IRJE |Indonesian Research Journal in Education|
|Vol. 8| No. 2|December|Year 2024|

Development of a Debate Learning Model, Analysis, and Findings Based on Digital Life Skills for Elementary Schools

APDOLUDIN[1*], RENI GUSWITA[2], DIYAN ANDRIANI[3], AND DEXZA ISMA PUTRI[4]

Abstract

This research aimed to determine the validity, practicality, and effectiveness of the developed digital life skill-based DAT learning model. It used development research (R&D). The population of this research was 124 students of grade IV of SDN 106/II Sungai Binjai, Bathin III District, Bungo Regency, Jambi Province, Indonesia, and the sample was 36 students chosen using simple random sampling. Data collection techniques were model validation sheets, observations, questionnaires, and interviews. The validity of the instrument used in this research was content validity by consulting with experts. The reliability test in this research used a Likert scale. The research results indicate that (1) the debate, analysis, and findings model based on digital life skills improves students' thinking skills, trains students' skills, and can help students analyze learning in depth, 2) through the debate, analysis, and findings model based on digital life skills, the learning takes place more systematically, and significant in improving student understanding, and (3) learning with the debate, analysis, and findings model based on digital life skills can make learning more effective.

Keywords
Analysis and findings, debate learning model, digital life skills

Article History
Received 25 September 2024
Accepted 18 November 2024

How to Cite
Apdoludin, A., Guswita, R., Andriani, D., & Putri, D. I. (2024). Development of a debate learning model, analysis, and findings based on digital life skills for elementary schools. *Indonesian Research Journal in Education |IRJE|*, *8*(2),701-716. https://doi.org/10.22437/irje.v8i2.37317

[1] Universitas Muhammadiyah Muara Bungo, Jambi, Indonesia Corresponding author: apdoludinstkipmb@gmail.com
[2,4] Universitas Muhammadiyah Muara Bungo, Jambi, Indonesia
[3] Universitas Merangin, Jambi, Indonesia

Introduction

Progress in education is an inevitability that all nations want to achieve, including Indonesia. In contrast, the education problems in Indonesia seem endless and have no solutions along with the development of the times, so progress in education will be difficult to achieve. The facts show that various curricula have been improved, but educational problems remain. The independent curriculum has been running for more than 2 years but learning in the classroom still experiences many obstacles from technical and non-technical aspects. The current research does not provide sufficient evidence that teaching resources and the quality of educational human resources are evenly distributed throughout Indonesia, especially in elementary schools. One of the elementary schools that becomes a concern is SDN 106/II Sungai Binjai in Bathin III District, Bungo Regency, Jambi Province.

Based on the interview results, this school has limited learning resources and educators' ability to design learning. Several educators also stated the lack of availability of learning resources that can help them in learning, which impacts students' low thinking skills, difficulty in training skills, and analyzing materials. Based on these facts, the research focus is to develop a learning model based on debate, analysis, and findings based on digital life skills, which is expected to overcome the problems of educators and students in the future. Educators are expected to create learning that spurs the participants' creativity so that modifications and changes are needed.

The learning model for debate, analysis, and findings based on digital life skills emphasizes the learning process centered on students or student centers, respecting friends' opinions, and the ability to analyze material and find new knowledge (Apdoludin & Martinisyamin, 2022). The learning model applied by educators greatly influences student learning (Hernández-González & Pérez, 2022; Joyce & Weil, 2003).

Literature Review

The approach used is a student-centered approach by implementing a debate, analysis, and findings learning model based on digital life skills. The components of the DAT model are 1) model syntax, 2) social system, 3) reaction principle, 4) support system, and 5) instructional impact (Apdoludin et al., 2016). The syntax of the DAT learning model (Apdoludin & Wiryotinoyo, 2017) is below.

