Development of UKBM Based on Tpack in the Subject of Islamic Cultural History

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KEYWORDS

UKBM, TPACK, Islamic Cultural History

ABSTRACT

This study aims to develop a TPACK-based Independent Learning Activity Unit (UKBM) in the subject of Islamic Cultural History (SKI) grade VII. Based on the needs analysis through a questionnaire, 70.8% of students stated the need for learning resources that support SKI learning. This research uses the Borg & Gall model development method adapted to the ADDIE model (Analysis, Design, Development, Implementation, Evaluation). The final product is a TPACK-based UKBM in the form of printed teaching materials. Expert validation showed excellent results with a percentage of 95% for material presentation validation and 92% for media validation. The trial results showed that students' responses to the TPACK-based UKBM were very positive, with a percentage of 95% stating that this product had a positive effect on SKI learning. Learner activity observations recorded a percentage of 52%, indicating effectiveness in improving learning activities. A total of 82% of learners gave positive responses to the TPACK-based UKBM, as evidenced by the high level of interest in this product. These findings confirm that the TPACK-based UKBM has met the criteria of valid, practical, and effective, and can be used as an innovative independent learning resource and support SKI learning in grade VII.

1. Introduction

One of the elements that influences learning is the use of learning resources and media. Teaching materials must be adjusted to the circumstances of the students and the teacher's learning approach. The use of UKBM to support learning is very important to improve the quality and effectiveness of learning and improve the mastery of teacher and student material. The success of an educational goal depends on how students learn. To achieve their goals, teachers must be careful in choosing and implementing teaching methods. (Munawar and Suryadi, 2019) In addition, they have the ability to choose media that are appropriate to the material they convey so that it is easier to convey. Therefore, the media chosen must attract the attention of students and make them interested in learning it. (Fadilah et al., 2023) According to Trianto, teaching materials are very important for innovative-progressive learning, this is because innovative-progressive learning is a combination of various disciplines that include natural sciences. (Al-Tabany, 2017) As a result, compared to conventional learning, innovative-progressive learning requires more complete and comprehensive teaching materials. The number of educational resources required for one subject must be in accordance with the number of Competency Standards, which is the number of fields of study covered in it. (Rahmawati et al., 2018).

Learning materials are an important element in teaching, as Trianto pointed out. In addition, teaching materials function to change the learning paradigm, which was previously teacher-centered, to student-centered after the material is given. (HUTAPEA, 2022). There are two types of teaching materials: printed and non-printed. Printed materials are more often used in learning because they are easier to obtain. Textbooks, modules, worksheets, and handouts are printed teaching materials that are often used. (Laila & Yanti, 2019). One of the media that can be developed is UKBM or Independent Learning Activity Unit. By using this media, the learning process is more interesting and interactive; because UKBM is able to convey historical messages through images and videos; use instruments to encourage students to learn; and improve students' understanding of the material presented. (MEGA, 2023) Good multimedia can present various events that can be used as learning media. These events can be simulated with various manipulations of conditions. All objects depicted must be well designed so that the delivery media is in accordance with real conditions. (Sumandya et al., 2019) In addition, it is

important to pay attention to the sequence of events to be delivered. so that students can understand thoroughly and gain a strong understanding of the ideas to be explained.

Independent learning activity units (UKBM) are small lesson units that are arranged sequentially from easy to difficult. These lesson units are labels of students' mastery of knowledge and skills that are arranged into learning activity units based on basic competency mapping. (Sadiyah and Utami, 2021). The content of the independent learning activity unit prioritizes the provision of learning stimuli that enable the growth of independence and student experience to be actively involved in mastering competencies as a whole through student-centered learning (student active) that encourages high-level thinking skills (Higher Order Thinking Skills), 21st Century life skills such as critical thinking, creative action, collaboration, and communication, as well as literacy culture, and strengthening character education. (Fatkhurohman & Syam, 2023) In line with the argument above, Muhammad Yaumi stated that the rate of development of science and technology requires updating learning components including UKBM which must be updated and revised for the sake of the novelty of teaching materials. (Yaumi, 2018). TPACK as a framework that integrates learning and technology is expected to be a solution if integrated into teaching materials or UKBM. (Seffendy, 2021) According to Mishra, TPACK is a framework for understanding and describing the types of knowledge needed by a teacher to make pedagogical practices and conceptual understanding effective by integrating technology in the learning environment, including in teaching materials or UKBM. (Koehler and Mishra, 2009)

