A CALL FOR THE 21st CENTURY LEARNING:
EMBEDDING CHARACTER EDUCATION IN THE ENGLISH WORKSHEETS

Syahdan1, Fariza Azkiya Ali2
1Program Studi Pendidikan Bahasa Inggris, Universitas L lancang Kuning, Indonesia
2Sekolah Dasar Al-Mahira, Indonesia
syahdan@unilak.ac.id1, farizaali70@gmail.com2

Abstract: The 21st century learning integrates eight frameworks orientating to the use of Information and Communication Technology (ICT), Learning and Innovation Skills, and other support systems, including the implementation of sociocultural values of Education Character. This study aimed at embedding values of Education Character on test items of English worksheets (LKS) used by students at Islamic Junior High School (SMP IT) Al-Birru Pekanbaru. This study employed Borg and Gall 3D development design. The results of this study showed three phases of development namely Define, Design, and Develop. At the Define phase, the researchers found that the teacher did not modify the questions on the LKS referring to the values of character education. In Design phase, the researchers designed 70 questions on 5 different materials. At this stage, two experts assessed and suggested to revise the instructions, the use of diction and grammar. At the Development phase, the researchers conducted two times pilot study on the items. At this stage, the researchers found that 35 questions were valid. Furthermore, the researchers conducted a test analysis using ANATES 4.09 and obtained the results that 21 out of the 35 items were reliable to be used, with a coefficient value of 0.95. From these results, it can be concluded that there are three development steps carried out namely Define, Design and Develop involving two experts providing an assessment of the development steps taken so that the questions developed are in accordance with character education and are reliable for use in SMP IT Al-Birru Pekanbaru.
A. INTRODUCTION

The Partnership for 21st Century Skills (P21), a joint government-corporate organization, constructed frameworks for learning to thrive in today’s work and life (van Laar et al., 2020). The frameworks are integrated into four outcomes: life and career skills, learning and innovation skills (4Cs), information, media and technology skills, and key subjects and 21st century themes. The skills are scaffolded by four support systems: standards, assessments, curriculum and instruction, professional development, and learning environment aiming at making students more engaged in the learning process (P21, 2019). Yet, some studies tended to narrow the research foci on two broad areas: Information and Communication Technology (ICT) for learning (see for instance Garba et al., 2015; Rezandy et al., 2020; Rusmanayanti & Nasrullah, 2020) and 4C skills—Communication, Collaboration, Critical Thinking, and Creativity—(see for example Azhary & Ratmanida, 2021; Sunardi & Doringin, 2020; Yu & Wan Mohammad, 2019).

In terms of the outcomes, assessment is urgently required to decrease the number low-skilled individuals by taking into account the findings of Organization for Economic Co-operation and Development (OECD, 2013). Hence, Assessment and Teaching of 21st Century Skills (ATC21S) was established to evaluate the achievement and progress of 21st century learning programs. To portray the work, the group split the assessment into four categories to wit, ways of thinking, ways of working, tools for working, and living in the world (Binkley et al., 2012). Further, the sphere of assessment was also developed into cognitive, intrapersonal and interpersonal domains (Pellegrino & Hilton, 2012) to understand and organize 21st century skills as the deeper learning concept (Pellegrino, 2017).

Pertaining to the ideas discussed above, the 21st century learning is a holistic concept that requires beyond cognitive domain, where social-emotional competencies are being the integral part of life and career skills in navigating multifaceted life and work milieu (P21, 2019). To this point, character education is accordance with the 21st century learning, as its scopes are in the domains of, but not are limited to, social-emotional learning and moral education (Singh, 2019).

Character Education, formally known as ‘Kurikulum 2013 (K-13),’ is the Indonesian national curriculum focusing on three core values to wit, teaching values, clarification values and moral development (Agung, 2011). Though the national curriculum for primary and middle schools are in the transitioning process toward the new ‘Prototype curriculum,’ the character education, as a curriculum, is still applied widely in most school in Indonesia. Also, the essence of the curriculum is still relevant for today’s discussion due to its significance for transferring notion of moral value (Herawati, 2016), growing cognitive empathy of students (Hanim & Djunaedi, 2019) and crafting social attitudes and behavior of school community (Murestitiyo, 2018).