Table 1. *Debate model syntax, analysis, and findings*

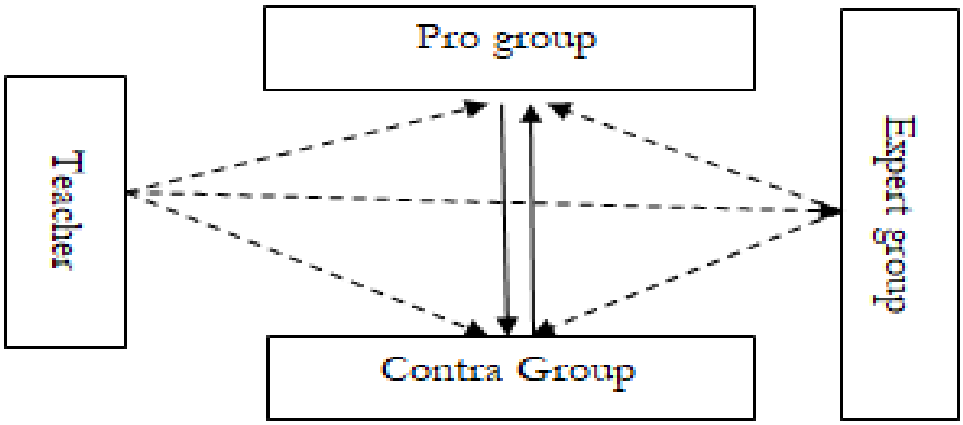
Phases	Model Components	Learning Activities
1	Communication of learning readiness information	a. Communication of learning objects b. Students get information from the teacher c. Students carry out learning activities and assignments from the teacher d. Forming a group of pros and cons e. Determining keynote speakers f. Reading the rules of debate
2	Guide	a. Focusing students' attention on the goals and topics of the debate b. Straightening the flow of students' thinking c. Creating a conducive debate situation d. Giving stimulus e. Preventing monopoly talks
3	Strategy	a. Encouraging active learning b. Growing confidence c. Encouraging students to investigate the problem d. Encouraging students to discover new knowledge from the topic being debated e. Encouraging students to discover implicit knowledge
4	Implementation	Implementation of the components of the debate learning model, analysis, and findings in science learning
5	Monitoring	a. Observing changes in student learning behavior b. Identifying learning problems c. Guiding and being a "friend" of learning d. Observing the interests and talents of students e. Providing motivation
6	Evaluation Formative	a. Understanding b. Encouraging c. Fluency in speech d. Teamwork
7	Revision	a. Summarizing the data found in the summative evaluation b. Knowing the location of the problem and the solution c. Receiving input from students
8	Summative Evaluation	Evaluating the debate learning model, analysis, and findings that have been corrected to find out whether the model is suitable for use or not

The social system is the interaction between educators and students in student-centered learning (Li et al., 2022), where the educator acts as a facilitator (Premsagar et al., 2022). Educators provide feedback and responses by prioritizing cognitive tasks. Educators must be sure that these cognitive tasks emerge with optimal instruction at the right time (Joyce & Weil,

2003). Support systems are everything that students need to explore information in learning, such as learning media (Apdoludin, 2023a). Instructional impact is a deeper understanding of concepts and improved learning outcomes (Kuncoro et al., 2023). Meanwhile, the accompanying impact is to increase students' enthusiasm for learning and create critical attitudes and creative thinking habits (Apdoludin, 2023b).

In the learning model of analytical debate, and findings based on digital life skills, there are three groups, namely: groups one and two facing each other are called the pro group and the con group, while the third group is neutral, called the expert group. The position of each group can be seen in the following figure:

Figure 1. *Study table position (Apdoludin et al., 2024)*



Information
——→ The lines of debate between the pro and con groups
- - - - - - → Lines of learning communication

Before the debate begins, two speakers from each group are determined first. The debate begins by giving the first speaker from one of the groups the opportunity to formulate their arguments clearly and carefully (Dantas & Cunha, 2020; Kennedy, 2007; Peace, 2011). Speakers from other groups respond to the opinions of the first speaker but may not repeat thoughts that have already been conveyed. Furthermore, the second speakers from each group are allowed to speak in the order of the first speakers (Cariñanos-Ayala et al., 2021; Cole et al., 2020).

Life skills are defined as skills that are learned to do something well (Sarbiran, 2002). Life skills can be defined as "*skills that help an individual be successful in living a productive and satisfying life*" (Lau et al., 2022). Additionally, life skills are the abilities that a person has to face problems reasonably, without feeling pressured, and then proactively and creatively seek solutions (Ali

& Juwita, 2020). Based on the definition before, life skills are positive and adaptive behavioral abilities that enable each individual to relate effectively to the demands and challenges of everyday life.