To answer this challenge, the development of Independent Learning Activity Units (UKBM) based on TPACK is a relevant solution. UKBM allows students to learn independently by utilizing technology, so that the learning process becomes more flexible and tailored to individual needs. (Adiliyani, Rohmad and Saifuddin, 2024) In addition, by combining the right pedagogical approach, mastery of SKI material can be improved, and students can better understand the context of Islamic history and culture. Therefore, the development of TPACK-based UKBM in the subject of Islamic Cultural History is very important to improve the quality of learning. The use of technology not only as an aid, but also as an integral medium in the learning process, will help teachers and students achieve more holistic and contextual educational goals.

2. Methodology

This type of research is research and development by adopting the Borg & Gall research model, then for the product development process adapting the ADDIE model. The location of this research is Madrasah Tsanawiyah Arifah which is part of the Arifah Education Foundation. Madrasah Tsanawiyah Arifah is located on Jalan Bakolu, Pangkabinanga Village, Pallangga District, Gowa Regency, South Sulawesi. This research was conducted on Class VII.3 students of MTs Arifah Gowa. The data collection techniques used were observation, interviews, questionnaires, and documentation. The data analysis technique was through validity, practicality, and effectiveness data analysis. This validity data analysis was obtained through qualitative and quantitative data. Qualitative data is the opinion of experts for the product being developed, taking into account comments or suggestions for improvement. Here is the categorization: (Akour et al., 2021).

Table 1. Categorization of Achievement with Five Scale

Achievement Level	Category
90-100	Very Valid
75-89	Valid
65-74	Quite Valid
55-64	Less Valid
0-54	Not Valid

Practicality data analysis was carried out qualitatively and quantitatively. Qualitative data was obtained through student opinions when interviewed. Meanwhile, quantitative data was obtained

through student response questionnaires to the products developed. Scoring in practicality data analysis was adapted, namely: (Chen et al., 2020).

Table 2. Student Assessment Categorization

Achievement Level	Category
85-100	Very Practical
70-84	Practical
60-69	Quite Practical
50-59	Less Practical
<50	Not Practical

Data on the effectiveness of TPACK-based UKBM in SKI subjects was obtained from the analysis of student activities. The results of observations from the observation sheet were used to see the activity process that occurred during the trial. To see the effectiveness of the developed product, it was analyzed using the following formula:

$$S = \frac{X}{n} x\ 100\%$$

Information:

S = percentage value of student activity

X = number of student activities n = total number of student activities.

Based on the percentage score obtained, the collected data is analyzed through the categorization of student activities, namely:

Table 3. Categorization of Student Activities

Achievement Level	Category
$80 \leq Pi \leq 100$	Very Effective
$60 \leq Pi < 80$	Effective
$40 \leq Pi < 60$	Quite Effective
$20 \leq Pi < 40$	Less Effective
$Pi \leq 20$	Not Effective

UKBM is developed in accordance with research and development procedures, where a combination of 2 different models is needed, namely the Borg & Gall research procedure and the ADDIE approach development procedure.

