

Research Article

Dissemination and Implementation of Character Strengthening Learning Technology Modules

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ABSTRACT

This study aims to analyze the process of dissemination and simultaneous implementation of instructional technology teaching materials based on character strengthening using the Dick and Carey model. This research was using the method of steps 8 and 10 of Borg and Gall's development research. The results of this study were the language aspects in this module were accepted by the readers and users (5.69), the teaching material's systematics were very good (8.75) in integrating the Dick and Carey models and the character reinforcement integration in the teaching material's systematics was in very good (9.13). The lecturers' ability in applying teaching materials was in very good (4.04); the students' character in the lecture was excellent (4.06); the student's understanding and mastery was in very satisfying (84.03) with very good (97%) classic completeness value; and student's response to think-point share learning is 83.55%. This study concluded that the language aspect in this module is accepted by both the readers and users in terms of students and lecturers.

Keywords: *Character strengthening, Dissemination, Implementation learning technology modules*

Introduction

This study is a follow-up from previous studies that have produced the instructional technology teaching materials, integrated with the character reinforcement. Strengthening of packaged characters, using the motto "Kita BISA". The meaning of "Kita" represents lecturers and students, while "BISA" is an acronym for "Bernalar", "Integritas", "San-tun", and "Adil". The developed teaching material is

intended for students, lecturers, and education observers, especially in the field of technology.

The Dick and Carey model was used to develop the materials. The model consists of ten stages: (1) instructional objectives identification; (2) conducting instructional analysis; (3) analyzing the student's initial behavior; (4) writing performance goals; (5) developing assessment instruments; (6) developing instructional strategies; (7) developing and selecting

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teaching materials: (8) designing and conducting formative evaluations: (9) revising learning; and (10) designing and conducting summative evaluations (Desiningrum et al., 2019). The "BISA" character strengthening in the learning process is implemented by observing the students' learning activities. The student activity is measured on a Likert scale namely: 1 = very bad; 2 = bad, 3 = average; 4 = good; 5 = very good (Bello & Aliyu, 2012).

The developed learning technology teaching materials consists of nine chapters: (1) development area and philosophical foundation learning technology, (2) the theoretical base of learning technology and the elements of educational technology; (3) creation and management; (4) usage; (5) process and learning resources; (6) facilitating learning; (7) performance improvement; (8) professional ethics and educational technology; and (9) online learning. This resource is also equipped with glossaries and indexes. Besides that, it also contains character strengthening implementation in every student learning activity. The systematics in the teaching materials on each chapter is presented as the following: 1) general instructional objectives; 2) special instructional goals; 3) learning activities, which consists of 2 activities; 4) references;

5) independent task; 6) observation sheet for student learning activity; 7) formative test; and 8) summative test (Desiningrum et al., 2019; Januszewski & Molenda, 2008).

This research is a process of dissemination and implementation of the developed teaching materials. Quasi-experimental research was conducted to determine the quality of teaching materials about the ability of the lecturers to deliver material; assessment of student character in their learning activities; the understanding of students towards the content of teaching materials; and student responses to character-based teaching materials (Mahlail et al., 2018).

Methods

This research was focused to conduct a trial of teaching materials using steps 8 and 10 of development research (see Figure 1). In step 8 or operational field testing, the researcher prepares a questionnaire to find out the quality of teaching materials in the linguistic, content, and character strengthening aspects. While in step 10, dissemination and implementation, the researchers conducted quasi-experimental research on the same two parallel classes by applying the think pairs share (TPS) learning model (Seels & Richey, 1994).



Figure 1. The 10 Steps of Development Research (Gall et al., 2013)

Each respondent has their function in this research: (1) delivering the teaching material in the classroom using the TPS learning model; (2) observe the lecturers when delivering the teaching material; (3) observe the student

learning activities and assess the student character during lectures; (4) review the teaching materials; and (5) participate in the lectures (Januszewski, 2012).

The respondents that were tasked to review the teaching materials needed to review the said materials in these following aspects: (1) linguistic aspects; (2) content, specifically the integration of Dick and Carey's model in the systematics of instructional materials; and (3) the integration of character reinforcement in the teaching materials. The data was collected using questionnaires that were filled in by the reviewer on those aspects. This activity was the implementation of the eighth step of the development research (Khotimah et al., 2019).