Methodology

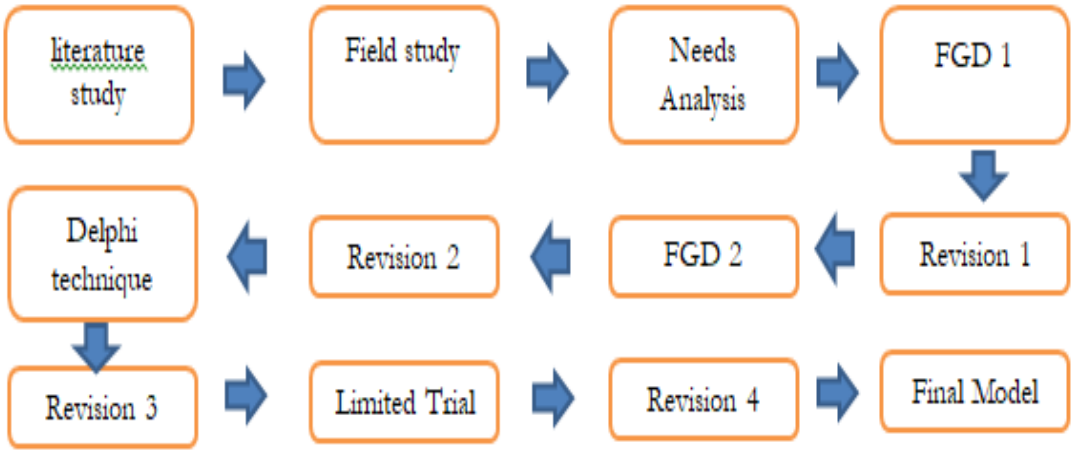
Research design, site, and participants

This type of research is development research or research and development (R&D). The main objective of research and development is to produce educational products that can be effectively utilized in educational institutions (Hardani et al., 2020).

Data collection and analysis

The development data in this research refers to the research and development (R&D) stage model recommended by Borg and Gall (Firdaus & Wilujeng, 2018). This research uses data collection techniques, namely model validation sheets, observations, questionnaires, and interviews. The research purpose was to determine the validity, practicality, and effectiveness of the digital life skill-based DAT learning model developed. The development procedure in the research refers to the following stages:

Figure 2. *Research procedures*



This research was conducted in the elementary school of the Bathin III District, Bungo Regency, Jambi Province, Indonesia. The research subjects during the limited trial were nine people, and the trial was expanded to 36 educator participants. The instruments used in this research were model validation sheets, observations, questionnaires, tests, and interviews. The validation sheet is used to measure the validity and effectiveness of the developed model (Eddy et al., 2012). After data validation, data interpretation is then carried out using the following score data interpretation categories.

Table 2. *Validity test criteria*

Feasibility Percentage	Qualification	Description
86%-100%	Very Feasible	Very suitable for use and no need for improvement
71%-85%	Worth	Feasible to use with improvements
61%-70%	Decent Enough	Decent enough and needs improvement
46%-60%	Less Feasible	Less feasible and needs improvement
≤45%	Very Less Feasible	Very inadequate and needs improvement

(Ermawati et al., 2024)

Data analysis in this research used descriptive analysis techniques. Qualitative and quantitative data are collected and analyzed thoroughly. The data obtained from the validation sheets were provided by material experts, language experts, users, and students using a Likert scale consisting of 4 (Very Appropriate), 3 (Appropriate), 2 (Not Appropriate), and 1 (Very Not Appropriate) (Juliandi, 2020). Data analysis techniques are carried out in the following manner:

Determine the standard deviation.

$$S = \frac{\sqrt{\sum(Xi-X)2}}{N}$$

Information:
S = sample standard deviation
X = average value
Xi = The value of learning outcomes
N = number of sample members

Determine the value $t_{count.}$

$$t_{count} = \frac{X1-X2}{\sqrt{\frac{S1}{n}+\frac{S2}{n}}}$$

Information:
X_1 = the average value of the experimental class
X_2 = the average value of the control class
S_1 = experimental class standard deviation
S_2 = control class standard deviation
N = number of sample members

Findings and Discussion

Model validity results

Model validation in this research has been carried out by learning model experts, language experts, and material experts. It aims to obtain information, criticism, and suggestions so that the debate analysis, and findings learning model based on digital life skills is developed into a quality product. The aspects validated by experts are as follows:

Table 3. *Aspects validated by experts*

No	Indicator	Rated aspect
1	Display Quality	The components of the learning model instrument for the analysis, and findings debate based on digital life skills are correct
2		Model instruments have components in colors, curved lines, letters, keywords, and images.
3		The instrument usage guide can be used as a learning medium
4		The model instrument user guide provides an easy understanding
5		Model instrument usage guidelines can spur creativity
6		The model instrument user manual is easy to use
7		Design a user guide for an attractive model instrument
8		The image layout is correct
9		The images used are appropriate to the material
10		The composition of the background text color is correct
11		The binding results are precise and neat
12	Language Quality	The writing is clear
13		Easy-to-read writing
14		The use of language is easy to understand and based on Indonesian language rules.
15		The language chosen is simple and easy to remember.
16		The delivery of the material has been completed
17	Graphic Quality	The shape and type of letters are appropriate
18		The font size is correct
19		The color of the letters is correct
20		The image size used is appropriate

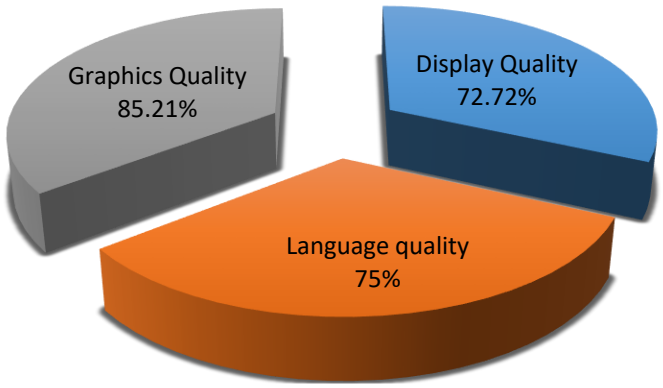
On the content feasibility aspect sheet, there are three indicators, each of which has a statement that has been filled in by the learning model expert validator, language expert validator, and material expert validator. This feasibility aspect contains statements that discuss the accuracy of the model design, the accuracy of language use, and the accuracy of the material. The validity results can be seen in the following table:

Table 4. *Product validation results*

Expert Validation	Maximum Score	Total Score	Percentage	Category
Learning Model Expert Validator	80	74	92.5%	Good
Language Expert Validator	80	63	78.75%	Good
Subject Matter Expert Validator	80	76	95%	Good

The table above shows the validation of the product of the learning model of debate, analysis, and findings based on digital life skills on the Learning Model Expert validator obtained 92.5% with the criteria of "very feasible" but with improvements. Furthermore, the language expert validator obtained 88.75% with the criteria of "feasible" but with improvements. It proves that the product of the learning model of debate, analysis, and findings based on digital life skills is feasible to be used in learning. It is based on the opinion of Ermawati et al. (2024) that learning assessment can improve the quality of learning outcomes. The average validation results per indicator of the assessment instrument submitted by researchers to the assessment validator are reviewed from the assessment category, question rubric, and assessment rubric. The following are the results of the assessment validation per indicator of the assessment instrument.

Figure 3. *The results of the assessment validation per indicator of the assessment instrument*



The validation results by learning model experts are based on three indicators, namely product model display quality, language quality, and graphic quality. The product model display quality obtained 72.72%. The language quality in the application of the model obtained 75%, and the

graphic quality of the model obtained 85.21%. Furthermore, the assessment results per indicator of the assessment instrument by language experts are as follows:

Limited trial results

Limited model trials evaluate the suitability between the sample and the population. If the results are appropriate, the model is empirically supported so that no improvements are needed. If otherwise, improvements need to be made. Limited trials are conducted to see the feasibility of mastering the debate model, analysis, and findings based on digital life skills that are developed so that they can be used in learning. Limited trials are also conducted on students with nine students at SDN 106/II Sungai Binjai, Bathin III District, Bungo Regency. The results of the limited trials are as follows:

