the ADDIE model:

1. Analysis, this stage involves gathering information and identifying problems within the learning process. Activities in this stage include needs analysis and instructional material analysis. The data collected at this stage will be used to formulate research problems and objectives.

2. Design, this stage involves designing instructional solutions identified in the analysis stage. Based on the results of the analysis, it was determined that there was a need to develop instructional media to enhance students' motivation and interest in learning.

3. Development, in this stage, an interactive digital instructional media will be created and subsequently validated by subject matter experts, media experts, and the relevant accounting teacher.

4. Implementation, this is the process of implementing the product after it has been revised and validated by experts. This process is carried out to identify the implementation and practicality

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[12] Anis Mahmudah and Adeng Pustikaningsih, "Pengembangan Media Pembelajaran Interaktif Berbasis Lectora Inspire Pada Materi Jurnal Penyesuaian Untuk Siswa Kelas X Akuntansi Dan Keuangan Lembaga SMK Negeri 1 Tempel Tahun Ajaran 2018/2019," *Jurnal Pendidikan Akuntansi Indonesia* 17, no. 1 (July 1, 2019): 97–111, https://doi.org/10.21831/jpai.v17i1.26515.

of the interactive digital learning media. The research design used in this study is a one-group pretest-posttest design, as depicted in the following Table.

Table 1. *One Group Pretest Posttest Design*

Pretest	Treatment	Posttest
O1	X	O2

Description:
O1 = score before learning with media
O2 = score after learning with media
X = treatment or learning using media

5. Evaluation, this phase involves the assessment or evaluation of each stage of research and development, starting from analysis, design, development, to implementation.

The subjects of this trial to determine the feasibility of this developed product were subject matter experts, media experts, the relevant subject teacher, and the students involved. The sample of students in this study consisted of 114 tenth-grade students from the Accounting and Finance Department of SMKN 4 Pekanbaru. These three classes were selected due to their homogeneity, assuming they have similar characteristics and abilities.

The data collection techniques and research instruments used in this study are as follows.

a. Product Validity Test

In this study, the feasibility data of the interactive digital learning media SISIPJA was obtained based on the validity test from the validation questionnaire filled out by subject matter experts and media experts. The following are the validation criteria used in this study.[13]

Table 2. Categories of media development percentage

Assessment	Interpretation Criteria
0 – 20%	Very Unfit
20,1% – 40%	Not Feasible
40,1% – 60%	Less Feasible
60,1% – 80%	Worth
80,1% – 100%	Very Feasible

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[13] Iis Ernawati and Totok Sukardiyono, "Uji Kelayakan Media Pembelajaran Interaktif Pada Mata Pelajaran Administrasi Server," *Elinvo (Electronics, Informatics, and Vocational Education)* 2, no. 2 (December 11, 2017): 204–10, https://doi.org/10.21831/elinvo.v2i2.17315.

b. Product Implementation Test

Data on product implementation in this study was obtained based on observation sheets of teachers and students in the classroom in two meetings. The following is the calculation of the percentage of SISIPJA product implementation.

$$\text{Observer percentage } (\rho) = \frac{\text{Number of answers "Yes"}}{\text{Total number of answers}} \times 100\%$$

The results obtained were then analyzed using the standardization of the assessment of the implementation of learning activities based on the opinion of Mulyono et al.[14] as shown in the following table.

Table 3. Criteria for assessing the implementation of learning activities

Percentage Range	Criteria
$\rho \geq 90\%$	Very good
$80\% \leq \rho < 90\%$	Good
$70\% \leq \rho < 80\%$	Simply
$\rho < 60\%$	Less

A learning medium is deemed to be user-friendly if it attains a minimum goodness criterion falling within the range of $80\% \leq \rho < 90\%$.

c. Descriptive Statistical Analysis of Student Motivation and Interest in Learning

In this study, the level of student motivation and interest in learning obtained from the distribution of questionnaires before (pre) and after (post) the use of the interactive digital learning media SISIPJA will be assessed, using a Likert scale category.[15]

Table 4. Categories of scores in the Likert scale

Score	Description
4	Strongly Agree
3	Agree
2	Disagree
1	Strongly Disagree

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[14] Mulyono Mulyono, Arie Anang Setyo, and Nika Fetria Trisnawati, "Efektivitas Pembelajaran Virtual dalam Meningkatkan Hasil Belajar Statistik Pendidikan di Masa Pandemi Covid-19," *Union: Jurnal Ilmiah Pendidikan Matematika* 8, no. 3 (November 30, 2020): 411–22, https://doi.org/10.30738/union.v8i3.8356.