The indicators for the linguistic aspect were: (a) variety of languages; (b) sentence's effectiveness (i.e, short, straightforward and use singular meaning); (c) grammatically correct; (d) equipped with a list of difficult words (i.e, technical terms); (e) positive and active sentences; and (f) each paragraph contains the clear main idea, integrated, and its sentences are coherence. These indicators were used to elucidate the integration of the Dick and Carey models the modules; (1) identity instructional goals, (2) conduct instructional analysis, (3) analyze learners and contexts, (4) write performance objectives, (5) develop assessment instruments, (6) develop instructional strategy, (7) develop and select instructional materials, (8) design and conduct a formative evaluation of instruction, (9) revise instruction, (10) design and conduct summative evaluation). While the indicators for the character strengthening were based on the "BISA". All of the indicators were reviewed and ranked based on the Likert scale from 1 (very bad) to 10 (very good) (Punaji, 2010).

A quasi-experimental study was performed on the students of Elementary School Teacher Education (ESTE) at Wijaya Kusuma University Surabaya (WKUS). There were two identical classes, namely the control class with 22 students and the experimental class with 25 students. The control class studied the learning technology teaching materials using conventional methods while the experimental used the TPS learning model. The teaching material was assisted by character strengthening learning technology module, which consists of 9 modules (Handayani, 2010):

Module 1: Development, region, and foundation of the philosophy of learning technology.

Module 2: Theoretical foundation of learning technology.

Module 3: Creation in learning technology.

Module 4: Usage in learning technology.

Module 5: Management in learning technology.

Module 6: Facilitating learning.

Module 7: Improve performance.

Module 8: Professional ethics.

Module 9: Online learning.

The purpose of the quasi-experimental research is to determine the quality of the teaching materials based on character strengthening with the Dick and Carey model. In specific, the objectives are to disseminate learning materials based on character-based learning technology and to implement the teaching materials in the learning process for WSD Kusuma Surabaya ESTE students. During the quasi-experimental process, the following data were collected: (1) observation about lecture management and student's activities during lecture; (2) the student's understanding of the materials; (3) documentation on student's learning completeness; and (4) questionnaire to obtain data on student responses after learning of each module with the Think Pairs Share learning model.

The assessed indicators for the first data were: (1) preparation, (2) implementation, including introduction, core activities, and closing; (3) time management; and (4) the class atmosphere. The assessment indicators of the "BISA" character in the learning activities or the second data were: (a) reasoning ability (b); (b) ability to integrate with learning activities (i); (c) able to do good deeds in learning activities (s); and (d) able to do fair in learning activities (A). The third data, the student's learning completeness, was assessed based on the indicators that were stated in the learning objectives in each module. Moreover, the classical completeness (CC) was calculated as well to check the understanding completeness. CC was calculated by this formula:

$$CC = \left(\frac{\sum \text{complete student}}{\sum \text{students}} \right) \times 100\% \quad (1)$$

Finally, the indicators for student response to the teaching module are listed in 16 items per module. At the end of each lesson, each module had a questionnaire about the

emotional response to the teaching material. Descriptive analysis was employed to analyze the data and the equality between the two classes was calculated using SPSS.16.0 (IBM, USA).

We conducted development research through survey research and qua-si-experimental research. The respondents in this study were 77 people (see Table 1).

Result and Discussion

Table 1. Respondents' Detail and Job Description

Status of respondents	N	Agency	Job description
Readers, users, and researchers	1	WKUS ESTE Undergraduate Lecturer	Delivering instructional Materials during lectures
Readers, users	5	WKUS ESTE Undergraduate Lecturer	Observing lecturer activities
Readers, users	6	WKUS ESTE Undergraduate Lecturer	Observing student learning activities and assessing student character
Readers	7	WKUS ESTE Undergraduate Lecturer	Reviewing teaching materials
Readers, users	47	WKUS ESTE Undergraduate Students	Participate in Education Technology lectures
Readers	11	WKUS ESTE Undergraduate Lecturer	Reviewing teaching materials
Total	77		

Linguistic Aspect

Based on the linguistic indicators, the results showed an average score of 5.69 on a 1-10 scale. The score indicated that the language aspects of the developed teaching module were well accepted by its readers and users (see Table 2).

