DEVELOPMENT OF TPACK-BASED UKBM IN ISLAMIC CULTURAL HISTORY SUBJECTS

Ahmad Suryadi[1], Muhammad Yaumi[2], Muljono Damopolii[3], & Ulfiani Rahman[4]

[1,2,3,4] Universitas Islam Negeri Alauddin Makassar, Indonesia
Correspondence email: suryadiahmad445@gmail.com

ABSTRACT

This study aims to develop a TPACK (Technological, Pedagogical, and Content Knowledge) based Independent Learning Activity Unit (UKBM) in the subject of Islamic Cultural History (SKI) for grade VII. This study uses a research and development method that adapts the Borg & Gall model and the ADDIE development model (Analysis, Design, Development, Implementation, Evaluation). Based on the needs analysis through a questionnaire, 70.8% of students stated the need for additional learning resources that support the SKI learning process. The development process produces products in the form of printed materials that have been validated by material and media experts. The validation results showed a very high level of validity with a percentage of 95% for the material and 92% for the media. The implementation of this UKBM received a positive response from students, with 95% stating that this product supports SKI learning. Learning activities using the UKBM were also considered effective, indicated by the results of the observation of learner activities which reached a percentage of 52%. In addition, 82% of learners showed interest in the developed product, proving that the TPACK-based UKBM is well received and has the potential to improve the quality of learning.

Keywords: UKBM; TPACK; islamic cultural history; learning; product development

1. INTRODUCTION

One of the elements that influence learning is the use of learning resources and media. Teaching materials must be adapted to student circumstances and the teacher's learning approach. The use of UKBM to support learning is very important to improve the quality and effectiveness of learning as well as improving teachers and learners' mastery of the material. The success of an educational goal depends on how learners learn. To achieve their goals, teachers must careful in choosing and applying teaching methods. In addition, they have the ability to choose the appropriate media to suit the material they are delivering so that it is easier to to be

delivered. Therefore, the media chosen must attract the attention of the learners and make them interested in learning. learners and make them interested in learning it.

According to Trianto, teaching materials are essential for innovative-progressive learning, this is because innovative-progressive learning is a combination of various disciplines that include natural sciences. As a result, compared to conventional learning, innovative-progressive learning requires more complete and comprehensive teaching materials. The number of educational resources required for a subject should correspond to the number of Competency Standards, which is the number of subject areas covered. (Al-Tabany, 2017).

Teaching materials are an important element in teaching, as Trianto points out. In addition, teaching materials serve to change the learning paradigm, which was previously teacher-centred, to learner-centred once the material is provided. 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.

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 increase learners' understanding of the material presented. Good multimedia can present a wide variety of events that can be used as learning media. These events can be simulated with various state manipulations. All objects depicted should be well designed so that the delivery medium matches the real situation. In addition, it is important to pay attention to the sequence of events to be presented so that students can understand thoroughly and gain a strong understanding of the ideas to be explained.

In line with the above argument, Muhammad Yaumi stated that the pace 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 in teaching materials or UKBM. According to Mishra, TPACK is a framework for understanding and describing the type of knowledge needed by a teacher to streamline pedagogical practices and understanding of concepts by integrating a technology in the learning environment, including in teaching materials or UKBM. (Koehler and Mishra, 2009)

To answer this challenge, the development of a TPACK-based Self-Learning Activity Unit (UKBM) is a relevant solution. UKBM allows students to learn independently by utilising technology, so that the learning process becomes more flexible and tailored to individual needs. In addition, by combining the right pedagogical approach, mastery of SKI material can be improved, and students can understand the context of Islamic history and culture more deeply.

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 a tool, but also as an integral medium in the learning process, will help teachers and students achieve more holistic and contextualised educational goals.

2. METHODS

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 Bakolu Street, Pangkabinanga Village, Pallangga District, Gowa Regency, South Sulawesi. This research was conducted on students of Class VII.3 MTs Arifah Gowa. The data collection techniques used were observation, interview, questionnaire, and documentation. The data analysis technique through data analysis of validity, practicality, and effectiveness. This validity data analysis is obtained through qualitative and quantitative data. Qualitative data is the opinion of experts for the products developed, taking into account comments or suggestions for improvement. The following is the categorisation:

Table 1. Categorization of Achievement with Five Scale

o.	Tingkat Pencapaian	Kategori
	90-100	Very Valid
	75-89	Valid
	65-74	Moderately Valid
	55-64	Less Valid
	0-54	Not Valid

Practicality data was analysed qualitatively and quantitatively. Qualitative data was obtained through the opinions of students when interviewed. Meanwhile, quantitative data was obtained through a questionnaire of learners' responses to the developed product. Scoring on practicality data analysis is adapted from Saifudin's assessment score, namely:

Table 2. Student Assessment Categorization

o.	Tingkat Pencapaian	Kategori
	85-100	Very Practice
	70-84	Practice
	60-69	Moderately Practice
	50-59	Less Practice
	<50	Not Pratice

Data on the effectiveness of TPACK-based UKBM in SKI subjects were obtained from the analysis of students' activities. The observation results 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 analysed using the following formula:

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

Description:

S = percentage value of learner activity

X = number of learner activities

n = total number of learner activities.