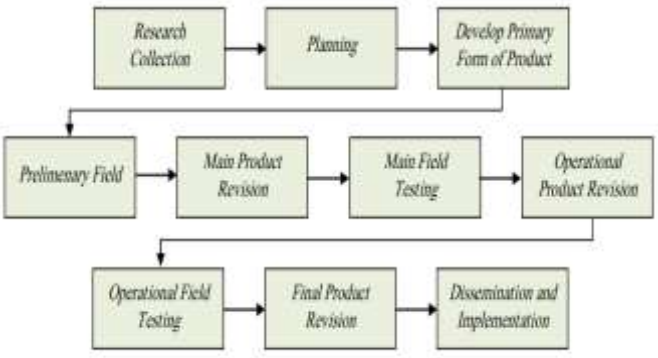

Figure 1. Borg and Gall research procedure

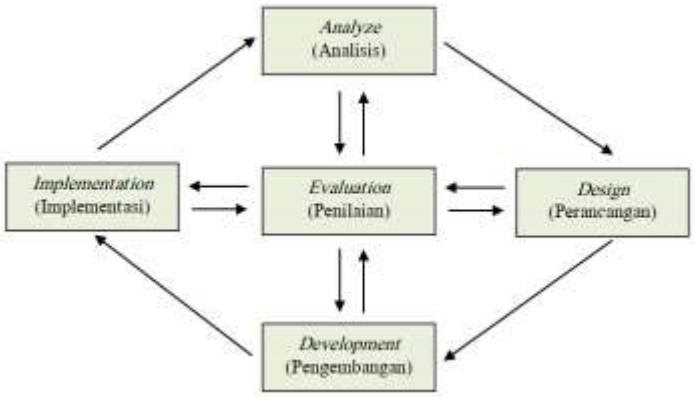

Figure 2. ADDIE development model procedure

Talking about the reasons for the development design, the researcher considers it necessary to produce a product through the right stages/procedures, namely the research stage and the development stage. The Borg & Gall research stages emphasize what is done in the first stage, so it is very important to find problems and offer solutions. (Zulaiha, Siregar and Arjuna, 2023) Likewise with the stages of the ADDIE development model, each stage is systematic where randomization cannot be done. Although simple when compared to other development models, because of its structured nature, it makes it easier for researchers to understand and apply, let alone evaluate each stage. (Fitriasih, 2020) Thus, this development design refers to the stages of the ADDIE development model. Thus, to produce stages of research and development models that are relevant to the objectives of this study, it is formulated into only a few steps, namely:

1. Analysis

a. Field study, conducted to identify initial needs and analyze student characteristics.

b. Literature study, conducted to identify the SAP SKI used and identify appropriate materials/media.

2. Design; includes UKBM design, making flowcharts with thought processes, and designing assessment instruments.

3. Development; researchers develop products in the form of Independent Learning Activity Units (UKBM) according to the previously designed structure.

4. Implementation; use of TPACK-based Independent Learning Activity Units (UKBM) in Islamic Cultural History learning. After the product has been tested, if revisions still need to be made, a final revision is made to obtain the final product (final product revision).

5. Evaluation, Furthermore, at this stage the researcher adopts the Plomp assessment phase model,5 namely: (Louhenapessy and Zulkarnaen, 2023)

a. Self-evaluation

b. Expert review

c. Individual evaluation (one to one evaluation)

d. Small group evaluation

e. Field test

More clearly, it is explained in the following flowchart:

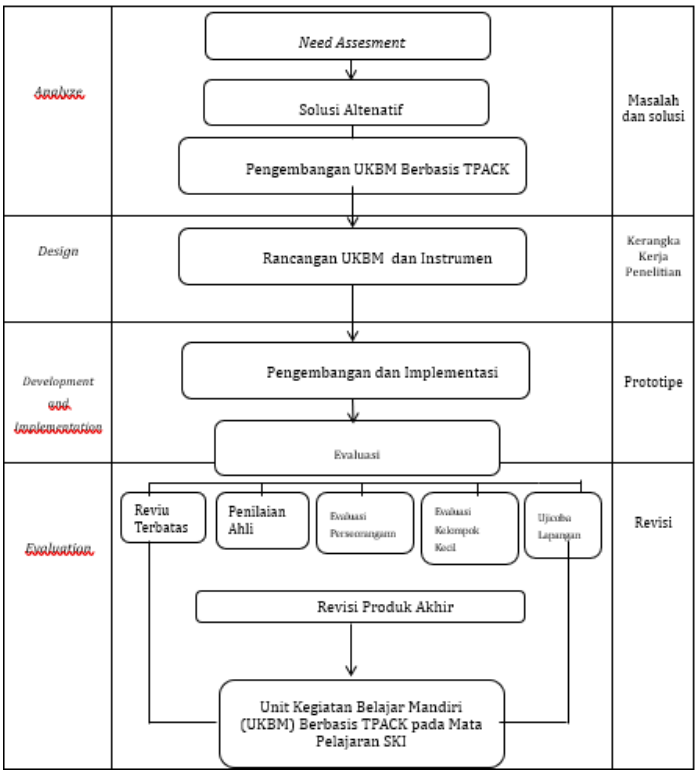

Figure 3. UKBM Research and Development based on TPACK in SKI Subjects.