The Integration of The Dick and Carey Model in the Module

The review result showed an average score of 8.75 on a 1-10 scale (see Table 3). This score falls into the category that the integration of Dick and Carey's model in the teaching material is very good.

The Integration of Character Reinforcement in the Module

The character reinforcement in modules 1-9 has an average value of 9.13, on the 1-10 scale (see Table 4). This score is indicated that the integration of character strengthening in teaching material falls to a very good category.

Quasi-Experimental

The lecturer's ability to apply teaching materials

The ability of lecturers to apply teaching materials in lectures is assessed by 5 lecturers, namely 3 lecturers from Wijaya Kusuma University and 2 lecturers from TPM Surabaya State University. The results of observations showed an average score of 4.04 on a 1-5 scale (see Table 5). The score falls in the very good category.

Student character values in lectures

The assessment of student character in lectures was assessed by 6 lecturers from Wijaya Kusuma University who each observed 5 students in the lecture. The average character score of students in lectures is 4.06 (see Table 6). The average value of 4.06 falls into the very good category.

Understanding and completeness of student learning

The average value of comprehension and completeness of student learning in lectures is 84.03 (see Table 7), which indicated to very satisfactory category. The minimum value which indicates a student's complete understanding of the material is ≥ 80 on average. The CC value was 97%, which means that the

overall understanding of students towards the teaching materials was also very good.

Student response to learning

Student responses follow lectures on character-based learning technology at

83.55% (see Table 8). This percentage indicates that students feel happy and motivated to learn the material of learning technology based on character strengthening.

Table 2. Language Aspect Assessment of the Teaching Material

Assessment Indicators	Assessment value per module									Total	Average
	1	2	3	4	5	6	7	8	9		
Languages variety	5.53	5.23	5.76	6.42	5.03	6.81	6.14	5.02	5.03	50.97	5.66
Effective sentences	5.03	6.56	5.03	5.03	6.03	5.03	5.11	6.29	5.72	49.83	5.54
Grammar	5.12	5.23	6.76	6.29	6.02	5.62	5.89	5.02	6.29	52.24	5.80
List for difficult words	6.54	5.03	5.76	5.03	6.09	5.62	5.03	5.67	5.53	50.3	5.59
Positive and active sentences	5.82	5.23	5.03	6.67	6.02	6.83	6.91	5.82	5.84	54.17	6.02
Paragraph coherency	5.02	5.56	5.76	5.59	6.02	5.43	6.17	5.02	5.03	49.6	5.51
Total	33.06	32.84	34.1	35.03	35.21	35.34	35.25	32.84	33.44	307.11	34.12
Average	5.51	5.47	5.68	5.84	5.87	5.89	5.88	5.5	5.57	51.19	5.69

Table 3. Assessment of Integration of the Dick and Carey Models

Assessment indicators	Assessment value per module									Total	Average
	1	2	3	4	5	6	7	8	9		
Identity instructional goals	9.26	9.52	8.21	8.71	8.23	8.71	8.21	9.47	9.04	79.36	8.82
Conduct instructional analysis	8.23	9.47	9.04	8.48	8.21	8.48	9.04	8.71	7.88	77.54	8.62
Analyze learners and contexts	8.21	8.71	7.88	8.92	9.04	8.23	7.88	8.48	9.52	76.87	8.54
Write performance objectives	9.04	8.48	9.52	9.26	7.88	8.21	9.52	8.92	9.47	80.3	8.92
Develop assessment instruments	7.88	8.92	9.47	8.23	9.52	9.04	9.47	8.23	8.71	79.47	8.83
Develop instructional strategy	9.52	8.23	8.71	8.21	8.23	9.47	9.04	9.26	9.52	80.19	8.91
Develop and select instructional materials	9.47	8.21	8.48	9.04	8.21	8.71	7.88	8.23	9.47	77.7	8.63

