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FEASIBILITY STUDY OF ABACUS TRAINING MODEL FOR IBTIDAIYAH MADRASAH TEACHERS: CASE IN BANDAR LAMPUNG

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Abstract:
This research aims to analyze the feasibility of the abacus skills training management model product designed to improve the competency of Madrasah Ibtidaiyah teachers. Product feasibility assessment is carried out through validation tests by design experts, material experts and language experts, practitioners and then the results are in FGD. The assessment results show that the product received a score of 78.50% from design experts in the "decent" category, 85% from material experts in the "very feasible" category, and 80% from language experts in the "very feasible" category. Overall, the average model feasibility value reached 81.2%, which is included in the "very feasible" category. These findings indicate that the abacus skills training management model has significant potential to be implemented in supporting the competency development of Madrasah Ibtidaiyah teachers. It is hoped that this model can be an innovative solution in improving the quality of learning in madrasas.
Keywords: *Product feasibility, training management model, abacus skills, Madrasah Ibtidaiyah Teacher*

INTRODUCTION

Education has a very vital role in shaping the quality of human resources. In the context of education at Madrasah Ibtidaiyah (MI), the quality of teaching is very dependent on the teacher's abilities and skills in providing learning that suits the needs of students (Meldona, 2009). Therefore, developing teacher competency is one of the key factors in improving the quality of education at Madrasah Ibtidaiyah. Even though there have been various efforts to improve the quality of education, many Madrasah Ibtidaiyah teachers still face challenges in developing skills that are relevant to the demands of the times.

Abacus, as a traditional calculating tool, has been proven to have benefits in developing cognitive abilities (Lu, 2023) and concentration (Li, 2016). Mastery of abacus skills can help MI teachers support the learning process in the classroom in a more interactive and fun way. However, the existing reality shows that there are still many Madrasah Ibtidaiyah teachers who do not have adequate skills in using the abacus as a learning tool. Therefore, a training model is needed that can help improve abacus skills among MI teachers.

It is important to develop an abacus skills training management model to improve the abilities of Madrasah Ibtidaiyah teachers. This model must be designed systematically and structured so that the training provided is effective and can provide maximum benefits (Sumarni, 2021). A good training model will

help teachers master abacus skills and apply them in daily learning activities in madrasas.

The importance of abacus skills training for MI teachers is also in line with efforts to improve the overall quality of education. In order to improve the quality of education, training for teachers is a very necessary step to develop their competence (Artha, 2021). Training that is relevant to teachers' needs will have a significant impact in improving their ability to provide quality learning for students (Hajaroh, 2021).

Apart from that, abacus skills training can also open up opportunities for teachers to develop creativity in teaching (Anugrahana, 2019). By mastering abacus skills, it will be easier for teachers to create a more enjoyable and interesting learning atmosphere (Oktariana, 2024). Therefore, abacus skills training must be one of the focuses in developing the competency of Madrasah Ibtidaiyah teachers.

However, despite the clear benefits of the abacus, training in this skill among Madrasah Ibtidaiyah teachers is still limited. This is caused by various factors, including a lack of understanding of the benefits of the abacus, limited facilities, and a lack of well-organized training. Therefore, research is needed to identify the feasibility of an abacus skills training model that can be implemented in Madrasah Ibtidaiyah.

This research aims to analyze the feasibility of an abacus skills training management model product specifically designed for Madrasah Ibtidaiyah teachers. With this research, it is hoped that it will be known to what extent the training model developed can be accepted by MI teachers and has a positive impact on improving their skills. This feasibility assessment is important to ensure that the training model created can be implemented effectively and efficiently.

In general, the aim of this research is to create an abacus skills training model that suits the needs of Madrasah Ibtidaiyah teachers, and to ensure that this model can provide real benefits for improving the quality of learning in madrasas. It is hoped that this research can produce a training model that is not only beneficial for teachers, but can also improve the quality of education at Madrasah Ibtidaiyah as a whole..

