



Statistics education research integrated with Islamic studies (A study of validity and practicality of textbook development)

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Abstract

This research is based on the need for a textbook of educational research statistics that is suitable for use, while its availability has not been met. Therefore, this research is a development study with ADDIE design (*analysis, design, development, implementation, and evaluation*), which aims to develop and produce an Islamic integrated educational research statistics textbook that meets valid and practical criteria. The data in this study were collected using questionnaire techniques and validity and practicality questionnaire instruments. Development is first carried out before these two instruments are used to ensure their feasibility. The data that has been obtained is analyzed using the Aiken index formula related to the calculation of validity and percentage related to practicality. The results of this study can be summarized in two conclusions. First, the Islamic integrated educational research statistics textbook is at the "very valid" validity level. The Aiken index score is 0.9215. Second, the Islamic integrated educational research statistics textbook based on mathematical communication skills is at the "practical" level of practicality. The numerical validity value is 77.66%. The implication of the results of this study is the production of a textbook that is suitable for use and tested for its effectiveness in learning educational research statistics.

Keywords: development; statistics; textbooks

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I. Introduction

Literacy skills are one of the focuses of developing the current Indonesian curriculum. This ability can be improved, one of which is through learning statistics (Irwandi, Roza, & Maimunah, 2021). Statistics plays an important role in mathematics, especially in making decisions when solving a problem. The problem

in the research framework is the first step of the six scientific method steps that must be carried out, namely, formulating the problem. The formulation of this research problem is closely related to what data analysis techniques should be used so that the existing problems can be given the correct conclusion as a solution that is considered capable of solving the problem.



One of the data analysis techniques used in processing and analyzing data obtained from research activities is using statistical methods, be it descriptive or inferential statistics. Especially for quantitative social research, statistical analysis plays a significant role in processing and analyzing data (Rudini, [2016](#)). Therefore, as a provision for students to prepare the final project in the form of a thesis, which is another form of research report, they must take statistics courses (Anggraini & Syahbrudin, [2021](#)). Some university courses discussing statistical methods in educational research are called educational research statistics courses.

The preparation of lecture materials in this educational research statistics textbook certainly pays attention to the needs of students related to research activities in the field of education, which is a growing trend at this time. So, a guide is needed that can guide students in processing and analyzing the data from their research. One form of guidance that can be used is teaching materials (textbooks, teaching modules, or worksheets).

The existence of textbooks can provide a positive experience for students, facilitate their learning, and provide opportunities for lecturers to guide students more. In addition, textbooks also provide opportunities for students to study the material before the lecture begins (Japa, [2012](#)), hoping that classroom discussion activities can be more "hot" again. In addition, textbooks can familiarize students with their material concepts so that their understanding will last longer (Perdana & Ramadhona, [2021](#)).

As educators in Islamic universities, researchers and students in the universities where researchers work need a textbook that characterizes Islam (both in material content, sample questions, and practice questions). In addition to obtaining knowledge related to research statistics, students are expected to increase their Islamic knowledge while studying in the statistics of education research textbook. So, there is a need for an educational research

statistics textbook that also contains Islamic values, but this is not yet available.

There are many circulating and easy-to-find statistics and research statistics books in education and non-education. However, none has been found that integrates them with Islamic values. Islamic values in learning must be taught to students (Nufus, Nurdin, & Ariawan, [2021](#)), mainly if the learning is carried out at Islamic educational institutions. Various studies related to the development of teaching materials - research statistics teaching materials have also begun to appear, but none of them integrated with Islamic values. Some of the research conducted includes the development of teaching materials (Nu'amn, [2019](#)), practicum modules based on data analysis (Sa'idah & Yulistianti, [2018](#)), and multimedia-based *teaching* modules (Setyawan & Wahyuni, [2019](#)), modules based on *contextual teaching and learning* (Hanggara & Amelia, [2018](#)), case-based textbooks (Safitri & Purbaningrum, [2020](#)), statistical reasoning-based module (Subekti & Jazuli, [2022](#)), textbooks as lecture support (Sa'diah, [2016](#)), QR code-based module (Sianipar, Saprudin, & Zulhalim, [2021](#)), module based on realistic mathematics approach (Hanggara, Agustyaningrum, & Hermansah, [2018](#)), as well as teaching materials based on *quick response* ('Adna & Mardhiyana, [2019](#)).