Assessment indicators	Assessment value per module									Total	Average
	1	2	3	4	5	6	7	8	9		
Design and conduct a formative evaluation of instruction	8.71	9.04	8.23	7.88	9.04	8.48	9.52	8.21	8.71	77.82	8.65
revise instruction	8.48	7.88	8.21	9.52	7.88	8.92	9.47	9.04	8.48	77.88	8.65
Design and conduct a summative evaluation	8.92	9.52	9.04	9.47	9.52	8.23	8.71	7.88	8.92	80.21	8.91
Total	87.72	87.98	86.79	87.72	85.76	86.48	88.74	86.43	89.72	787.34	87.48
Average	8.77	8.80	8.68	8.77	8.58	8.65	8.87	8.64	8.97	78.73	8.75

Table 4. Assessment of the Dick and Carey Models Integration

Character strengthening indicator	Assessment value per module									Total	Average
	1	2	3	4	5	6	7	8	9		
Reasoning (B)	9.52	8.64	8.71	9.21	8.23	9.47	9.04	9.26	9.52	81.6	9.07
Integrity (I)	9.47	9.69	8.48	9.04	9.66	8.71	8.64	8.23	9.47	81.39	9.04
Polite (S)	8.92	9.52	9.04	9.47	9.52	8.23	8.71	9.88	8.92	82.21	9.13
Fair (A)	9.04	8.48	9.52	9.26	9.62	9.71	9.52	8.92	9.47	83.54	9.28
Total	36.95	36.33	35.75	36.98	37.03	36.12	35.91	36.29	37.38	328.74	36.53
Average	9.24	9.08	8.94	9.25	9.26	9.03	8.98	9.07	9.35	82.19	9.13

Table 5. Lecturer's Ability to Apply Teaching Materials Observation Results

Assessment factors	Obs-1	Obs-2	Obs-3	Obs-4	Obs-5	Total	Average	Category
Preparation	3.96	4.42	3.78	3.96	3.64	19.76	3.95	Good
Implementation/action								
A. Introduction	3.64	3.8	4.6	3.64	4.06	19.74	3.95	Good
B. Core activities	4.56	4.2	4.32	4.88	3.92	21.88	4.38	Very good
C. Closing	3.92	3.48	3.96	3.92	3.68	18.96	3.79	Good
Time management	3.68	3.96	3.42	3.68	4.34	19.08	3.82	Good
Class atmosphere	4.12	4.78	3.76	4.62	4.46	21.74	4.35	Very good
Total	23.88	24.64	23.84	24.70	24.10	121.16	24.23	
Average	3.98	4.11	3.97	4.12	4.02	20.19	4.04	Very good

Table 6. Character Values (Kita BISA) Students in Each Module

Student code	Character values per module									Total	Average
	1	2	3	4	5	6	7	8	9		
00001	3.96	4.42	3.78	3.96	3.64	3.48	3.96	3.92	3.68	34.8	3.87
00002	3.64	3.8	4.6	3.64	4.06	3.96	3.42	3.68	4.34	35.14	3.90
00003	4.56	4.2	4.32	4.88	3.92	4.78	3.76	4.62	4.46	39.50	4.39
00004	3.92	3.48	3.96	3.92	3.68	4.11	3.97	4.12	4.02	35.18	3.91
00005	3.68	3.96	3.42	3.68	4.34	4.56	4.2	4.32	4.88	37.04	4.12
00006	4.12	4.78	3.76	4.62	4.46	3.92	3.48	3.96	3.92	37.02	4.11