[15] Rr Vemmi Kesuma Dewi, Denok Sunarsi, and Irfan Rizka Akbar, "Dampak Penggunaan Teknologi Informasi dan Komunikasi Terhadap Minat Belajar Siswa di SMK Ganesa Satria Depok," *Jurnal Ilmiah Wahana Pendidikan* 6, no. 4 (December 28, 2020): 1001–7, https://doi.org/10.5281/zenodo.4395889.

d. Hypothesis Test

In this study, a hypothesis test will be conducted to see the increase in student motivation and interest in learning before and after using the interactive digital learning media SISIPJA. The hypothesis test used is the t-test to see the statistical difference, and the n-gain score test to see the statistical scale of the increase in student motivation and interest in learning. The division of the N-Gain score income category can be seen in the table below.[16]

Table 5. N-Gain score categories

N-gain value	Category
g > 0,7	High
0,3 ≤ g ≤ 0,7	Medium
g < 0,3	Low

e. Practicality Test

The final stage is to test the level of practicality of media development based on the results of questionnaires from teachers and students regarding the interactive digital learning media SISIPJA. The criteria for the level of practicality can be seen in the following table.[17]

Table 6. Criteria for the level of practicality

Percentage Range	Criteria
0 - 20%	Not Very Practical
20,1% - 40%	Not Practical
40,1% - 60%	Practical enough
60,1% - 80%	Practical
80,1% - 100%	Very Practical

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[16] Abdul Wahab, Junaedi Junaedi, and Muh Azhar, "Efektivitas Pembelajaran Statistika Pendidikan Menggunakan Uji Peningkatan N-Gain Di PGMI," *Jurnal Basicedu* 5, no. 2 (March 22, 2021): 1039–45, https://doi.org/10.31004/basicedu.v5i2.845.

[17] Maymuna Harahap, Abdul Mujib, and Amanda Syahri Nasution, "Pengembangan Media Uno Math Untuk Mengukur Pemahaman Konsep Luas Bangun Datar," *All Fields of Science Journal Liaison Academia and Sosiety* 2, no. 1 (April 28, 2022): 209–17, https://doi.org/10.58939/afosj-las.v2i1.158.

RESULT AND DISCUSSION

The results obtained from this development research, based on the ADDIE development model stages, are as follows.

1. *Analyze*

The initial phase of the research involved a comprehensive data collection and analysis process focused on instructional media employed by teachers for the accounting cycle of service companies. This phase encompassed both a needs analysis and an instructional material analysis, conducted through the distribution of questionnaires to tenth-grade vocational high school students and interviews with accounting teachers. The findings from the questionnaires revealed significant student challenges in comprehending accounting concepts, particularly those related to the accounting cycle for service companies, including difficulties in journalizing transactions, maintaining general ledgers, and accurately calculating figures. These observations were corroborated by teacher interviews, which highlighted the need for more engaging instructional media, such as interactive digital platforms, to replace traditional methods like PowerPoint presentations that were perceived as less stimulating for students.

A convergent analysis of teacher interviews and student questionnaire responses revealed a strong collective interest in the integration of interactive digital learning media into the curriculum. Furthermore, a meticulous examination of instructional materials was undertaken to ensure alignment with the Merdeka Curriculum framework. The subsequent formulation of learning outcomes, objectives, and pathways is presented in tabular format.