3. Result and Discussion

Analysis of TPACK-Based UKBM Needs Required by MTs Arifah Gowa Class VII Students

In this stage, the researcher conducted a small-scale analysis to obtain information and collect data by adopting the Borg & Gall research stages, namely research and information collection. The analysis was carried out through field studies and literature studies. Data collection was carried out by distributing questionnaires online. The distribution of this questionnaire was intended to determine the basic needs for developing TPACK-based UKBM.

Table 4. Results of Data Collection and Preliminary Information of Students

Student Needs Analysis			
How old are you now?	+13	13	-13
	4,2 %	62,5 %	33,3 %
What was your final grade in SKI?	+90	80-90	-80
	100 %	-	-
What media do you use to access the internet?	Laptop	Hp	Media Lain
	-	95,8 %	4,2 %
Question	Yes	Enough	No
Do you like SKI subjects?	62,5 %	37,5 %	-
Are you happy with the materials given?	62,5 %	37,5 %	
Are you happy with the media used?	75 %	20,8 %	4,2 %
Do you need media to facilitate independent learning?	70,8 %	20 %	4,2 %

Is there enough time given during class learning?	29,2 %	54,2 %	16,7 %
Have you ever heard the term "TPACK" in UKBM before?	100 %	-	-
What type of media do you need?	Amount		
Ebook	20,8 %		
Print Module	25 %		
Website	12,5 %		
Multimedia	16,7 %		
Other Applications	25 %		

UKBM Design Based on TPACK Needed by MTs Arifah Gowa Grade VII Students

In the design of UKBM content, its development follows the pattern and systematics of UKBM writing according to the Indonesian Ministry of Religion. This UKBM design is then termed by the author as a Prototype. The following is the UKBM design, namely:

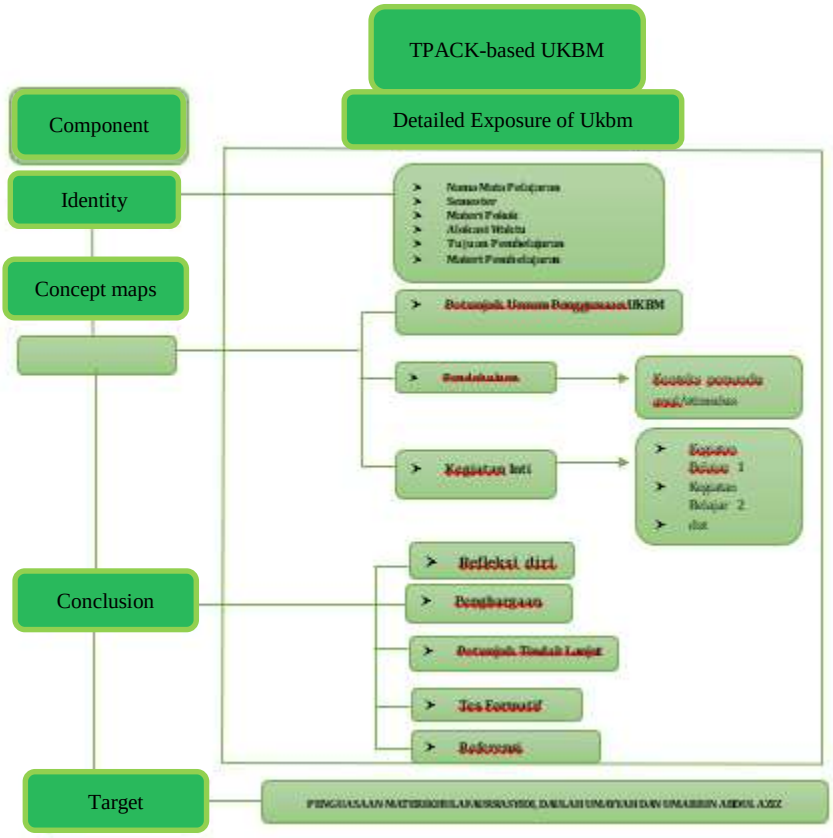

Figure 3. UKBM Concept Design Based on TPACK

UKMB Development Design Based on TPACK for SKI Subjects for Grade VII Students of MTs Arifah Gowa