Based on the percentage score obtained, the collected data was analysed through the categorisation of learners' activities, namely:

Table 3. Categorization of Student Activities

o.	Tingkat Pencapaian	Kategori
	80 ≤ Pi ≤ 100	Very Effective
	60 ≤ Pi < 80	Effective
	40 ≤ Pi < 60	Moderately Effective
	20 ≤ Pi < 40	Less Effective
	Pi ≤ 20	Not Effective

The UKBM was developed in accordance with the research and development procedure, where it was necessary to combine two different models, namely the Borg & Gall research procedure and the ADDIE approach development procedure.
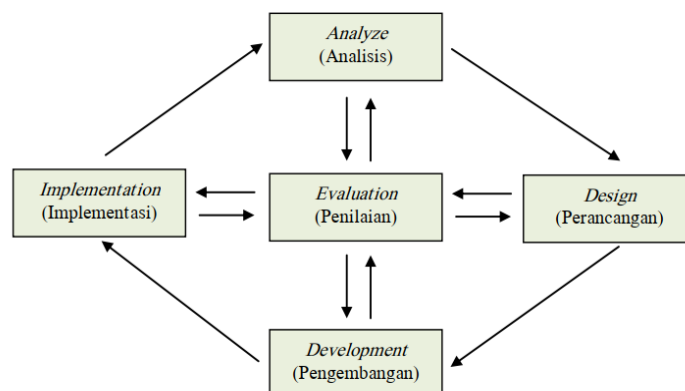
Figure 1. Borg and Gall research procedure

Figure 2. ADDIE development model procedure

Talking about the reasons for the development design, the researcher sees the need to produce a product through the right stages / procedures, namely the research stages and development stages. The Borg & Gall research stages emphasise what is done in the first stage, so it is very important to find problems and offer solutions. Similarly, the stages of the ADDIE

development model, each stage is systematic where randomisation cannot be done. Although it is simple when compared to other development models, its structured nature makes it easier for researchers to understand and apply, let alone evaluate each stage. Thus, the design of this development refers to the stages of the ADDIE development model.

Thus, to produce the stages of the research and development model that are relevant to the objectives of this study, it is formulated into only a few steps, namely:

1. Analysis of

   a. Field studies, conducted to identify initial needs and analyse learner characteristics.

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

2. Design; including the design of the UKBM, making *flowcharts* with the flow of thought, and designing assessment instruments.

3. Development; the researcher developed a product in the form of an Independent Learning Activity Unit (UKBM) according to the previously designed structure.

4. Implementation; the use of TPACK-based Independent Learning Activity Units (UKBM) in learning Islamic Cultural History. After the product was tested, if revisions still needed to be made, then the final revision was held to obtain the final *product* revision.

5. Evaluation, Furthermore, at this stage the researcher adopted the *assessment phase of* the Plomp model,5 namely:

   a. Self-evaluation
   b. Expert review
   c. One to one evaluation
   d. Small group evaluation
   e. Field test

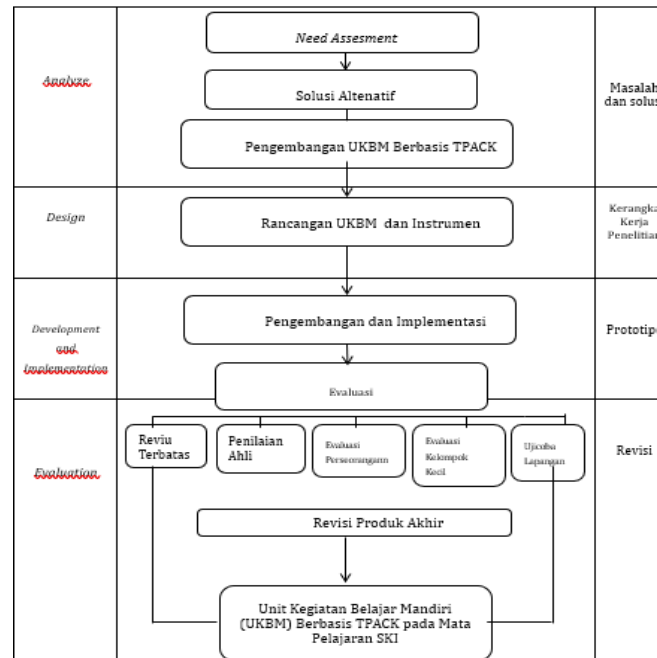More clearly, it is explained in the following *flowchart* :