Table 7. Learning Achievements, Learning Objectives, and Learning Achievement Pathways

Learning Outcomes (CP)	Learning Objective (TP)	Flow of Learning Objectives (ATP)	
Learners are able to explain the stages of the accounting process in service companies which include: processing journal entries, processing general ledgers, and preparing financial statements.	4.2 Understand the accounting cycle of service companies using the application	First Meeting	
		1	Introducing interactive digital learning media
		2	Understand the main purpose of interactive digital learning media
		3	Understand CP, TP, and ATP presented in interactive digital learning media
		4	Understand the service company accounting cycle material presented through video
		Second Meeting	
		5	Exploring the understanding of service company accounting cycle material through chatbot in interactive digital learning media
		6	Create 1 service company accounting cycle as evidence of understanding the material based on exercises in interactive digital learning media
		7	Evaluate the understanding and application of the service company accounting cycle through quizzes

The next activity was to conduct a descriptive statistical analysis of students' learning motivation through research questionnaires with 18 statement items and students' learning interest with 15 statement items. The results of the descriptive statistical test of students' motivation and learning interest are presented in the following tables.

Table 8. Distribution of students' learning motivation before using interactive digital learning media

Class	Category	Interval	Frequency	Percentage per category		
				Low	Medium	High
X AKL 1	Low	18 – 35	10			
	Medium	35,1 – 53	25	8,8%	21,9%	2,6%
	High	53,1 – 72	3			
X AKL 2	Low	18 – 35	9			
	Medium	35,1 – 53	17	7,9%	14,9%	8,8%
	High	53,1 – 72	10			
X AKL 3	Low	18 – 35	8			
	Medium	35,1 – 53	20	7,1%	17,5%	10,5%
	High	53,1 – 72	12			
				23,8%	54,3%	21,9%
Total			**114**	**100%**		

Source: 2024 Processed Data

Table 9. Distribution of students' learning interest before using interactive digital learning media

Class	Category	Interval	Frequency	Percentage per category		
				Low	Sedang	Tinggi
X AKL 1	Low	15 – 29	12			
	Medium	29,1 – 44	26	10,5%	22,8%	-
	High	44,1 – 60	-			
X AKL 2	Low	15 – 29	9			
	Medium	29,1 – 44	27	7,9%	23,6%	-
	High	44,1 – 60	-			
X AKL 3	Low	15 – 29	24			
	Medium	29,1 – 44	16	21,1%	14,1%	-
	High	44,1 – 60	-			
				39,5%	60,5%	-
Total			**114**	**100%**		

Source: 2024 Processed Data

Based on the tables presented above, the results show that students' motivation and interest in learning the sub-chapter of the accounting cycle for service companies were in the moderate category, but there were also those who were low. This condition indicates an opportunity for researchers to develop interactive digital learning media that can increase students' motivation and interest in learning.

2. Design

Following the data collection and analysis phase, the design phase commenced. The findings from the analysis indicated a clear necessity for the development of interactive digital learning media capable of enhancing student motivation and interest. This phase was subsequently bifurcated into two distinct stages: media design and instrument development. The former focused on the conceptualization of the media, while the latter centered on creating assessment tools.

In the media design stage, the researcher created a flowchart to facilitate the design and development process of the media according to the concept, and created a storyboard to make it easy to understand the function of each display in the media. The following is a flowchart of the development of interactive digital learning media.
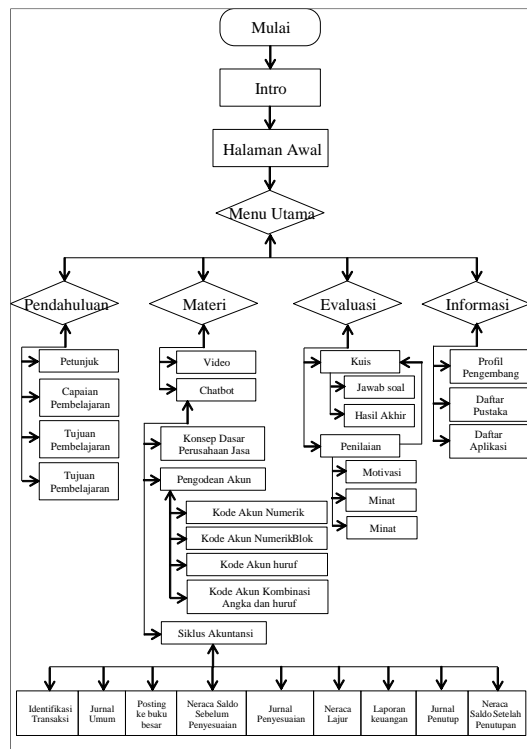