The research model used is the ADDIE models, but it has previously gone through the analysis and design process. In this section, the researcher formulates a development design to answer the second problem formulation, namely through the development, implementation, and evaluation stages. The clarity of the steps in the TPACK-based UKBM development design that the researcher carried out are as follows.

1. Development

The activities carried out at this stage are that the researcher begins to develop a product in the form of UKBM according to the structure that has been designed previously. After the researcher meets experts in the field of materials and media to validate the UKBM that has been made. The experts referred to by the researcher in assessing TPACK-based UKBM for SKI subjects are lecturers from the Faculty of Tarbiyah and Teacher Training, UIN Alauddin Makassar.

2. Implementation

At the implementation stage, TPACK-based UKBM is applied in the learning process. The final product of this UKBM is 3 (three) chapters arranged based on ATP of Islamic Cultural History subject and its contents become more lively with attractive color choices.

The UKBM that has been designed is not only limited to mastery of material as a requirement for students, but it is expected that the learning situation will not be boring. The selection of the TPACK model shows the existence of an "activating" learning orientation.

3. Evaluation

After everything is ready, the researcher conducted one-to-one, small group, and field test trials at the evaluation stage. The evaluation stage of the ADDIE model is used as a component to assess each stage of analyzing, design, development, and implementation that was carried out previously. This statement is supported by previous research studies by Sanusi et al. who argue that the evaluation and revision phases are ongoing activities. (Sanusi, Murtafiah and Krisdiana, 2016) This means that researchers evaluate each stage of the activities carried out. The evaluation in question is a formative evaluation, where at each development phase revisions are made through suggestions/improvements and analyzing whether the TPACK-based UKBM in the form of printed materials has been categorized as valid, practical, and effective. Expert Validator

Material The aspects assessed on the expert validation sheet for material presentation are language, material content, and evaluation. The results of the data analysis can be seen in table 4.3.1 and the details of the overall calculation results are in Appendix 4.1.

Table 5. Material Expert Validator Assessment Results

No.	Evaluation Criteria	Validator
1	Linguistics	4,00
2	Teaching Materials	3,75
3	Evaluation	3,75
Average		3,83
Percentage (%)		95 %

Overall, it can be seen that the percentage of validator assessment of the presentation of the material was obtained at 95%. If converted into a table of achievement categories with a scale of five, the presentation of this TPACK-based UKBM material falls into the "valid" criteria with an achievement level of 90% - 100%.

Media Expert Validation

The aspects assessed on the media expert validation sheet are design appearance, ease of operation, display quality, barcode clarity and navigation effectiveness.

Table 6. Media Expert Validator Assessment Results

No.	Evaluation Criteria	Validator
1	Design Appearance	4,33
2	Ease of Operation	5,00
3	Format	5,00
4	Display Quality	5,00
5	Interface	4,25
	Average	5,47
	Persentase (%)	92 %

Through the table data above, it is known that the percentage of validator assessment of the media was obtained at 92%. If converted into a table of achievement categories with a scale of five, then TPACK-based UKBM falls into the "valid" criteria with an achievement level of 75% - 89%. Although the prototype is categorized as valid, if seen in the table above, information is obtained that the highest value is only in the appearance of the module design, namely the selection of font size, font type, and maximum color combination.

Analysis of the Level of Practicality of TPACK-Based UKBM for Islamic Cultural History Subjects Class VII MTs Arifah Gowa

UKBM practicality data can be obtained through a questionnaire response from class VII students. 3 MTs Arifah Gowa. In line with the results of Nieveen's research that the product of the development is said to be practical if theoretically, practitioners state that this product is suitable for use in the field.