Table 5. *Limited trial results*

No	Rated Aspects	Items Number									Total
		1	2	3	4	5	6	7	8	9	
1	The manual for using the debate model, analysis, and findings based on digital life skills is written very clearly so that it can help me in learning.	4	3	3	3	4	4	4	3	3	31
2	The learning objectives are written clearly so that it is easy for me to understand them	3	3	4	3	3	3	4	3	4	30
3	The material presented is easy for me to understand	3	3	3	4	3	4	3	3	4	30
4	The order of presentation of the material makes it easier for me to understand.	4	4	4	3	3	4	4	3	3	32
5	The competency test questions, and answer keys gave me clarity in understanding the material.	4	4	4	4	3	4	3	4	3	33
6	The terms in the model user manual are easy to understand.	4	3	3	3	3	3	3	3	3	28
7	The index arrangement makes it easy for me to understand the material and use the manual.	4	3	3	3	3	4	4	4	4	32
8	The manual for using the model is equipped with pictures so that it is easy for me to understand the material	3	4	4	4	3	4	4	3	4	33

9	The pictures in the model's user manual are very clear.	3	4	4	4	3	3	4	3	3	31
10	The images in the learning media are very interesting	3	3	4	3	3	4	4	3	4	31
11	The images in the media help me answer my curiosity about the material.	3	3	4	3	3	4	4	4	4	32
12	The language used is not boring	4	4	4	4	3	3	4	3	3	32
13	The sentences used in the model's user manual are not convoluted.	4	3	4	4	3	3	3	3	4	31
14	The language used in the model user manual is easy to understand	4	4	4	4	3	3	4	3	4	33
15	The font color and images in the user manual for this model are attractive	4	4	4	3	3	4	3	3	4	32
16	The front cover is attractive and represents the contents of the model's user manual.	3	4	3	3	4	4	3	3	3	30
17	The paper size in the user manual for this model is appropriate	3	3	3	4	3	3	4	3	3	29
18	The media of the model usage manual can help me understand the material concept correctly.	3	4	3	4	4	4	3	4	3	32
19	The model user manual spurred my creativity	4	3	3	4	4	3	4	3	3	31
20	The model's user manual allows me to learn independently.	3	3	3	4	4	3	4	4	4	32
Total assessment score											625
Maximum score											720
Model quality percentage											86.80%
Interpretation of model											Category " Strongly agree " (587-720)

Table 5 explains that scores of 180 to 315 are categorized as strongly disagree, 316 to 450 are categorized as disagree, 451 to 586 are categorized as agree, and 587 to 720 are categorized as strongly agree, the level of student agreement towards the debate model, analysis, and findings

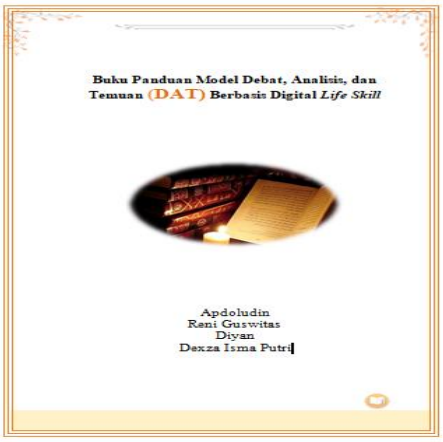
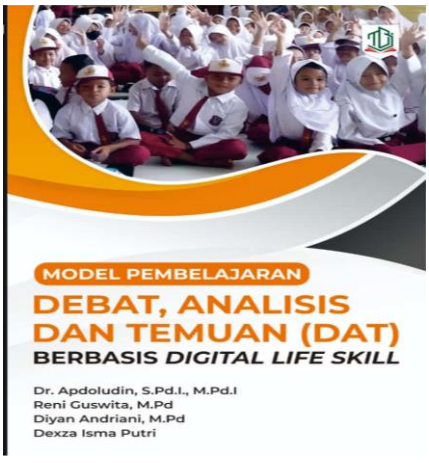
based on digital life skills based on the student questionnaire can be categorized as strongly agree with an achievement of 625 (strongly agree).

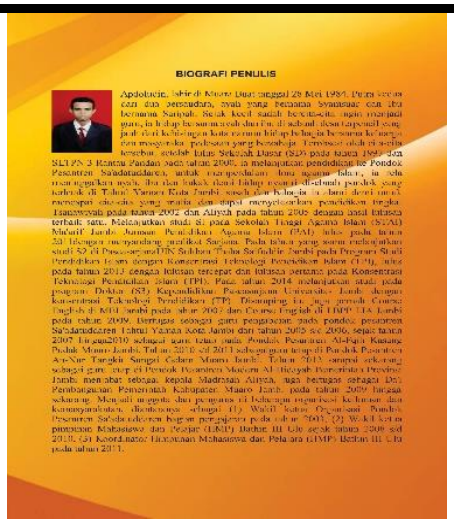
Product improvement

Based on comments and suggestions from validators and users, the researcher made the following improvements: 1) the main components of the model were changed according to suggestions. Previously; (a) components of the debate, analysis, and findings (DAT) model in independent guidance, (b) components of the debate, analysis, and findings (DAT) model in classroom activities, (c) components of the debate, analysis, and findings (DAT) model in-home activities.