It is also hoped that the results of this research can open up opportunities for the development of abacus skills training models in other madrasas in Indonesia. Thus, this training model can be expanded and applied in various regions, in order to increase teacher competence in providing more interactive and quality learning. It is also hoped that this research can contribute to enriching knowledge about the importance of developing practical skills for teachers in madrasas, so that they can face increasingly complex educational challenges in the future.

RESEARCH METHODS

This research uses a qualitative approach with an evaluative design to analyze the feasibility of the abacus skills training management model product designed for Madrasah Ibtidaiyah teachers. This approach was chosen because researchers focused on assessing and evaluating the feasibility of the training model being developed, as well as its ability to be accepted and implemented by MI teachers. This type of research is development research or Research and Development (R&D), which aims to develop and assess the feasibility of an abacus skills training model designed for Madrasah Ibtidaiyah teachers. This research measures the extent to which the training model developed is acceptable to MI teachers and its positive impact in improving their skills.

The subjects in this research involved design experts, material experts, language experts and relevant practitioners, whose assessment results were then collected and discussed in a focus group discussion forum (FGD). Design experts will assess the feasibility of the training model from design aspects, including the structure and visualization of training materials. Material experts will assess the suitability and appropriateness of the training materials delivered to MI teachers, while language experts will evaluate the use of language in the training materials,

ensuring that the language used is easy to understand and appropriate to the educational context at Madrasah Ibtidaiyah. The instrument used in this research was an assessment questionnaire given to experts and practitioners to measure the feasibility of the training model product. This questionnaire contains indicators that include design, material and language, with a Likert rating scale that categorizes feasibility into very feasible, feasible, less feasible and not feasible.

The research procedure begins with the preparation stage, where the abacus skills training model that has been developed is prepared to be tested by experts and practitioners. After that, a validation test is carried out, where the prepared training model will be given to experts and practitioners for assessment. The assessment will cover three aspects: design, materials and language. Each expert provides an assessment based on previously established criteria. The assessment results from experts and practitioners will be analyzed quantitatively by calculating the average feasibility score for each category. The scores obtained are then categorized into feasibility levels, namely very feasible, feasible, or not feasible.

Data obtained from the assessments of experts and practitioners will be analyzed using quantitative descriptive analysis. The scores given by experts and practitioners for each indicator will be averaged, then categorized on the following scale: 81% - 100%: Very Decent, 61% - 80%: Decent, 41% - 60%: Not Decent, and 0% - 40%: Not Eligible. The results of this average score will provide an idea of the level of feasibility of the training model being developed, whether the model is suitable for implementation in Madrasah Ibtidaiyah or requires further improvement. This research is planned to be carried out over three months, starting from the training model development stage to the data analysis and report preparation stages. This research will be conducted at the State Ibtidaiyah Madrasah in Bandar Lampung City as the research location

To ensure the validity of the data, this research uses internal validity with instruments that have been tested by experts in the field. In addition, external validity was obtained by testing the training model on other groups of MI teachers after the validation stage. It is hoped that by using this method, this research can produce useful information regarding the feasibility of an abacus skills training model that can be implemented in Madrasah Ibtidaiyah to improve teacher competence in providing quality learning..

RESULTS AND DISCUSSION

The feasibility of the product design concept model for management of abacus skills training for State Madrasah Ibtidaiyah teachers in Bandar Lampung City and the abacus skills training module product as an outcome product in this research, is carried out by means of socialization and discussion regarding the solution that has been designed through validation tests from a team of experts and conducting Focus Group Discussion (FGD). This product feasibility testing stage includes various possible opinions and suggestions from various research sources, so that significant modifications may be needed in the refinement and analysis stage of the initial design of the Abacus skills training management model.