Student code	Character values per module									Total	Average
	1	2	3	4	5	6	7	8	9		
00007	3.98	4.11	3.97	4.12	4.02	3.68	3.96	3.42	3.68	34.94	3.88
00008	3.96	3.42	4.56	4.2	4.32	4.88	3.92	4.78	4.2	38.24	4.25
00009	4.78	3.76	3.92	3.48	3.96	3.92	3.68	4.11	3.48	35.09	3.90
00010	4.11	3.97	3.68	3.96	3.42	3.68	4.34	4.56	3.96	35.68	3.96
00011	4.88	3.92	4.78	3.76	4.62	4.46	3.76	4.62	4.46	39.26	4.36
00012	3.92	3.68	4.11	3.97	4.12	4.02	3.97	4.12	4.02	35.93	3.99
00013	3.68	4.34	4.56	4.2	4.32	4.88	4.56	4.2	4.32	39.06	4.34
00014	4.62	4.46	3.92	3.48	3.96	3.92	3.92	3.48	3.96	35.72	3.97
00015	4.12	4.02	3.68	3.96	3.42	3.68	3.68	3.96	3.42	33.94	3.77
00016	4.2	4.32	4.88	3.92	4.78	4.2	4.78	3.76	4.62	39.46	4.38
00017	3.48	3.96	3.92	3.68	4.11	3.48	4.11	3.97	4.12	34.83	3.87
00018	3.96	3.42	3.68	4.34	4.56	3.96	3.76	4.62	4.46	36.76	4.08
00019	4.2	4.32	4.88	3.92	4.78	4.2	3.92	3.68	4.11	38.01	4.22
00020	3.48	3.96	3.92	3.68	4.11	3.48	3.68	4.34	4.56	35.21	3.91
00021	3.96	3.42	3.68	4.34	4.56	3.96	4.62	4.46	3.92	36.92	4.10
00022	3.76	4.62	4.46	3.76	4.62	4.46	4.12	4.02	3.68	37.50	4.17
00023	3.97	4.12	4.02	3.97	4.12	4.02	4.2	4.32	4.88	37.62	4.18
00024	4.2	4.32	4.88	4.56	4.2	4.32	3.48	3.96	3.92	37.84	4.20
00025	3.96	3.92	3.68	4.11	3.48	3.68	3.96	3.42	3.68	33.89	3.77
Total	101.1	100.7	103.02	100.11	103.58	101.69	99.21	102.42	102.75	914.58	101.62
Average	4.044	4.028	4.1208	4.0044	4.1432	4.0676	3.9684	4.0968	4.11	36.58	4.06

Table 7. Student's Understanding Value in Each Module

Student Code	Student's understanding value in each module									Total	Average	Category	Completeness
	1	2	3	4	5	6	7	8	9				
00001	87.2	78.2	89.3	90.81	92.2	89.3	90.12	88.02	89.3	794.45	88.27	Satisfy	Complete
00002	90.81	74.8	78.96	81.26	90.8	78.96	78.2	86.96	78.96	739.71	82.19	Satisfy	Complete
00003	81.26	74.6	86.2	89.3	78.6	86.2	74.8	90.12	86.2	747.28	83.03	Satisfy	Complete
00004	89.3	76.86	78.6	78.96	78.6	78.6	74.6	88.24	78.6	722.36	80.26	Satisfy	Complete
00005	78.96	84.88	74.8	86.2	74.8	74.8	76.86	78.2	88.02	717.52	79.72	Good	Not complete
00006	86.2	88.02	88.4	78.6	74.6	88.4	84.88	74.8	86.96	750.86	83.43	Satisfy	Complete
00007	78.6	86.96	90.8	74.8	76.86	92.2	88.02	74.6	90.12	752.96	83.66	Satisfy	Complete
00008	74.8	90.12	78.2	88.4	84.88	90.8	86.96	76.86	88.24	759.26	84.36	Satisfy	Complete
00009	88.4	88.24	74.8	92.2	88.02	84.86	90.12	84.88	74.8	766.32	85.15	Satisfy	Complete
00010	92.2	84.6	74.6	90.8	86.96	78.2	88.24	88.02	74.6	758.22	84.25	Satisfy	Complete
00011	90.8	86.8	76.86	78.6	90.12	74.8	84.6	86.96	76.86	746.40	82.93	Satisfy	Complete
00012	78.6	80.2	84.88	78.6	88.24	74.6	86.8	90.12	84.88	746.92	82.99	Satisfy	Complete
00013	78.8	87.2	88.02	74.8	84.6	76.86	80.2	88.24	88.02	746.74	82.97	Satisfy	Complete
00014	78.2	90.81	86.96	88.4	86.8	84.88	89.3	84.6	86.96	776.91	86.32	Satisfy	Complete
00015	74.8	81.26	90.12	78.2	80.2	88.02	78.96	86.8	90.12	748.48	83.16	Satisfy	Complete
00016	74.6	89.3	88.24	74.8	88.02	86.96	86.2	80.2	88.24	756.56	84.06	Satisfy	Complete
00017	76.86	78.96	84.6	74.6	86.96	90.12	78.6	88.02	84.6	743.32	82.59	Satisfy	Complete
00018	84.88	86.2	86.8	76.86	90.12	88.24	74.8	86.96	86.8	761.66	84.63	Satisfy	Complete
00019	88.02	78.6	80.2	84.88	88.24	84.6	88.4	90.12	80.2	763.26	84.81	Satisfy	Complete