Figure 2. *Flowchart* of Interactive Digital Learning Media SISIPJA

Furthermore, the preparation of *storyboards* in developing media in this study, which can be seen in the following figure.
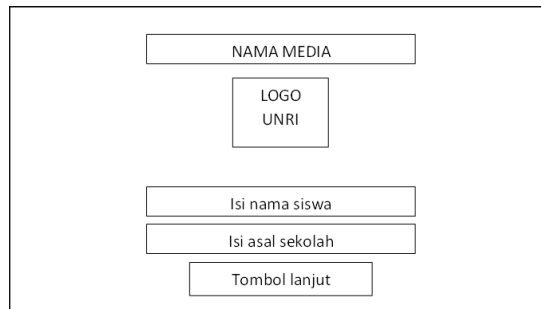
Figure 3. *Storyboard* of Interactive Digital Learning Media SISIPJA

The next stage of the design phase was the development of assessment instruments, starting with the validation instrument, the trial instrument, and the field trial instrument. For the validation instrument, which contains a validation sheet for material validators and media validators. For the trial instrument, it consists of student response questionnaires and teacher response questionnaires to the developed learning media. And at the final stage, there is a field trial instrument, which will later provide results of students' motivation and interest after using interactive digital learning media.

3. Development

The development phase involved the creation of instructional media, culminating in the production of an interactive digital learning medium termed SISIPJA. Concurrently, the media underwent a feasibility assessment by expert validators. Visual representations of the SISIPJA media, as designed through flowcharts and storyboards, are presented below.
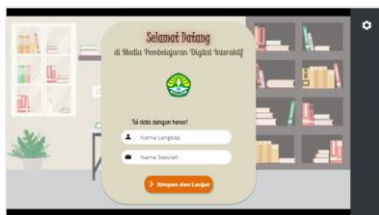
a. *Cover Page*   b. *Main Menu*

Figure 4. SISIPJA Media Cover Page Display   Figure 5. Main Menu Display of SISIPJA Media

c. *Introduction Menu*

d. *Material Menu*

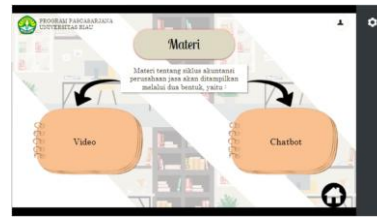Figure 6. SISIPJA Media Introduction

Menu Display

Figure 7. Display of SISIPJA Media

Material Menu
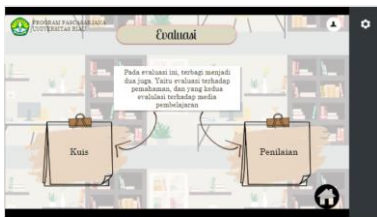
e. *Evaluation Menu*

Figure 8. Menu display of SISIPJA

Media Evaluation

Furthermore, the media was validated by subject matter experts and media experts. The scores of the validation results were then accumulated to obtain a range of scores regarding the feasibility of the SISIPJA interactive media. The percentage range of these scores is presented in the following table.

Table 10. Average assessment of media experts, subject matter experts, and teachers

No	Validator	Average	Percentage	Category
1	Material Expert	3,83	95,83%	Very feasible
2	Media Expert	3,77	94,42%	Very feasible
3	Accounting Teacher	3,89	97,25%	Very feasible
	Average	3,83	95,83%	Very feasible

This indicates that in quantitative assessment, the instructional media was categorized as very suitable for use in the context of accounting learning. However, the results of the qualitative assessment revealed that there were several aspects that needed to be improved in the media, according to the recommendations and input from the three validators.

The evaluation of the media's suitability by subject matter experts showed that the overall percentage of assessed aspects reached 95.83%, which falls into the highly suitable category. This indicates that the developed media is appropriate and can be used as an

instructional medium with some improvements. The subject matter validator's suggestion is to improve the use of language in accordance with accounting principles.

The assessment of the media's suitability conducted by media experts revealed that the overall percentage of assessed aspects reached 94.42%, which is categorized as highly suitable. The validator assessed aspects such as appearance, clarity of text, images and audio, and usability. The media expert's suggestion is to improve the clarity of the text, images, and audio, especially regarding font size adjustments.