Based on the results of expert validation related to the hypothetical model, the following were obtained:

Table 1.
Expert Suggestions on Design, Materials and Language from FGD Results

No	Source person	Position	Suggestion

1	Dr. Ahmad Fauzan, M.Pd.	Lecturer at UIN Raden Intan Lampung	● In the initial design of the abacus skills training management model, the preparation, planning, implementation, monitoring, evaluation and reporting parts should be moved as part of the process ● The output must be clear as an indicator of training success ● The outcome is not only an abacus skills training module but also an abacus skills training management concept model ● In the initial design (chart) it is not yet clear what the concept of Islamic education management is
2	Prof. Dr. Yuberti, M.Pd..	Lecturer at UIN Raden Intan Lampung	● Add control components after evaluation and reporting. Because there must be feedback as a result of evaluation and reporting ● There are two outputs in this research, namely the design of an abacus skills training concept model and an abacus skills training development module ● Preparation, planning, implementation, monitoring, evaluation and reporting, and feedback are placed in the process, because they are part of the process ● Place the input component at the beginning, so that readers understand the flow of the concept model design.
3	Prof. Dr. Ujang Suparman, Ph.D.	Lecturer at UIN Raden Intan Lampung	● In the outcome design, the final product of this research should be a training concept model and an abacus skills training module based on Islamic teachings ● In the training module, examples of solving practice questions from the implementation of abacus skills training should be described so that the reader/teacher understands them more deeply. ● The language structure in the module must be carefully reviewed, adjusted to the training objectives and the characteristics of the training participants

Table 2.
Practitioner Suggestions from FGD Results

No	Source person	Position	Suggestion
1	Hj. Fakihah, M.M.Pd.	Head of MIN 6 Bandar Lampung	● The input component in point six should be sufficient participation from parents, government, academic community and alumni ● At the preparation stage it is necessary to mention the methods used in identifying and analyzing the need for model development
2	Hj. Munashiroh, M.M.Pd.	Head of MIN 12 Bandar Lampung	● The process should be described according to the stages of abacus skills training management ● In the training module as a research outcome, the training objectives and how to answer the questions are explained
3	Yusnani, S.Ag.	Teacher MIN 5 Bandar Lampung	● The input components should be prepared, while the input components are transferred to the output. Because the output in this research must meet the 6 points of abacus skills training management ● The Islamic concept does not yet show good outcomes in the design of the abacus skills training management concept model.
4	Sabta Ma'rifah, S.Pd.I	Teacher MIN 6 Bandar Lampung	● Abacus skills training management design chart, the characteristics of the Islamic religion as a characteristic of madrasas and MPI doctoral graduate products are not yet visible ● The training module should describe examples of implementing abacus skills training, so that readers/teachers understand it in more depth.
5	Hizbuddin Burmeli, M.M.	Guru MIN 12 Bandar Lampung	● Preparation, planning, implementation, monitoring, evaluation and reporting, and feedback are processed, because they are part of the process ● There needs to be an emphasis on preparing to socialize the importance of this training in the form of an abacus skills training policy in each educational unit
6	Khoiri, M.Pd.	Guru MIN 5 Bandar Lampung	● Efforts are needed to optimize madrasah resources, by increasing teachers' abilities and knowledge in implementing abacus skills training,

			both in learning activities in the classroom and outside the classroom ● There is a need to improve madrasah infrastructure to implement this abacus skills training concept. ● There has been no monitoring of the implementation of this abacus skills training in madrasas either from the relevant government or from outside parties (education observers)
7	Marfiroh	Guru MIN 12 Bandar Lampung	● Abacus skills training should be supported by facilities and infrastructure and teacher assistance so that the training results are more effective.