Given the importance of textbooks and Islamic values in Islamic higher education institutions, while their availability is still not found and relevant related research has not been carried out, the researchers are interested in researching the development of Islamic-integrated educational research statistics textbooks. This is with the hope of covering the existing void and positively affecting learning activities in the statistics of educational research textbooks.

II. Research Method

This research is a type of development research. Researchers aim to develop and produce Islamic-integrated educational research statistics textbooks that meet valid and practical

criteria. The development design uses the ADDIE model (*Analysis, Design, Development, Implementation, and Evaluation*). However, the implementation stages carried out are only limited to the stages related to practicality, not to the trial of the textbook in the actual learning class. Therefore, the ADDIE stages that were carried out were not perfect.

This research uses the terminology of research objects and subjects. Its object is to develop an Islamic-integrated educational research statistics textbook. The research subjects whose data were used to draw conclusions from the results were three mathematics education lecturers (at the validity stage) and 24 mathematics education students (at the practicality stage).

The data collected are quantitative and qualitative data using non-test techniques, namely questionnaire techniques. Qualitative data includes comments and input from validators and test subjects on the practicality of the textbooks to be developed. Meanwhile, quantitative data includes assessment scores related to the validity and practicality of textbooks.

This questionnaire technique obtains data on the aspects of the developed textbook products' validity and practicality. The validity of textbook products is obtained using a validation questionnaire sheet instrument. The practicality of textbooks is obtained using a practicality questionnaire sheet.

Table 1. Validity of textbooks

Validity Aspect	Indicators
Content feasibility	1. Material suitability with learning objectives 2. The accuracy of the material, and learning support material.
Presentation feasibility	1. Presentation techniques. 2. Learning presentation. 3. Presentation completeness.
Language feasibility	1. Suitability for the level of student development. 2. Communicativeness. 3. The conciseness and cohesiveness of the flow of thought.

Graphic feasibility	1. Textbook size. 2. Textbook cover design. 3. Textbook content design.
Conformity with the principles of Islamic integration	1. Mentioning/writing the name of Allah SWT. 2. Write prayers and inserting Qur'anic verses, hadith, and Islamic inspirational stories. 3. Visual illustrations with Islamic images. 4. Inserting historical events or Islamic stories. 5. Using Islamic applications or examples

The practicality sheet for the textbook was prepared using the practicality variables according to Kosasih (2020) as follows:

1. Student interest and book display, with indicators:
 - a. The book's appearance is suitable for attracting students' interest when using it (consists of six statements).
 - b. Students' interest in learning and educational research statistics courses using textbooks (consists of 3 statements).
2. Usage process, with indicators:
 - a. The practicality of textbooks tailored to student learning conditions (consists of 4 statements).
 - b. Using textbooks to increase student learning activities (consists of 2 statements).
3. Mathematical communication skills and materials, with indicators:
 - a. The suitability of the material, sample problems, and exercise questions in the textbook facilitate students' ability to explain mathematical ideas, situations, and relationships in writing using images, graphs, and algebraically (consists of 1 statement).
 - b. The suitability of the material, example problems, and practice problems in the textbook facilitate students' ability to read written mathematical representations with understanding and

- write them down (consists of 1 statement).
- c. The suitability of the material, example problems, and exercise problems in the textbook facilitate students' ability to express everyday events into mathematical models and solve them (consists of 1 statement).
 4. Time, with indicators: alignment between the systematics of the material in the textbook and the time allocation in universities (consists of 2 statements).
 5. Evaluation, with indicators: the support of textbook question exercises helps students evaluate their understanding of learning materials (consists of 2 indicators).
 6. Islamic and material understanding, with indicators:
 - a. The attractiveness of presenting Islamic aspects in textbooks to improve students' Islamic understanding (consists of 2 statements).
 - b. The attractiveness of presenting Islamic aspects in textbooks in improving

students' Islamic understanding (consists of 1 statement).