Student Code	Student's understanding value in each module									Total	Average	Category	Completeness
	1	2	3	4	5	6	7	8	9				
00020	86.96	74.8	92.2	88.02	84.6	86.8	92.2	88.24	89.3	783.12	87.01	Satisfy	Complete
00021	90.12	88.4	90.8	86.96	86.8	80.2	90.8	86.2	78.96	779.24	86.58	Satisfy	Complete
00022	88.24	92.2	78.6	90.12	80.2	86.2	88.02	88.02	86.2	777.80	86.42	Satisfy	Complete
00023	84.6	90.8	78.8	88.24	87.2	78.6	86.96	86.96	78.6	760.76	84.53	Satisfy	Complete
00024	86.8	78.6	78.2	84.6	90.8	74.8	90.12	90.12	74.8	748.84	83.20	Satisfy	Complete
00025	80.2	84.88	74.8	86.8	78.6	88.4	88.24	88.24	88.4	758.56	84.28	Satisfy	Complete
Total	2090.21	2096.29	2074.74	2085.81	2117.82	2086.40	2117.00	2140.50	2098.74	18907.51	2100.83		
Average	83.61	83.85	82.99	83.43	84.71	83.46	84.68	85.62	83.95	756.30	84.03	Satisfy	

Table 8. Percentage of Positive Response to The Teaching Materials

Respected aspects	Percentage of positive response									Total	Average	Category
	Mod-1	Mod-2	Mod-3	Mod-4	Mod-5	Mod-6	Mod-7	Mod-8	Mod-9			
Deliver the learning objectives	89.3	90.81	92.2	89.3	90.12	88.4	88.24	74.8	92.2	795.37	88.37	Good
Motivate students	78.96	81.26	90.8	78.96	78.2	92.2	84.6	74.6	90.8	750.38	83.38	Good
Associate material with characters We CAN	86.2	89.3	78.6	86.2	74.8	90.8	86.8	76.86	78.6	748.16	83.13	Good
Guide students to work on assignments, papers, and presentation preparation	78.6	78.96	78.6	78.6	74.6	78.6	80.2	84.88	78.6	711.64	79.07	Good
Guiding and motivating students to apply characters We CAN through reasoning skills in every action	74.8	86.2	74.8	74.8	76.86	78.8	87.2	88.02	74.8	716.28	79.59	Good
Guiding and motivating students to apply the character We CAN by integrating ourselves in every learning activity	88.4	78.6	74.6	88.4	84.88	78.2	90.81	86.96	88.4	759.25	84.36	Good