Based on the results of testing carried out through FGD, the design of the abacus skills training management model at the State Ibtidaiyah Madrasah in Bandar Lampung City and the abacus skills training module turned out to be insufficient in dealing with problems in the field. Other components are needed to overcome the problems that arise. Based on input from the expert team and school residents at the State Ibtidaiyah Madrasah in Bandar Lampung City, the researchers added another component to the design of the management model for abacus skills training at the State Ibtidaiyah Madrasah in Bandar Lampung City. So the abacus skills training management model is built as follows: (1) The input component includes preparing a design for the abacus skills training management model by identifying and analyzing model development needs through methods, interviews, observations, questionnaires and literature reviews. (2) The process component includes 5 (five) stages of abacus skills training management with an added control component, so that the abacus skills training management process includes; planning, implementation, monitoring, evaluation and reporting, and control. (3) The output component contains the desired success of the management model design. Abacus skills training with increasing teacher character, namely having achievement motivation, not easily giving up, self-confidence, creative, innovative, brave and patient. (4) Making Islamic concepts the basic basis in designing management models for abacus skills training, including (1) having a plan: al-Hasyr verse 18, (2) having unity of movement and division of work; Ash-Shaff verse 14, (3) consolidation; Ali Imran verse 103, and (4) consistent; Ash-Shaff verses 2 – 3.

Other input provided from the FGD results on the components of the Abacus skills training management model consists of context, input, process, output and outcome. In the input component it is necessary to add the techniques used in preparation. In the output component, it is necessary to add evaluation and supervision from parties outside the school, namely the Provincial and City Ministry of Religion, as well as the academic community from universities who will play a role in controlling, evaluating and providing guidance so that the implementation of abacus skills training management can be carried out more optimally.

Based on the results of the assessment of the abacus skills training module test as a research product, by carrying out validation tests on a team of design experts, material experts and language experts, the following test results were obtained:

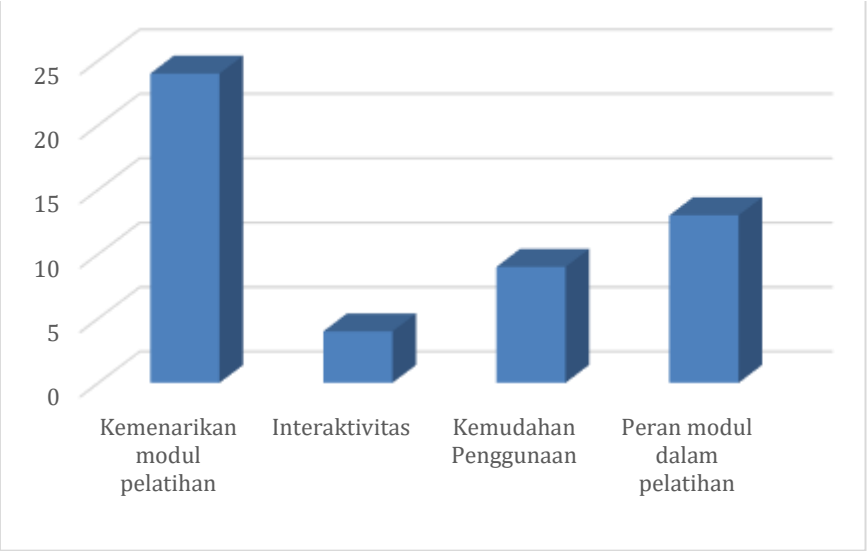
Validation of design experts by Mrs. Prof. Dr. Hj. Yuberti, M.Pd., with product assessment points stated in the following table:

Table 3
Design Expert Validation

No	Aspect	Mark Design Expert	Value Percentage
A	**The attractiveness of the training module.**		
	1. Color match	4 (Decent)	80%
	2. Good color quality	4 (Decent)	80%
	3. Interesting text type	4 (Decent)	80%
	4. Text size appropriate to the training participants	4 (Decent)	80%
	5. Consistency of content and cover	3 (Quite Decent)	60%
	6. Interesting type of animation	3 (Quite Decent)	60%
	7. The size of the animated image is appropriate	3 (Quite Decent)	60%
	Amount	**25**	
B	**Interactivity**		
	8. Increase participant activity in training	4 (Decent)	80%
	Amount	**4**	
C	**Ease of Use**		
	9. Easy to understand	4 (Decent)	80%
	10. Conformity with the instructions for using the training module	5 (Very Worth It)	100%
	Amount	**9**	
D	**The role of modules in training**		
	11. Clear material and examples	5 (Very Worth It)	100%
	12. There are directions for each activity	5 (Very Worth It)	100%
	13. Develop training participants' learning motivation	3 (Decent Enough)	60%
	Amount	**13**	
	Total number	**51**	
	Maximum score	**65**	
	Average score (%)	**Worthy**	**78,5%**