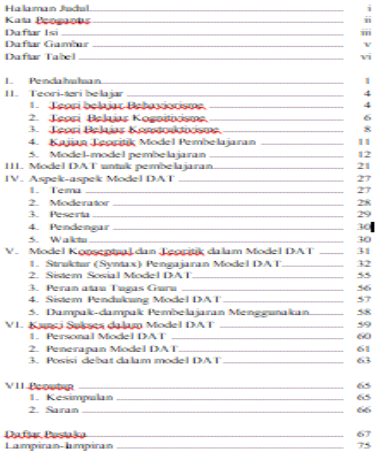
Improvements were made to the components of the digital life skill debate, analysis, and findings model in 1) self-guidance, components of the digital life skill debate, analysis, and findings model for home activities, and components of the digital life skill debate, analysis, and findings model in classroom activities. 2) The subject matter is emphasized on learning digital life skill debate analysis, and findings, the material displayed is material that contains the latest controversial elements for students so that it can foster a spirit of debate; the material displayed is material that contains implicit knowledge. 3) Improvement of the instrument, previously there was no questionnaire response instrument grid for teachers and students. 4) The digital life skill debate, analysis, and findings model book is designed in such a way that it is easy for users to understand. The researcher decided to add text in commands that must be carried out by the user and 5) clarify the contents of the model components in each stage so that step-by-step can be easily understood by users.

Table 6. *Product revision results*

Before	After
Front Cover	Front Cover
	
Back Cover	Back Cover



List of contents



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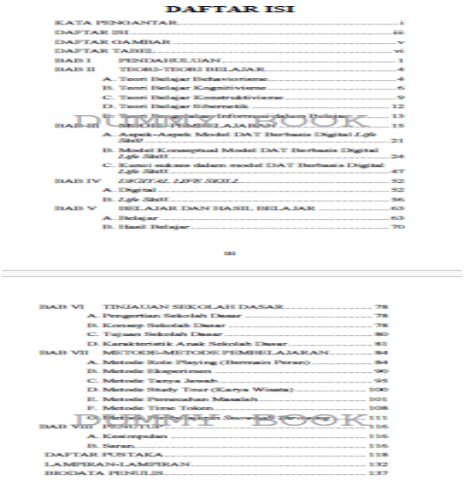

Expanded trial results

After improvements were made to the debate model device, analysis, and findings based on digital life skills according to suggestions from the implementers in the field, an expanded trial was then conducted. The expanded model trial was intended to see the model's suitability, while improving the model that had been obtained at the limited trial stage. The expanded model trial was conducted at SDN 106/II Sungai Binjai, Bungo Regency. The trial of the debate model device, analysis, and findings based on digital life skills was conducted on 36 students. The results of the expanded trial are stated in the following table:

Table 7. *Expanded trial results*

No	Rated aspects	Quantity
1	The manual for using the debate model, analysis, and findings based on digital life skills is written very clearly so that it can help me in learning.	124
2	The learning objectives are written clearly so that it is easy for me to understand them	129
3	The material presented is easy for me to understand	125
4	The order of presentation of the material makes it easier for me to understand.	127
5	The competency test questions, and answer keys gave me clarity in understanding the material.	124
6	The terms in the model user manual are easy to understand.	122
7	The index arrangement makes it easy for me to understand the material and use the manual.	132
8	The manual for using the model is equipped with pictures so that it is easy for me to understand the material	134
9	The pictures in the model's user manual are very clear.	130
10	The images in the learning media are very interesting	129
11	The images in the media help me answer my curiosity about the material.	134
12	The language used is not boring	128
13	The sentences used in the model's user manual are not convoluted.	124
14	The language used in the model user manual is easy to understand	129
15	The font color and images in the user manual for this model are attractive	135
16	The front cover is attractive and represents the contents of the model's user manual.	129
17	The paper size in the user manual for this model is appropriate	125
18	The media of the model usage manual can help me understand the material concept correctly.	129
19	The model user manual spurred my creativity	132
20	The model's user manual allows me to learn independently.	135
	Total assessment score	2.576
	Maximum score	2.880
	Model quality percentage	89.51%
	Interpretation of model	"Strongly Agree" (2.341-2.880)