The assessment of the media's suitability was not only conducted by subject matter experts and media experts but also involved accounting teachers from the relevant school. Based on Table 9, it shows that the overall percentage of assessed aspects reached 97.25%, which is also categorized as highly suitable. The teacher's suggestion is that for the evaluation aspect, especially the quiz section, it should be adjusted to the students' conditions and abilities, as well as time allocation.

Based on the results of the suitability evaluation, the interactive digital learning media SISIPJA is classified as highly suitable for use in accounting learning. This finding is consistent with research conducted by Octavina & Susanti,[18] which showed a validity index of more than 80.1% from media and subject matter experts, so the media they developed was declared valid for accounting learning.

4. Implementation

In the implementation process, the researcher will use the instructional media that has been developed and has undergone several revision processes in the accounting subject with the material of the accounting cycle for service companies. After being validated and revised based on the recommendations of the validators, the interactive digital learning media SISIPJA will be used in the learning stages in order to test its effectiveness in increasing students' motivation and interest in learning, using pre- and post-test results. The values obtained will be analyzed using the t-test and n-gain test.

a. Results of Paired Sample t-test

In this study, the researcher aims to identify changes in the average motivation and interest of students in learning before and after using the interactive digital learning media SISIPJA. The following is a graph showing the values of student motivation and interest.

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[18] Mely Tri Octavina and Susanti Susanti, "Pengembangan Media Interaktif Program Lectora Inspire Berbasis Android Pada Materi Jurnal Penyesuaian Perusahaan Jasa Kelas XI Akuntansi Dan Keuangan Lembaga SMK Negeri 10 Surabaya," *Jurnal Pendidikan Teknologi Dan Kejuruan* 18, no. 2 (September 1, 2021): 142–51, https://doi.org/10.23887/jptk-undiksha.v18i2.34341.
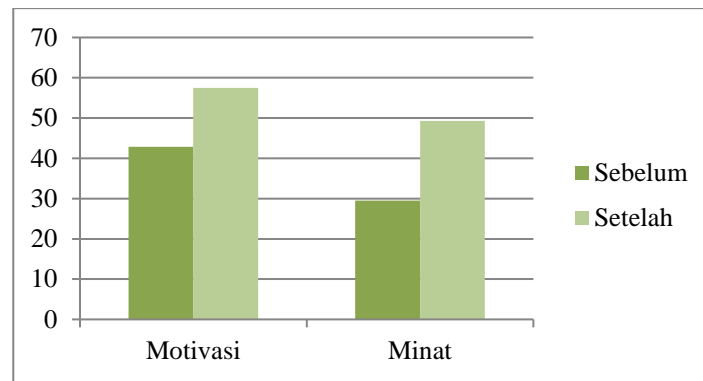
Figure 8. Average student motivation and interest in learning

According to the graph, the conclusion is that the use of the interactive digital learning media SISIPJA can increase students' motivation and interest in learning. Descriptively, it can be seen that there is a difference in the range of motivation before and after, and interest before and after using the interactive digital learning media. This will be further explained with the t-test, below are the results of the t-test for student motivation and interest in learning.

Tabel 11. Results of t-test

		Paired Samples Test							
		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Motivasi Sebelum - Motivasi Setelah	-14.6072	9.9074	.9279	-16.4455	-12.7688	-15.742	113	.000
Pair 2	Minat Sebelum - Minat Setelah	-19.8087	7.4450	.6972	-21.1901	-18.4272	-28.408	113	.000

Referring to the table, it can be seen that the Sig. score (2-tailed) for motivation and interest obtains the same number $0.000 < 0.05$, thus Ho is rejected and Ha is accepted. The conclusion is that there is a difference in the range between Before Motivation and After Motivation and Before Interest and After Interest, which means that there is an effect of utilizing interactive digital learning media to increase students' motivation and interest in learning.

b. Results of N-Gain Score Test

In this study, the researcher applied the n-gain score test to measure the level of effectiveness of learning using the interactive digital learning media SISIPJA. The following are the results of the n-gain score test for student motivation and interest in learning.