Source: Design expert validation assessment scores

In table 3 it is known that, according to design experts, the abacus skills training management module is very valid, very interesting, has interactivity, is easy to use, and can play a role in the learning process with a design feasibility percentage of 78.5%. Thus, it is concluded that the design of the abacus skills training management module has met the design criteria in developing the abacus skills training module. For more details, see the following graph:



Graph 1. Design Expert Product Validation Test Results

Material expert validation by Dr. Ahmad Fauzan, M.Pd.. (Management Expert from UIN Raden Intan Lampung), with the product assessment points stated in the following table:

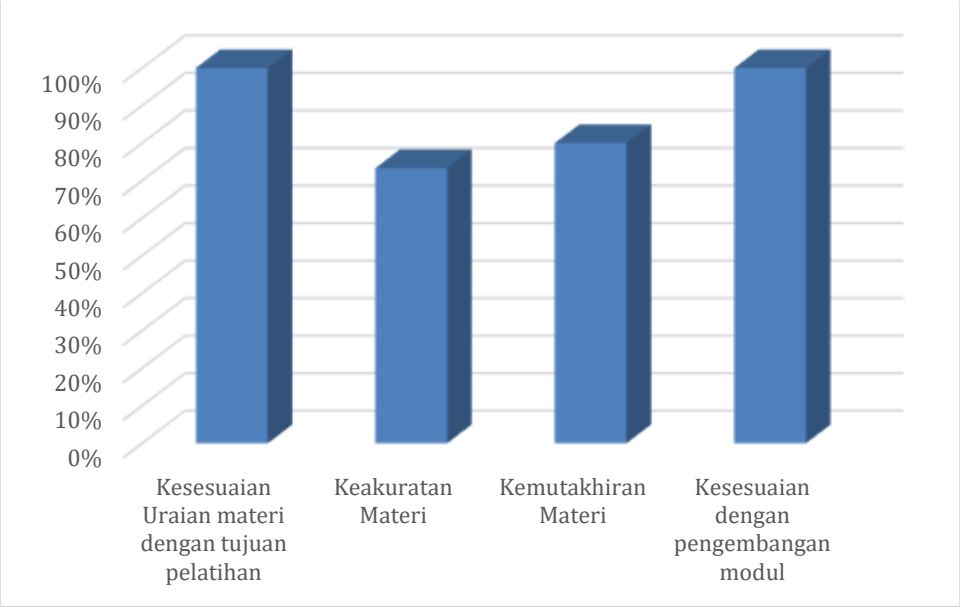
Table 4
Material Expert Validation

No	Aspect	The Value of Design Experts	Value Percentage
A	**Conformity of material description with training objectives**		
	1. Description of the training material in accordance with the training objectives	5 (Very Worth It)	100%
	2. Description of the material in accordance with the research objectives	5 (Very Worth It)	100%
	Amount	**10**	**100%**
B	**Accuracy of Material**		
	3. The facts and phenomena in the training module are in accordance with reality and are efficient in training	3 (Decent Enough)	60%
	4. Presenting pictures, tables, diagrams or illustrations is efficient in increasing training participants' understanding	4 (Worthy)	80%

	5. The terms used in the module are appropriate to the characteristics of the training participants	4 (Worthy)	80%
	Amount	**11**	**73,3%**
C	**Update of Material**		
	6. The referenced bibliography is the latest library	4 (Worthy)	80%
	7. The material presented reflects current events, occurrences or conditions (up to date)	4 (Worthy)	80%
	Amount	**8**	80%
D.	**Conformity with module development**		
	8. Description of the material in the training module in accordance with the module development steps	5 (Very Worth It)	100%
	Amount	**5**	**100%**
	Total number	**34**	
	Maximum score	**40**	
	Average score (%)	**Worthy**	**85%**