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

3. RESULTS AND DISCUSSION

Needs Analysis of TPACK-Based UKBM Needed by MTs Arifah Gowa Class VII Learners

In this stage, researchers conducted a small-scale analysis to obtain information and collect data by adopting Borg & Gall's research and information collection stages. The analysis was carried out with field studies and literature studies. Data collection was carried out by distributing questionnaires online. The questionnaire was distributed to find out the basic needs for the development of TPACK-based UKBM.

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

Analisis Kebutuhan Peserta Didik			
Berapa umur Anda saat ini?	+13	13	-13
	4,2 %	62,5 %	33,3 %
Berapakah nilai akhir yang Anda peroleh pada mata pelajaran SKI?	+90	80-90	-80
	100 %	-	-
Media apakah yang Anda gunakan untuk mengakses internet?	Laptop	Hp	Media Lain
	-	95,8 %	4,2 %

Pertanyaan	Ya	Cukup	Tidak
Apakah Anda menyukai mata pelajaran SKI?	62,5 %	37,5 %	-
Apakah Anda senang dengan materi yang diberikan?	62,5 %	37,5 %	
Apakah Anda senang dengan media yang digunakan?	75 %	20,8 %	4,2 %
Apakah membutuhkan media untuk memfasilitasi belajar mandiri?	70,8 %	20 %	4,2 %
Apakah waktu yang diberikan cukup saat pembelajaran di kelas?	29,2 %	54,2 %	16,7 %
Apakah sebelumnya Anda pernah mendengar istilah "TPACK" dalam UKBM?	100 %	-	-
Jenis media apa yang Anda butuhkan?	Jumlah		
Ebook	20,8 %		
Modul Cetak	25 %		
Website	12,5 %		
Multimedia	16,7 %		
Aplikasi Lain	25 %		

Design of TPACK-Based UKBM Required by MTs Arifah Gowa Class VII Learners

In the design of the UKBM content, its development follows the pattern and systematics of writing UKBM according to the Indonesian Ministry of Religious Affairs. This UKBM design is then termed the Prototype. The following is the design of the UKBM, namely:
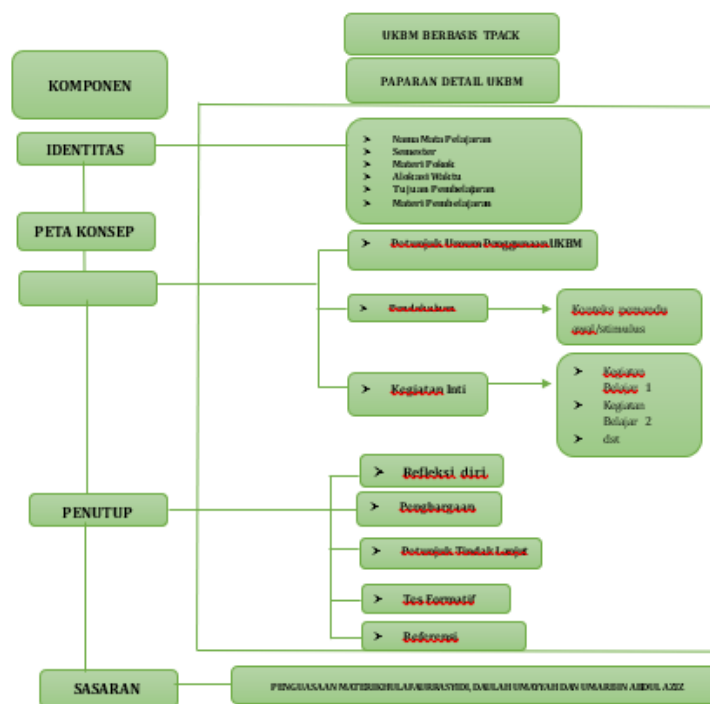
Figure 3. UKBM Concept Design Based on TPACK

Development Design of TPACK-Based UKMB for SKI Subjects in Class VII Students of MTs Arifah Gowa

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

1. Development

The activity carried out at this stage is that researchers begin to develop products in the form of UKBM according to the structure that has been designed previously. After the researcher met with experts in the field of material and media to validate the UKBM that had been made. The experts intended by researchers in assessing the TPACK-based UKBM for SKI subjects are lecturers from the Faculty of Tarbiyah and Keguruan UIN Alauddin Makassar.