Respected aspects	Percentage of positive response									Total	Average	Category
	Mod-1	Mod-2	Mod-3	Mod-4	Mod-5	Mod-6	Mod-7	Mod-8	Mod-9			
Guiding and motivating students to apply the character We CAN by Applicable in every action.	90.8	74.8	76.86	92.2	88.02	74.8	81.26	90.12	78.2	747.06	83.01	Good
Guiding and motivating students to apply the character We CAN by Fairly Applicable in every action.	78.2	88.4	84.88	90.8	86.96	74.6	89.3	88.24	74.8	756.18	84.02	Good
Ask students in pairs to discuss completing assignments.	74.8	92.2	88.02	84.86	90.12	76.86	78.96	84.6	74.6	745.02	82.78	Good
Asking several pairs of students to present the results of the discussion	74.6	90.8	86.96	78.2	88.24	84.88	86.2	86.8	76.86	753.54	83.73	Good
Provide feedback	76.86	78.6	90.12	74.8	84.6	88.02	78.6	80.2	84.88	736.68	81.85	Good
Guiding students summarize the material	84.88	78.6	88.24	74.6	86.8	86.96	74.8	92.2	88.02	755.10	83.90	Good
Giving reinforcement/task	88.02	74.8	84.6	76.86	80.2	90.12	88.4	90.8	86.96	760.76	84.53	Good
Time management	86.96	88.4	86.8	84.88	89.3	88.24	92.2	78.6	90.12	785.50	87.28	Good
Students are enthusiastic about learning	90.12	78.2	80.2	88.02	78.96	84.6	90.8	78.8	88.24	757.94	84.22	Good
Students feel motivated in learning	88.24	74.8	88.02	86.96	86.2	86.8	78.6	78.2	84.6	752.42	83.60	Good
Total	1329.74	1324.73	1344.30	1328.44	1338.86	1342.88	1356.97	1334.68	1330.68	12031.28	1336.81	
Average	83.11	82.80	84.02	83.03	83.68	83.93	84.81	83.42	83.17	751.96	83.55	Good

Discussion

The survey addressed 3 (three) aspects, namely; linguistic; the integration of the Dick and Carey model in the systematics of teaching materials; and the integration aspects of strengthening Kita BISA characters in the instructional materials.

The average score of 5.69 indicates that the language aspects in this module are accepted well by the readers and users. This means it is not easy to compile instructional technology

teaching material by paying attention to linguistic aspects. By using several indicators of the linguistic aspects, other researchers are allowed to examine and discuss in more detail the linguistic aspects of teaching materials by using different indicators based on references.

Language is an important factor in developing teaching materials. The use of language, which includes the choice of various languages, word selection, effective sentences, and the preparation of the paragraphs, greatly

influences the understanding and benefits of the teaching materials. The variety of languages used refers to a variety of standard or formal languages and a variety of non-formal or communicative languages. The standard language can be well understood by most of the readers because it is not influenced by the everyday language or regional language dialects. The development of teaching materials (modules 1 through 9) uses a variety of communicative languages, as it will make the reader feel as if they are interacting (pseudo-interaction) with the teacher (Widodo & Jasmadi, 2008). Good teaching materials are expected to motivate students to read, work on their assignments, and generate readers' curiosity to do further exploration on the topic being studied.

The observed category showed that the module was very good at integrating the Dick and Carey model. The result indicates that the author is very concerned about the steps of developing teaching materials with the Dick and Carey model. There are still many other models of teaching material development, therefore other researchers can develop teaching materials using different models (Wardani et al., 2017).

Strengthening character integrity in the systematics of teaching materials. The most important part in the development of teaching materials is the integration of character reinforcement in the systematic teaching materials. The indicator of student character assessment is "BISA" and had an average value of 9.13 or a very good category. However, it is not easy to judge the character of students in their learning activities. An instrument or model of comprehensive student character assessment is needed in every student learning activity.

Conclusion

The conclusions of this study were conveyed that; (1) Language aspect, the results of the review conducted by 18 lecturers in modules 1-9 obtained an average score of 5.69 indicates that the language aspects in this module are accepted by both the readers and users in terms of students and lecturers, (2) The integrity aspects of the Dick and Carey models in the teaching material systematics, indicating is very good, (3) Aspects of character reinforce-

ment integrity in the teaching material systematics is a very good category. While the results of quasi-experimental research provide information that; (a) The ability of lecturers to apply teaching materials in lectures, with a mean score of 4.04. is in the very good category, (b) the character of students in the lecture is 4.06, is the excellent category, (c) Understanding and Mastery of Student Learning in lectures is 84.03, falls into the very satisfying category. This classic completeness value of 97% means that overall student understanding of learning technology teaching material based on character strengthening is very good, (d) Student responses to TPS learning is 83.55%, indicates that students feel happy and motivated to learn the material of learning technology based on character strengthening.

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