Table 7. Results of Student Response Data Analysis

No.	Interval	Category	Frequency	Percentage (%)
1	85-100	Very Positive	19	82 %
2	70-84	Positive	3	12,5 %
3	60-69	Quite Positive	1	1,73 %
4	50-59	Less Positive	0	0 %
5	<50	Not Positive	0	0 %
Total			23	100 %

Student response questionnaires for TPACK-based UKBM were divided into 19 items. The results of quantitative analysis showed that 19 students (82%) gave very positive responses. 3 students (12.5%) gave positive responses, and only 1 student (1.73%) responded quite positively and less positively to the development of TPACK-based UKBM in the form of printed materials.

According to data on student response questionnaires based on the results of the analysis, a percentage of 82% was obtained or was in the interval $85 \leq Pi \leq 100$. Thus, overall the products used have a positive effect on the SKI subject for class VII.3 students of MTs Arifah Gowa.

Analysis of the Level of Effectiveness of TPACK-Based UKBM for SKI Subjects in Grade VII MTs Arifah Gowa

Data on the level of effectiveness were obtained from the observation sheet of the activities of 24 students who had used TPACK-based UKBM. The following is a table of the results of the descriptive analysis of student activities consisting of 7 (seven) aspects of observation.

Table 8. Results of Student Activity Data Analysis

No.	Interval	Category	Frequency	Percentage (%)
1	80 ≤ Pi ≤ 100	Very effective	12	52 %
2	60 ≤ Pi < 80	Effective	8	33 %
3	40 ≤ Pi < 60	Quite effective	3	12,5 %
4	20 ≤ Pi < 40	Less effective	1	4 %
5	Pi ≤ 20	Not effective	0	0 %
Total			23	100 %

The assessment rubric and determination of the percentage of scores obtained through the observation sheet of student activities above, it is known that student activities that have a very effective category are only 12 students (52%), 8 students (33%) are in the effective category, 3 students (12.5%) are in the fairly effective category, and as many as 1 student (4%) who are less effective after being observed through observation.

According to data on student activities based on the results of statistical calculations, a percentage of 50% was obtained or was in the interval 40 ≤ Pi ≤ 60. Thus, overall student activities showed quite effective towards the SKI subject for class VII.3 MTs Arifah Gowa students.

Analysis

After obtaining initial information through the distribution of questionnaires, class VII. 3 students welcomed the design of this product. 70.8% of students think that there needs to be learning resources that support the SKI learning process. In line with the theory that states that the analysis of learning needs and conditions will determine what technology is suitable to be applied, so that it is not technology that should dictate to be used but the consideration of the needs of its users. Knowing more about the types of media needed, the researcher provides questions in the last point. (Amin, 2021) Based on the research and development process that adapts the Borg & Gall research model and the ADDIE model product development process carried out by researchers to produce a final product in the form of TPACK-based UKBM for the subject of Islamic Cultural History for grade VII. The conclusions produced are as follows: The design of TPACK-based UKBM is carried out with the analysis and design stages. The design of the development of TPACK-based UKBM is continued with the development, implementation, and evaluation stages. The final product of this research and development is UKBM in the form of printed materials.

TPACK-based UKBM that has met the criteria for valid, practical, and effective is proven through the results of the analysis of the expert validation sheet for the presentation of the material which obtained a percentage of 95% and the results of the analysis of the media expert validation sheet with a percentage of 92%. Furthermore, the results of the analysis of student responses gave a positive effect with a percentage of 95% on the subject of Islamic Cultural History for class VII. Through the observation sheet of student activities, a percentage of 52% was obtained so that overall student activities showed effectiveness in the subject of Islamic Cultural History. The results of the above study are supported by research conducted by Dian Afifatul Hasanah et al. with the research title Development of Independent Learning Activity Units for Poetry Texts Based on Cooperative, Integrated, Reading, and Composition for Class X, showing that the research and development carried out used the 4-D model consisting of four stages, including (1) define, (2) design, (3) development, and (4) disseminate. UKBM products were developed and tested for validity by teaching device experts and learning experts, practicality by teachers, and attractiveness by students. The aspects used in the assessment include (1) content aspects, (2) systematic presentation aspects, (3) appearance aspects, (4) understanding and needs aspects, and (5) learning aspects. The assessment results from the teaching device experts obtained a percentage of 83.33%. The learning experts gave an assessment with a percentage of 97.91%. The Indonesian language teacher gave an assessment with a percentage of 77.5%. Meanwhile, the students gave an assessment with a percentage of 80%. Thus, the Independent Learning Activity Unit (UKBM) product of Poetry Text Based on Cooperative, Integrated, Reading, and Composition (CIRC) has the qualifications to be implemented and can be used in learning.