Source: Material expert validation assessment scores

In table 4, it is known that the material expert validation results from 4 (four) aspects of material assessment in the abacus skills training module are 85%, which is categorized as very valid, effective, and can be used with minor improvements. For more details, see the following graph:



Graph 2. Material Expert Product Validation Test Results

Linguist validation by Mr. Prof. Dr. Ujang Suparman, Ph.D. (Indonesian language expert from the University of Lampung), with aspects of product assessment points stated in the following table:

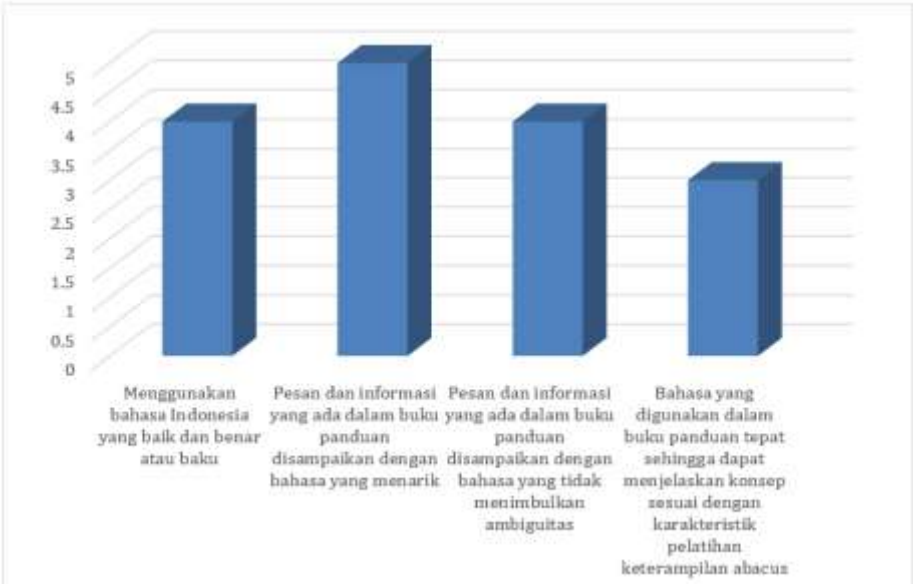
Table 5.
Language Expert Validation

No	Aspect	Language Expert Rating	Percentage Value
1	Uses correct and proper Indonesian language (standard)	4 (Appropriate)	80%
2	The messages and information in the manual are conveyed in an engaging language	5 (Very Appropriate)	100%
3	The messages and information in the manual are conveyed in a way that avoids ambiguity	4 (Appropriate)	80%
4	The language used in the manual is appropriate and effectively explains concepts in accordance with the characteristics of the abacus skills training	3 (Fairly Appropriate)	60%
Total		16	
Maximum Score		20	
Average Score (%)		Appropriate	80%

Sumber: Skor penilaian validasi ahli bahasa

In table 5, it is known that, according to linguists, 80% of the abacus skills training modules are categorized as valid, use good and correct Indonesian, are interesting, do not create ambiguity, and are in accordance with the characteristics of abacus skills training. Thus, it is concluded that the language of the abacus skills training module meets the criteria for good and correct

Indonesian. For more details, see the following graph:



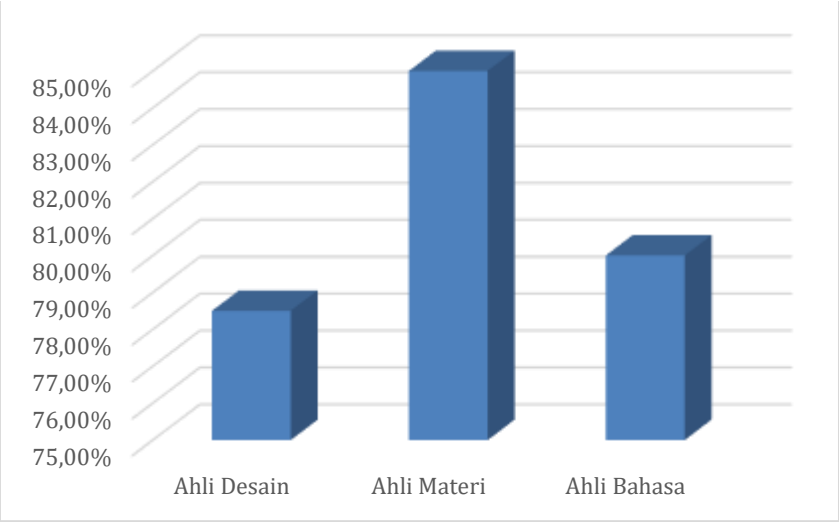
Graph 3. Linguist Product Validation Test Results

Based on the results of the three experts' assessments, the final scores were obtained as follows:
Tabel 6

Design, Material and Language Expert Validation

Expert	Validation Test Score	Quality
Design Expert	78.5%	Very Appropriate
Content Expert	85%	Very Appropriate
Language Expert	80%	Very Appropriate
Average	**81.2%**	**Very Appropriate**

Based on the product validation test results from the three experts, the final score was 81.2% in the very feasible category. This means that the product in this research is very valid subject to revisions to the parts suggested by expert lecturers for improvement. For more details, see the diagram below:



Graph 4. Validation Test Results of the Training Module Expert Team

The following is the initial product revision table for the abacus skills training module which can be seen in the following table:

Table 7
Initial Product Revisions

Expert	Revision
Design Expert	1. Add international references/literature related to the training module, including eBooks. 2. The prologue and expert reinforcement should be complemented with contributions from other competent experts. 3. Minor layout and font adjustments for improved academic ethics.
Content Expert	1. Provide more detailed explanations for each table. 2. Use clearer and more engaging fonts. 3. Expand the bibliography to include references aligned with the abacus skills training guide theme.
Language Expert	1. Some font sizes are too large; several sections need to be adjusted. 2. The font type is appropriate, but for questions, use a consistent font style. 3. Add a brief explanation of the abacus. 4. Clarify the term "abacus" and explain its equivalence with "sempoa" to help readers understand both the similarities and differences.

Furthermore, improvements were made to the initial design of the abacus skills training management concept model and the abacus skills training module based on comments, responses, criticism and suggestions that had been obtained from validators as shown in the table above. Here's what the product looks like before and after validation tests from design, material and language experts:

Before Validation Test After Validation Test

Figure 1. Training Module Cover Before and After Product Validation Test

KATA PENGANTAR

KATA PENGANTAR

Sebelum Uji Validasi Setelah Uji Validasi

Gambar 4.13 Kata Pengantar Modul Pelatihan Sebelum dan Sesudah Uji Validasi Produk

DAFTAR ISI

DAFTAR ISI

Sebelum Uji Validasi Sesudah Uji Validasi

Gambar 4.14 Daftar Isi Modul Pelatihan
Sebelum dan Sesudah Uji Validasi Produk

Sebelum Uji Validasi Setelah Uji Validasi

Gambar 4.15 Contoh Isi Modul Pelatihan
Sebelum dan Sesudah Uji Validasi Produk

Sebelum Uji Validasi Sesudah Uji Validasi

Figure 4.16 Training Module Bibliography
Before and After Product Validation Test

Feasibility of the abacus skills training management model product for State Madrasah Ibtidaiyah teachers in Bandar Lampung City through FGD and validation by a team of material experts, language experts and design experts, and FGD with results; (1) includes: the input component includes preparation, the process component includes 5 (five) stages of management of abacus skills training with the control component added and making Islamic concepts the basic foundation of the development process, the output component contains the desired success of the model design, and (2) the results of the expert validation test, obtained a score of 81.2% with a very valid category with the condition of revision of the parts suggested by the expert lecturer for improvement.