Before the validity and practicality questionnaire sheets were used, they were first validated by three validators to ensure the feasibility of the instrument in collecting data. The assessment given by the validators was analyzed using the Aiken index formula (Retnawati, 2016):

$$V = \frac{\sum S}{n(c - 1)}$$

This formula is also used to calculate and analyze the validity of the developed textbooks. As for the practicality of the textbook, the calculation was carried out using a percentage (Riduwan, 2013).

This research was conducted by paying attention to the five stages of ADDIE. In detail, the five stages are:

Table 2. Details of the ADDIE stages used

Development Stage	Activities
Analysis	Identify textbooks that are suitable for student conditions, learning objectives, learning content/materials, learning environment, and delivery strategies in learning by: <ol style="list-style-type: none"> 1. Conduct curriculum analysis. 2. Conduct a needs analysis.
Design	<ol style="list-style-type: none"> 1. Design the concept of the textbook on paper. The draft is written for each chapter of the textbook. 2. Designing development tools related to textbooks, such as validation sheets for textbook validation questionnaires and practicality questionnaires, textbook validation sheets, and practicality questionnaire sheets.
Development	<ol style="list-style-type: none"> 1. Developing supporting tools needed in developing textbooks, such as textbook validity questionnaires and practicality questionnaires. 2. Developing textbook.
Implementation	<ol style="list-style-type: none"> 1. Implementing the use of textbooks in the learning process. 2. Distributing a practicality questionnaire to students regarding the use of textbooks. 3. Revise the textbook according to the results of the practicality questionnaire.
Evalu-ation	<ol style="list-style-type: none"> 1. Conducting a final check on the perfection of the developed textbook based on the results of expert validation and practicality. 2. Perform final calculations related to the level of validity of textbooks and analyze them. 3. Perform final calculations related to the level of the practicality of textbooks and analyze them.

III. Results and Discussion

This research aims to develop and produce Islamic-integrated educational research statistics textbooks with a minimum level of validity and a minimum level of practicality. The activities in this study began by ensuring that each instrument was suitable for use.

Research Instrument Development

The instruments developed in this study consisted of textbook validation sheets and textbook practicality sheets. However, their feasibility must be guaranteed before these two questionnaires are given to validators and students. Therefore, researchers also designed validation sheets for textbook validity questionnaires and validation sheets for practicality questionnaires.

Table 3. Recapitulation of the validation results of the teaching book validity questionnaire

NO	Aspect Observed	Assessment		
		EN (r ₁)	IF (r ₂)	AS (r ₃)
1	The suitability of each statement with good textbook criteria.	5	4	5
2	Accuracy of language use by EBIYD (Ejaan Bahasa Indonesia yang Disempurnakan).	4	4	4
3	Appropriateness of language use by the age level of students.	4	4	5
4	Precision in the use of language so that it is not double or ambiguous.	4	4	4
5	The clarity of the statement does not require the validator/expert to remember long-forgotten things.	4	5	5
6	The suitability of the number of statement items with the age level of the validator/expert.	3	4	5
7	A sequence of statements that starts	4	4	5

NO	Aspect Observed	Assessment		
		EN	IF	AS
	from general statements to specific statements.			
8	Attractiveness of the physical appearance of the questionnaire.	3	4	5
Total		31	33	38
Lowest Assessment (I₀)		8	8	8
s = r - I₀		23	25	30

Thus obtained:

$$\sum s = s_1 + s_2 + s_3 = 23 + 25 + 30 = 78$$

Furthermore, since there are 8 statements and 5 scoring categories (score 1, 2, 3, 4, and 5), then:

$$c - 1 = 8 \times (5 - 1) = 32$$

Finally, with a total number of validators $n = 3$, using the Aiken index formula (Retnawati, 2016):

$$V = \frac{\sum S}{n(c - 1)}$$

Obtained:

$$V = \frac{78}{3(32)} = \frac{78}{96} = 0,8125$$

The validity score for the textbook validity questionnaire is 0.8125, which is included in the very valid category (Retnawati, 2016).