Table 12. Results of N-Gain test

Variabel	Nilai rata-rata		Skor N-Gain			Rata-rata N-gain	Kategori
	Pre	Post	X AKL 1	X AKL 2	X AKL 3		
Motivasi	42,861	57,468	0,4699	0,4910	0,3793	0,4467	Sedang
Minat	29,502	49,311	0,5813	0,6919	0,6494	0,6409	Sedang

Based on the table, it indicates that the mean N-gain score for the motivation variable is 0.4467, which is categorized as moderate. Meanwhile, the average N-Gain value for the interest variable is 0.6409, which is also categorized as moderate. Thus, it can be concluded that the utilization of interactive digital learning media in increasing the level of student motivation and interest in learning at SMKN 4 Pekanbaru is quite effective. However, for the motivation variable, the N-Gain Score value obtained can be said to be in the moderately low category, which means that the increase in motivation is not very large. This is in line with the research of Idris & Suhendi[19] which states that it is possible that the increase that occurs is not so large because there are several stages that are less than optimal in the learning process. Saputra et al.[20] also mentioned that not all processes in teaching and learning can directly increase students' learning motivation.

c. Results of Student Responses to Interactive Digital Learning Media SISIPJA

The student response questionnaire to the learning media consists of 3 assessment aspects, namely the use aspect, the material aspect, and the appearance aspect. The assessment of student responses uses a Likert scale with criteria of very good, good, less good, and very poor.[21] The following are the results of student responses to the interactive digital learning media SISIPJA.

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[19] Salsabilla Fauziah Idris and Herni Yuniarti Suhendi, "Pengembangan Media Pembelajaran Interaktif GEMBI untuk Meningkatkan Keterampilan Berpikir Kritis Siswa," *DIFFRACTION: Journal for Physics Education and Applied Physics* 5, no. 1 (July 1, 2023): 24–36, https://doi.org/10.37058/diffraction.v5i1.7460.

[20] Galih Yudha Saputra, Arif Harjanto, and Yunita Andrian Ningsih, "Pengembangan Media Pembelajaran Berbasis Android Untuk Mata Pelajaran Fisika Materi Pokok Energi Di Kelas X IPA 1 SMA Negeri 2 Muara Badak Tahun Ajaran 2019/2020," *Journal of Advances in Information and Industrial Technology* 2, no. 2 (November 1, 2020): 10–24, https://doi.org/10.52435/jaiit.v2i2.67.

[21] Dewi, Sunarsi, and Akbar, "Dampak Penggunaan Teknologi Informasi dan Komunikasi Terhadap Minat Belajar Siswa di SMK Ganesa Satria Depok."

Table 13. Results of student responses to learning media

No	Indikator Penilaian	Rata-rata	Persentase
1	Aspek Penggunaan	3,62	30,17%
2	Aspek Materi	3,74	31,17%
3	Aspek Tampilan	3,78	31,50%
	Jumlah/Rata-rata	3,71	92,84%

The data presented in the table concerning student responses indicate a favorable reception of the interactive digital learning media, SISIPJA. The media was perceived as easy to use, and the content was deemed relevant and suitable for meeting learning requirements. Additionally, the visual design was considered appealing. The combined assessment of these three dimensions resulted in a mean score of 3.71, equivalent to 92.84% of the total, thereby demonstrating the media's high practical utility within an educational context.

5. Evaluation

A comprehensive evaluation of each phase encompassed within the ADDIE development model was conducted. The analysis phase involved the identification of student requirements through teacher interviews. Subsequently, the design phase focused on conceptualizing the interactive digital learning media, utilizing flowcharts and storyboards, and developing assessment instruments to gauge the media's feasibility. The development phase materialized the media based on the established design, transforming it into a downloadable application. Finally, the implementation phase involved a trial to assess the media's practical application.

CONCLUSION

A comprehensive analysis of the research findings and subsequent discussion leads to the conclusion that the developed interactive digital learning media, SISIPJA, has garnered overwhelmingly positive evaluations and is deemed suitable for pedagogical applications. Furthermore, the implementation of SISIPJA was met with enthusiastic student reception, as evidenced by heightened motivation and interest in the accounting cycle for service companies, as determined by n-gain scores within the moderate range. These findings suggest that SISIPJA effectively enhances the engagement and comprehension of accounting concepts, thereby contributing positively to the overall teaching and learning process.

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