The results of students' answers on the questionnaire provided by the researcher showed that students were happy with the learning model of debate, analysis, and findings based on digital

life skills in learning. The happy answers shown by students are one part of the data that students prefer the model of debate, analysis, and findings based on digital life skills. The feelings of happiness and liking of students are evidence that students are interested and enthusiastic about learning that uses the model of debate, analysis, and findings based on digital life skills.

The data is with the presentation of the fourth-grade teacher: "Learning using the debate, analysis, and findings model based on digital life skills can make students more active, dare to ask questions, answer questions, be responsible, and be able to analyze the material presented in depth." The researcher's observation on 08/13/2024 showed that students looked active when the teacher used the debate, analysis, and findings model based on digital life skills. Therefore, the researcher can conclude that the debate, analysis, and findings model based on digital life skills for learning in elementary schools is effectively applied to fourth-grade students of SDN 106/II Sungai Binjai, Bathin III District, Bungo Regency, Jambi Province, Indonesia. The interview results on August 15, 2024, showed that students were more active and had high enthusiasm when the debate, analysis, and findings model based on digital life skills were applied.

Discussion

This research was conducted in class IVA of SDN 106/II Sungai Binjai Bungo. A validity test is a procedure to ensure whether the questionnaire to be used to measure research variables is valid or not. A questionnaire is said to be valid if it can present or measure what is to be measured (research variables). In other words, validity is a measure that shows the validity of an instrument that has been determined. Details of statements that correlate significantly with the total score indicate that the details of the statement can provide support in proving what is to be proven. The r-table in this research used 30 respondents with $\alpha = 0.05$; an r-table of 0.2960 was obtained. A statement item is said to be valid when r-count> r-table. Another measure that can be used to assess whether an instrument is valid is the sig. value; the statement is said to be valid when the sig. value is less than 0.05.

Hypothesis testing of the research using the t-test on the experimental group with the results obtained, t-count = 9.01, while t-table with df = 25 at a significant level of 5% is 2.068. Therefore, t-count> t-table (9.01> 2.068) which means (Ha) in the research is accepted, namely there is an influence between the use of debate learning models, analysis, and findings based on digital life skills on the learning outcomes of students at SDN 106/II Sungai Binjai, Bathin III District, Bungo Regency.

Through the application of debate models, student analysis, and findings are allowed to think deeply to construct new knowledge through the process of debate and analysis of the concepts learned. The debates, analysis, and findings learning model can provide concrete experiences so that students gain more learning experiences. In addition, it also provides more opportunity to reflect on the experience in generalization and abstraction related to the next learning experience activity.

Conclusion and Recommendations/Implications

Based on the research that has been conducted, the researcher concluded that the instrument's reliability was 74 with 92.5% (good) by the learning model design expert. 63 with 78.75% (good) by the language expert. 76 with 95% (good) by the material expert and 2880 with 89.51% (strongly agree) by the students. The results of the t-test calculation showed that the t-count score was greater than the t-table (th: 4.276 > tt: 1.994). It shows that (1) the digital life skill-based debate, analysis, and findings model improves students' thinking skills, trains students' skills, and can help students analyze learning in depth. 2) Through the digital life skill-based debate, analysis, and findings model, teachers are helped in the classroom so that learning takes place more systematically, is implemented, and is significant in improving students' understanding, and (3) Learning with the digital life skill-based debate, analysis, and findings model can make learning more effective.

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Biographical Notes

APDOLUDIN is a lecturer at Universitas Muhammadiyah Muara Bungo, Jambi Indonesia.

RENI GUSWITA is a lecturer at Universitas Muhammadiyah Muara Bungo, Jambi Indonesia.

DIYAN ANDRIANI is a lecturer at Universitas Merangin, Jambi Indonesia.

DEXZA ISMA PUTRI is a lecturer at Universitas Muhammadiyah Muara Bungo, Jambi Indonesia.