The theory underlying the findings of this research is Plomp's theory that it is necessary to test the model design through discussion with a team of experts

to improve the initial design of the development model (Plomp, 2007). This is also strengthened by Aaker's theory that it is necessary to carry out repeated experiments to obtain a valid development model (Den, 1999). Luckner also stated that the model design must be subjected to rigorous testing with discussion by a team of experts in order to obtain improvements to the model being developed so as to obtain new design principles (Luckner, N., Purgathofer, P., & Fitzpatrick, 2018).

Based on several theoretical foundations, it is understood that to see how effective the initial model that has been designed is, it is necessary to conduct exploration with all respondents and discuss with experts about the new abacus skills training management model. The model design testing carried out in this research took the form of an idea test. From the results of the idea tests carried out, improvements will be made to the initial set of model designs.

The findings in this research are in accordance with the results of Fitriani's research that in testing the model development design, FGD, observation, questionnaires and interviews were carried out (Orvik, 2013). Neo's research results show that FGD not only functions as a way to produce important, urgent data in society, but also increases the quality and quantity of data produced (Neo, 2022). It is also relevant to Nyumba's opinion that FGD is often used as a qualitative approach to gain an in-depth understanding of social problems (Nyumba, 2018).

In addition to conducting Focus Group Discussions (FGD), product feasibility should also be tested through expert validation covering four aspects: content/material, presentation, language, and graphics (Supriadi, 2019). Hernan V. Portana's research also emphasizes that product feasibility testing by an expert team is necessary to determine whether the developed product is acceptable and suitable for use (Portana, 2021). Marjanah's study found that to determine the feasibility and applicability of a developed product, its feasibility must be analyzed by material and media experts (Marjanah, 2020). Andi Paida's research explains that in research and development (R&D), the feasibility testing method used is expert assessment, involving three experts to evaluate and assess the feasibility of instructional materials. Four feasibility components are assessed: content or instructional material, presentation, graphic design, and language elements (Paida, 2018).

Based on these findings and relevant research, it can be concluded that product feasibility in this study was tested through FGD and expert validation. As the findings of this study show, the feasibility testing of the abacus skills training management product for teachers at Madrasah Ibtidaiyah Negeri in Bandar Lampung was conducted through FGD and expert validation by design experts, content experts, and language experts. The results are as follows: (1) In the input component, the preparation phase is included; in the process component, five stages of abacus skills training management were added, along with a control component and the incorporation of Islamic concepts as the foundational basis for the development process; the output component contains the desired success of the model design; and (2) The results of expert validation obtained a score of 81.2%, with the category of "very valid," contingent on revisions to sections recommended by expert lecturers..

CONCLUSION

The feasibility of the abacus skills training management model for teachers at Madrasah Ibtidaiyah Negeri in Bandar Lampung was assessed through expert validation by design experts, content experts, and language experts, as well as

through Focus Group Discussions (FGD). The results showed the following: design expert score of 78.5% (appropriate), content expert score of 85% (very appropriate), language expert score of 80% (very appropriate), and an overall average product score of 81.2% (very appropriate).

Based on these evaluation results, which show that the abacus skills training management model for teachers at Madrasah Ibtidaiyah Negeri in Bandar Lampung has an average feasibility score of 81.2% (very appropriate), it is recommended to proceed with the implementation of this model at the madrasah. However, several improvements in the aspects of design, content, and language could be made to enhance its effectiveness, especially in the design aspect, which received a score of 78.5% (appropriate). Additionally, this model should be expanded for implementation in other madrasahs, with continuous monitoring and evaluation to ensure its effectiveness. Regular feedback collection from training participants is also necessary to make further adjustments, as well as the development of other professional programs to enhance the overall teaching quality and teacher competencies..

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