Although this questionnaire is considered very valid, the validator still considers that there needs to be improvements before the teaching book validation questionnaire is given to the validator. The suggestions and comments of the validator of the textbook validation questionnaire sheet can be seen in the following figure:

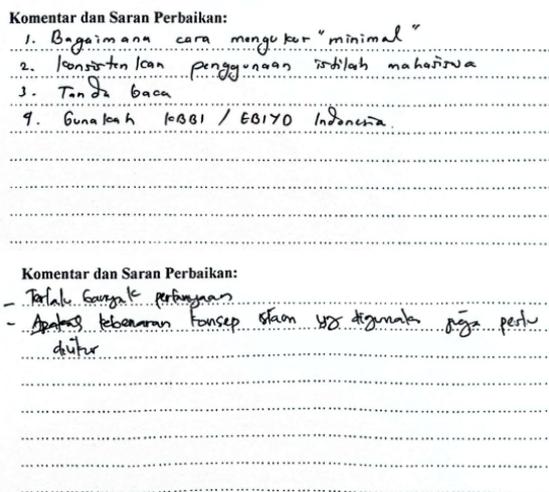


Figure 1. Validator comments and suggestions related teaching book validation questionnaire sheet

The recapitulation of the validator's assessment of the textbook's practicality questionnaire can be seen in the following table:

Table 4. Recapitulation of practicality questionnaire validation results

NO	Aspect Observed	Assessment		
		EN (r ₁)	IF (r ₂)	AS (r ₃)
1	The suitability of each statement with good textbook criteria.	5	4	5
2	Accuracy of language use by EBIYD (Ejaan Bahasa Indonesia yang Disempurnakan).	3	4	4
3	Appropriateness of language use by the age level of students.	4	4	5
4	Precision in the use of language so that it is not double or ambiguous.	3	4	4
5	The clarity of the statement does not require the validator/expert to remember long-forgotten things.	4	5	5
6	The suitability of the number of statement items with the age level of the validator/expert.	4	4	5
7	A sequence of statements that starts	3	4	5

NO	Aspect Observed	Assessment		
		EN	IF	AS
	from general statements to specific statements.			
8	Attractiveness of the physical appearance of the questionnaire.	4	4	5
TOTAL		30	33	38

Description: Ideal maximum score: 40

Using the same method in calculating the validity of the textbook validation questionnaire, an Aiken index score of 0.802 (very valid) was obtained.

Although this practicality questionnaire is included in the very valid category, the validator still considers that there needs to be improvement before the practicality questionnaire of this textbook is given to students. The validator's suggestions and comments on the practicality questionnaire sheet of this textbook can be seen in the following figure:

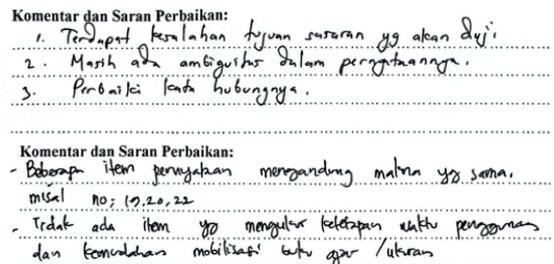


Figure 2. Validator comments and suggestions related practicality questionnaire sheet

The improvements that researchers made to the textbook validation questionnaire are as follows:

1. The use of the vocabulary "ending" is replaced with "closing" in statement number 31.
2. Marks the comma "," in some statements (statement numbers 3, 4, 13, 19, 27, 28, and 36).
3. "... in accordance with Indonesian written communication ..." is replaced with "... in accordance with the rules of Indonesian written communication ..." in statement number 36.