2. Implementation

In the implementation stage, the TPACK-based UKBM is applied in the learning process. The final product of this UKBM is 3 (three) chapters which are arranged based on the ATP of Islamic Culture History subject and the content becomes more lively with interesting colour choices.

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

3. Evaluation

After everything is ready, the researchers conduct one to one, small group, and field tests at the evaluation stage. The evaluation stage of the ADDIE model is used as a component to assess each stage of analysing, design, development, and implementation carried out previously. This statement is supported by previous research studies by Sanusi et al argue that the evaluation and revision phase is a continuous activity. (Sanusi, Murtafiah and Krisdiana, 2016) That is, researchers evaluate each stage of the activities carried out. The intended evaluation is a formative evaluation, where in each development phase revisions are made through suggestions/improvements and analyse whether the TPACK-based UKBM in the form of printed materials has been categorised as valid, practical, and effective.

4. Expert Validator

The aspects assessed on the material presentation expert validation sheet are language, material content, and evaluation. The results of data analysis can be seen in table 4.3.1 and details of the overall calculation results are in table 5.

Table 5. Material Expert Validator Assessment Results

No.	Kriteria Penilaian	Validator
1	Language	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 the validator's assessment of the material presentation is 95%. If converted into a five-scale achievement category table, the presentation of TPACK-based UKBM material is included in 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.	Kriteria Penilaian	Validator
1	Tampilan Desain	4,33
2	Ease of Operation	5,00
3	Format	5,00
4	Display Quality	5,00
5	*Interface*	4,25
	Average	5,47
	Percentage (%)	

Through the data table above, it is known that the percentage of validator assessment of the media is 92%. If converted into a five-scale achievement category table, the TPACK-based UKBM is included in the 'valid' criteria with an achievement level of 75% - 89%. Although the prototype is categorised as valid, but if seen in the table above, the information obtained is that the highest score is only on the appearance of the module design, namely the selection of font size, font type, and maximum colour combination.

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

Data on the practicality of UKBM can be obtained through a response questionnaire for students in class VII. 3 MTs Arifah Gowa. In line with the results of Nieveen's research that the development product 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	Kategori	Frekuensi	Persentase (%)
1	85-100	Very Positive	19	82 %
2	70-84	Positive	3	12,5 %
3	60-69	Moderately Positive	1	1,73 %
4	50-59	Less Positive	0	0 %
5	<50	Not Positive	0	0 %
	Total		23	100 %

The learner response questionnaire to the TPACK-based UKBM is divided into 19 items. The results of quantitative analysis showed that 19 learners (82%) responded very positively. 3 learners (12.5%) responded positively, and only 1 learner (1.73%) responded quite positively and less positively to the development of TPACK-based UKBM in the form of printed materials.

According to the data on the learner response questionnaire based on the results of the analysis, a percentage of 82% was obtained or in the interval 85 ≤ Pi ≤ 100. Thus, overall the product used has a positive effect on SKI subjects in class VII.3 MTs Arifah Gowa students.

Analysis of the Effectiveness Level of TPACK-Based UKBM for SKI Class VII MTs Arifah Gowa

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

Table 8. Results of Student Activity Data Analysis

No.	Interval	Kategori	Frekuensi	Persentase (%)
1	80 ≤ Pi ≤ 100	Very Effective	12	52 %
2	60 ≤ Pi < 80	Effective	8	33 %
3	40 ≤ Pi < 60	Moderately 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 learner activity observation sheet above, it is known that the activities of learners who have a very effective category are only 12 learners (52%), 8 learners (33%) are in the effective category, 3 learners (12.5%) who are in the moderately effective category, and as many as 1 learner (4%) who are less effective after being observed through observation.

According to data on learner activities based on the results of statistical calculations, a percentage of 50% is obtained or is in the interval 40 ≤ Pi ≤ 60. Thus, overall learner activity shows quite effective on SKI subjects in class VII.3 MTs Arifah Gowa students.

4. CONCLUSION

Based on the needs analysis through distributing questionnaires, students of class VII. 3 welcomed the design of this product. 70.8% of students think 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 a final product in the form of TPACK-based UKBM for grade VII Islamic Cultural History subjects. The development design of the TPACK-based UKBM was followed by the development, implementation, and evaluation stages. The final product of this research and development is UKBM in the form of printed materials. The TPACK-based UKBM that has met the valid, practical, and effective criteria is evidenced by the results of the analysis of the material presentation expert validation sheet 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 students' responses gave a positive effect with a percentage of 95% on the subject of Islamic Cultural History class VII. Through the learner activity observation sheet, a percentage of 52% was obtained so that overall learner activity showed effectiveness in Islamic Cultural History subjects.

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