(Khasanah, Hermawan and Utami, 2022)

Then the research conducted by Apolonia Bernadina entitled "Development of Independent Learning Activity Units (UKBM) Based on Scientific Learning on Biodiversity Material" showed that the validity level of the material validator was 90, the language validator was 88 and the media validator was 82. The feasibility of UKBM learning media in small-scale trials by educators obtained an average score of 121 in the very feasible category and 66 students were categorized as quite feasible while the results of the UKBM media feasibility questionnaire in large-scale trials by educators had an average score of 127 in the very feasible category and students obtained an average score of 80.36 in the very feasible category. The increase in N-gain analysis from the average pretest score of 60 and the posttest score of 81.404 obtained an N-gain of 0.52 with a moderate category. These results can be concluded that UKBM is very effective in learning. (Bernadina, Bunga and Mago, 2022)

Finally by Gilang Pratiwi et al. with the research title Development of E-UKBM with the Kvisoft Flipbook Maker Application in Physics Learning to Improve Students' Problem Solving Skills shows that: (1) E-UKBM Physics with the kvisoft flipbook maker application is very valid, (2) E-UKBM Physics with the kvisoft flipbook maker application that is developed is practical because it can be implemented in learning, (3) E-UKBM Physics with the kvisoft flipbook maker application is effective for improving problem solving skills, students carry out positive activities during learning, and students respond very well to learning. (Pratiwi et al., 2020).

The conclusions from the various studies above show that the development of Independent Learning Activity Units (UKBM) based on various approaches such as CIRC, Scientific Learning, and E-UKBM with the Kvisoft Flipbook Maker application has strong potential to improve the quality of learning. Each study highlights aspects of validity, practicality, and effectiveness of UKBM products in increasing student engagement and learning abilities, both through expert, teacher, and student assessments. Research by Dian Afifatul Hasanah et al. showed that CIRC-based Poetry Text UKBM was considered valid and feasible to be implemented with various aspects such as systematic presentation and display received positive assessments from experts, teachers, and students. Research by Apolonia Bernadina emphasized the validity and feasibility of Scientific Learning-based UKBM on biodiversity material, with a significant increase in learning outcomes through trials and N-gain analysis showing the effectiveness of UKBM. Research by Gilang Pratiwi et al. found that E-UKBM with the Kvisoft Flipbook Maker application was very valid, practical, and effective in improving students' problem-solving abilities in physics learning. Overall, UKBM has proven to be an innovative and effective learning method to improve student learning outcomes in various subjects.

4. Conclusion

Based on the needs analysis through the distribution of questionnaires, students of class VII. 3 welcomed the design of this product. 70.8% of students believe that there is a need for learning resources that support the SKI learning process. the research and development process that adapts the Borg & Gall research model and the ADDIE model product development process carried out by researchers to produce the final product in the form of TPACK-based UKBM for the subject of Islamic Cultural History for class VII. The TPACK-based UKBM development design is continued with the development stage, (implementation), and (evaluation). The final product of this research and development is UKBM in the form of printed materials. TPACK-based UKBM that has met the criteria of valid, practical, and effective is proven through the results of the analysis of the expert validation sheet for the presentation of the material which obtained a percentage of 95% and the results of the analysis of the media expert validation sheet with a percentage of 92%. Furthermore, the results of the analysis of student responses gave a positive effect with a percentage of 95% on the subject of Islamic Cultural History for class VII. Through the observation sheet of student activities, a percentage of 52% was obtained so that overall student activities showed effectiveness in the subject of Islamic Cultural History. Students really welcomed the presence of UKBM with the results of the questionnaire distribution obtained 82% who responded positively to the presence of TPACK-based UKBM as

evidenced by statements of interest in the products being developed.

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