4. The vocabulary "learners " is replaced with "students" in statements 61 and 62.

However, several things are suggested for validators to improve related to the textbook validation questionnaire, which researchers do not do, considering that what researchers do is appropriate. This can be seen in the following details:

Tabel 5. Recommendations regarding the textbook validation questionnaire that was not conducted

Validator Suggestion	Action
"There are too many questions.	The 69 statements were not reduced This is because each statement item is indeed compiled based on the guiding textbook eligibility criteria. Researchers are worried that if the number of statements is reduced, the feasibility of the developed textbook will be reduced. Moreover, researchers felt that no statements could be combined into one.
"The correctness of the Islamic concepts used also needs to be measured"	The researcher has re-examined the Islamic integration used. The researcher felt that nothing needed to be changed because the references that the researcher used related to Islamic concepts were also apparent. In addition, the researcher also hopes that the textbook validator, a mathematics education lecturer with a good Islamic background (having studied at an Islamic religious college), will provide an assessment and suggestions regarding the Islamic concepts in the developed textbook.

Furthermore, the improvements that researchers made to the practicality questionnaire are as follows:

1. The use of the vocabulary "teacher" is changed to "lecturer" in statement number 13.
2. The language of statement number 20, which originally read "The language used in the textbook is not difficult to understand," was changed to "The language used in the textbook is not difficult to understand."
3. The language of statement number 23, which originally read "The Islamic value of the

material content in the textbook adds to my Islamic knowledge," was changed to "The Islamic value of the material content in the textbook adds to my Islamic knowledge."

However, several things are suggested for validators to improve related to the textbook validation questionnaire, which researchers do not do, considering that what researchers do is appropriate. This can be seen in the following details:

1. The validator stated, "There are no items that measure the timeliness of use and ease of mobilization of textbooks/sizes." Researchers did not add this statement item because they have not found references to indicate that ease of mobilization is one of the criteria for textbook eligibility.
2. The validator stated, "Statement numbers 19, 20 and 22 have the same meaning".

Researchers only improved the language of statement 20. They did not change statement items 19 and 22 because they had different meanings of emphasis.

Textbook Development

After the researchers improved the textbook validation questionnaire based on the validator's suggestions and comments, the next step was distributing the questionnaire to expert validators. The validators involved in this validation stage amounted to 3 people, namely Mrs. AK, Mr. RM, and Mrs. ARS. All three are mathematics education lecturers who have taught and are currently teaching educational research statistics courses and have studied at Islamic religious universities.

The recapitulation of textbook validation assessments from the three validators is as follows:

Table 6. Recapitulation of Textbook Validation Results

Aspct Observed	Total Statements	Assessment		
		AK (r ₁)	RM (r ₂)	ARS (r ₃)
Content eligibility	18	84	80	86
Presentation	16	77	75	75

Aspct Observed	Total Statements	Assessment		
		AK (r_1)	RM (r_2)	ARS (r_3)
feasibility				
Language appropriateness	4	20	16	19
Graphics feasibility	21	101	101	100
Integration of Islamic value	10	48	40	48
Total	69	330	312	328

Using the same method in calculating the validity of the textbook validation questionnaire, an Aiken index score of 0.9215 (very valid) was obtained.

Although this textbook is included in the very valid category, the validator still considers that there needs to be improvements before this textbook is given to students. The validator's suggestions and comments on this textbook can be seen in the following figure:

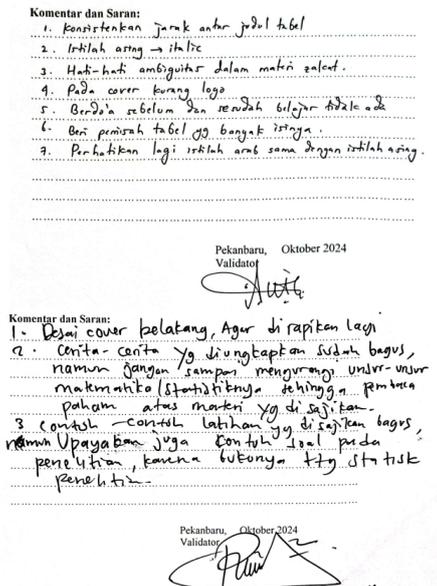


Figure 3. Validator comments and suggestions related to the teaching book

After getting back the textbook validation sheet that the validator has assessed and commented on, the researcher makes improvements to develop this textbook to the next stage (practicality test at the implementation stage). As for the improvements that researchers made to the textbooks developed, namely:

Table 7. Textbook improvement

Repair Notes	Improvement
Pay attention to the table writing.	Change the appearance of the numbers in the table to be simpler by adding important notes.
Small titles should not be centered but presented in numbered form.	Presenting sub-headings in numbered form, not just in a position in the middle of the text. However, this is not done for all subheadings. Some subheadings are not numbered because they are not part of the material.
Consistent spacing between table titles.	Present tables and table titles with consistent spacing, 1 space without spacing.
Correct the spelling of foreign terms.	Correct the writing of foreign terms. However, for the type of absorption words, the writing remains straight, not tilted.
Beware of ambiguity in zakat material.	Recheck the concept of zakat material so that it is not ambiguous.
There is no prayer before and after studying.	Add a recommendation to pray before and after learning on each chapter's beginning and end pages.
There is no logo on the cover.	An image of the UIN Suska Riau logo was added to the textbook's front cover.
Give a table with much content a separator.	Provide precise spacing for tables that contain many data.
The rear cover design is to be tidied up again.	Tidying up the writing on the back cover design of the textbook.

After making improvements to textbooks based on the validation results of the three validators, the next step that researchers must take is to carry out the practicality test. Activities at this stage are carried out by providing textbooks that have been revised based on the suggestions of the three validators. After the textbook was given, the researcher asked students to complete a practical questionnaire about using the developed textbook.

After the researcher received back the questionnaire that all students had filled in, the percentage calculation was carried out using three types of classification: first, the calculation per statement item; second, the calculation of

per-variable practicality (indicators); and third, the overall calculation.

The following table recapitulates the calculation of the practical questionnaire score for each indicator.

Table 8. Recapitulation of questionnaire score calculation for each indicator

Indicator Practicality	Total Score	Total Ideal Score	Percentage
Existence of learning materials (9 statements)	959	1080	81.97
Presentation of activities and exercises (8 statements)	797	960	76.63
Use of language (5 statements)	504	600	77.57
Islamic integration (2 statements)	233	240	89.62

Furthermore, the recapitulation of the calculation of the overall practicality questionnaire score can be seen in Table 6.

Table 9. Recapitulation of overall questionnaire score calculation

Aspect	Score
Maximum	116
Minimum	88
Total	2493
Average	103.88
Ideal Total	2880
Percentage	77.66

Considering all the suggestions and comments above, the improvements researchers made to the developed educational research statistics textbook are as follows.

1. Improve the cover's appearance to be more attractive by combining mathematical and Islamic images. The images and text on the cover are made not to look broken and blurry.

2. Correct the typing in The "author bio" on the back cover should be corrected to look less dense and include a photo of the author.
3. I changed the title of Chapter I to "Introduction to Statistics" in line with that in the table of contents.
4. Add an item about the processing time on the exercise questions given in each chapter.

The following is an example of the Islamic concept in the content of the material in the developed textbook:

---Statistika Penelitian Pendidikan---

Sijjin dan Illiyin



Gambar 2.1 Kitab
(Sumber: canva.com)

Allah SWT senantiasa teliti dan manusia tidak akan pernah luput atas setiap perbuatan yang dilakukannya. Allah SWT memerintahkan malaikat-Nya untuk mencatat setiap perbuatan manusia. Hal ini sebagaimana firman Allah SWT dalam QS. Az-Zukhruf: 80, yang artinya:

"Ataukah mereka mengira Kami tidak mendengar rahasia dan bisikan-bisikan mereka? Sebenarnya (Kami mendengar), dan utusan-utusan (malaikat-malaikat) Kami selalu mencatat di sisi mereka."

Allah SWT meminta untuk malaikat-Nya untuk menuliskan catatan tersebut dalam sebuah kitab. Namun, tentu saja wujud kitab ini tidak bisa disamakan sebagaimana kitab yang pernah muncul dan kita lihat di dunia ini. Hanya Allah SWT lah yang paling tahu akan hal ini. Hal ini sebagaimana firman Allah SWT berikut:

Bab 2 : Penyajian Data 21

---Statistika Penelitian Pendidikan---

"(Allah berfirman): 'Inilah Kitab (catatan) Kami yang menentukan kepadamu dengan sebenar-benarnya. Sesungguhnya Kami telah menyuruh mencatat apa yang telah kamu kerjakan'." (QS. Al-Jasyah: 29)

"Dan segala sesuatu yang telah mereka perbuat tercatat dalam buku-buku catatan." (QS. Al-Qamar: 52)

Data catatan terkait setiap perbuatan manusia tersebut disajikan dalam bentuk sebuah kitab. Kitab "Sijjin" untuk catatan buruk (mendurhakai Allah SWT) manusia dan kitab "Illiyin" untuk catatan baik (taat kepada Allah SWT) manusia. Hal ini sebagaimana firman Allah SWT berikut:

"Sekali-kali jangan curang, karena sesungguhnya kitab orang yang durhaka tersimpan dalam Sijjin." (QS. Al-Muthaffifin: 7)

"Sekali-kalitidak, sesungguhnya kitab orang-orang yang berbakti itu (tersimpan) dalam 'Illiyin.'" (QS. Al-Muthaffifin: 18)

A. KEGUNAAN PENYAJIAN DATA

Penyajian data yang baik dapat memberikan manfaat yang berarti. Beberapa manfaat tersebut, yaitu:

1. Menarik pihak lain untuk membaca data yang disajikan.
2. Memudahkan pembaca dalam memahami informasi yang terkandung pada data yang disajikan.
3. Mempermudah analisis data dalam jumlah yang banyak.
4. Menunjukkan perkembangan suatu keadaan.
5. Mengadakan perbandingan suatu keadaan pada suatu waktu.

Bab 2 : Penyajian Data 22

Figure 4. Islamic concepts in the context of data presentation materials

The following is an example of the Islamic concept in the question of the material in the developed textbook:

---Statistika Penelitian Pendidikan---

Permasalahan

Pada cerita perang tabuk tersebut, diketahui bahwa jumlah pasukan musuh sebanyak 40.000 orang dan pasukan Muslimin sebanyak 30.000 orang. Data lainnya terkait jumlah pasukan musuh dan kaum Muslimin pada perang-perang yang diikuti Rasulullah Saw dapat dilihat pada tabel berikut.

Tabel 1.1 Beberapa Perang Terkenal pada Masa Rasulullah Saw

Nama Perang	Jumlah Pasukan	
	Kaum Muslimin	Kaum Musyrikin
Perang Badar	313 orang	1.000 orang
Perang Uhud	700 orang	3.000 orang
Perang Khandaq	3.000 orang	10.000 orang
Perang Khaibar	1.600 orang	10.000 orang
Perang Mu'tah	3.000 orang	200.000 orang
Perang Hunain	12.000 orang	12.000 orang
Perang Tabuk	30.000 orang	40.000 orang

Sumber: *Sirah Nabawiyah*

Berdasarkan data pada tabel, tentukanlah jawaban dari pertanyaan berikut:

1. Pada perang apakah jumlah pasukan kaum Muslimin yang paling sedikit?
2. Pada perang apakah jumlah pasukan kaum Musyrikin yang paling banyak?
3. Pada perang apakah kemungkinan terbesar pasukan kaum Muslimin mengalami kekalahan berperang melawan pasukan kaum Musyrikin?

Jawaban:

Dengan melakukan analisis terkait jumlah masing-masing pasukan kaum Muslimin dan kaum Musyrikin pada setiap perang tersebut, maka:

1. Jumlah pasukan kaum Muslimin yang paling sedikit adalah pada perang Badar, yaitu sebanyak 313 orang.
2. Jumlah pasukan kaum Musyrikin yang paling banyak adalah pada perang Mu'tah.
3. Kemungkinan terbesar pasukan kaum Muslimin mengalami kekalahan berperang melawan pasukan kaum Musyrikin terjadi pada perang Mu'tah, karena:

Bab 1 : Pengantar Statistik

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Figure 5. Islamic concepts in the question

Based on the research results, an issue must be discussed in depth. This is related to the presentation of Islamic concepts in the textbook. The validators considered that the Islamic concept slightly drowned the content of the research statistics material (only one of the three validators thought this way). And, it turns out that this is also in line with the comments of one of the students at the practicality stage. He considered the writing in the textbook to be too full.

In addition, after being associated with other students' suggestions and comments, they are very interested in using the developed educational statistics textbook in learning because they have gained much Islamic knowledge. However, the details and many inserts of new Islamic knowledge in the textbooks make them focus and concentrate on

reading, understanding, and working on the textbook questions. This causes a decrease in their intensity in communicating in class, in other words, a reduction in the level of conversation/discussion during the learning process.

This can have both positive and negative impacts simultaneously. The positive is that learning activities in the classroom will be quieter and more conducive to delivering knowledge. However, the negative is that the concept of cooperation and collaboration that has always been instilled in the era of constructivism-based learning will be increasingly challenging.

After being associated with suggestions and comments (both on the advantages and disadvantages of textbooks), it can be concluded that the more detailed the textbook, the more pages read. In contrast, the reading in the developed textbook contains many new things rarely conveyed, such as the history of war, Islamic stories, and Islamic fiqh. Studying using this textbook will take longer than other books, especially if students are interested in this information. It will undoubtedly make them read more carefully and longer. As a result, the duration of the time allocation will not be fulfilled.

One of this study's weaknesses is the consistent use of time allocation based on what has been planned. On the one hand, researchers are happy to see students' enthusiasm in reading the textbook carefully and working on the questions given. However, on the other hand, the more careful and immersed they are in reading, the more learning time they will take up, especially if they are not reminded. If left unchecked, they even talk about Islamic concepts rather than the statistics material itself.

In addition to the Islamic concept, the lame level of validity from "very" valid to the level of practicality of textbooks that are only "practical," researchers have found the cause. This is due to the influence of color and writing on the front and back covers and the Islamic

concept's depth (length of narration). The error on the *cover* (for which there were no suggestions for improvement from the validator) caused the practicality eligibility criteria section for the indicators of the presentation of activities and exercises and the use of language to be below 80%. This caused the overall percentage of practicality of teaching materials to decrease.

The presence of development related to this educational research statistics textbook can support the improvement of the quality of teachers (teacher students as future teachers). This is because teachers are professional educators who have an essential function, role, and position in realizing the vision of the Ministry of Education and Culture in 2025 (Agustina, Ifrianti, & Negara, 2023).

IV. Conclusion

The results of this study can be summarized in two conclusions. First, the Islamic integrated educational research statistics textbook is at the "very valid" validity level. The Aiken index score is 0.9215. Second, the Islamic integrated educational research statistics textbook based on mathematical communication skills is at the "practical" level of practicality. The numerical validity value is 77.66%. The results of this study imply the production of a textbook suitable for use and tested for its effectiveness in learning educational research statistics. Thus, it opens up opportunities for further research related to the trial of the effectiveness of the developed textbooks, and it is hoped that they can be used widely, not only in the place where the research takes place.

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