Yet, the character education should not only be a general concept of moral virtues (Kurniash et al., 2018; Was et al., 2006), but it should be implemented in action learning (Margerson & Ravenscroft, 2020). To specify, apart from teachers’ modelling the main component (Chapman, 2011), they need to assess the values timely (Liu, 2014). To the later idea, the researchers identified a missing link between the required assessment and its best practice in the Islamic Junior High School of Al-Birru Pekanbaru (SMPIT Al-Birru Pekanbaru).

The Islamic school implemented Character Education (Curriculum 2013) aiming at maintaining good attitude among students, as stated in the syllabus used by the English teacher. In term of instrument for the assessment, however, the teacher got difficulty in developing the English test to measure students’ performance and embedded values of character education. It was identified in a discussion with the teacher and showed by the instrument used for the assessment. The test items in students’ worksheets (LKS) used by the teacher, regrettably, did not embed values required by the curriculum. Regrettably, teacher used the LKS without modifying the items to meet requirement in the syllabus.

This study is significance, not only because the findings at preliminary observation showing the absence of test items containing values of character education in the worksheets, but also some previous findings showing inadequate understanding principles of learning assessment (Jaedun, 2014),
partial understanding of the assessment system (Zurqoni et al., 2018), and complicated assessment process (Tania et al., 2016). Nevertheless, classroom assessment is essential to map and evaluate students’ achievements in a period of study. Therefore, this study aimed at developing test items embedding character education values by defining the initial material of English test stated in worksheets.

B. RESEARCH METHOD

The design of this study was Research and Development (R&D), where the object developed was English test items. The test items were developed pertaining to the need analysis of English test items and the Character Education curriculum, specifically the syllabus at the first semester of grade seventh in SMPIT Al-Birru Pekanbaru. In educational setting and context, R&D can be in form of textbooks, test items or learning media.

To conduct this study, the researcher referred to R&D model of (Samsudi, 2009) by extracting the 10 flows of R&D into 3-D phases (Define, Design, and Develop). The 3-D model was split into some stages begun with literature study and end with English test items as a product of this study. The flow of the design was showed in Figure 1.

The instruments used in this research were:

a. Syllabus. The researchers got the syllabus from English teacher of the school to analyze content of the syllabus.

b. Blueprint. The researchers formulated referring to learning objective in syllabus. It was used as guide when making test items of final semester exam.

c. Card of questions. It contains the formulation of test items that was used as evaluation tool.

d. Expert Validation Sheet. It contains list of items for the expert validators to check. The researchers used it to measure the achievement got on the development of test items.

The researchers used the instruments to collect the data needed in this study.

To analyse the data, the researchers applied three main phases; the preliminary study (Define)– doing literature review and conducting interview– and mapping the initial condition of the materials (test items), Design – including designing new test items and asking expert judgments, Develop – including piloting, revising the items and making analysis of ANATES, as well as revising the draft for being validated by the expert validators. In the stage
of designing items, the researchers asked two expert validators (Zurdianto and Rika Zulkarnain) who have teaching experiences 20+ years. They were also teacher facilitators for English curriculum trainings in their school. In addition, the revision made was done four times before being validated by the experts.

In this research, the researchers analyzed the data to find out the result of new test items that need to be developed. The data was analyzed quantitatively by using ANATES 4.0.9

a. Validity Test

Validity test items are used to determine the support of an item to the level score. Validity refers to whether or not a test measures what it should be measure. In this study the researcher used criterion related validity (validity coefficient to determine whether the test items are valid or not).

The index of Product Moment correlation obtained from the calculation results consulted with r table at a significance level of 5% in accordance with the number of students' answer sheet tested.

b. Reliability Test

Reliability test, for the constructed multiple choice questions, was to identify whether or not the items were accepted and reliable for students. To do so, the researchers used tools of Statistical Package for Social Sciences (SPSS). In further analysis, the researchers used table of coefficient of reliability as shown in the table 1. The researchers only took or choose materials (test items) with the category of 'Sufficient' or $0.40 < r_{xy} \leq 0.60$.

<table>
<thead>
<tr>
<th>Coefficient</th>
<th>Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0.80 &lt; r_{xy} \leq 1.00$</td>
<td>Very High</td>
</tr>
<tr>
<td>$0.60 &lt; r_{xy} \leq 0.80$</td>
<td>High</td>
</tr>
<tr>
<td>$0.40 &lt; r_{xy} \leq 0.60$</td>
<td>Sufficient</td>
</tr>
<tr>
<td>$0.20 &lt; r_{xy} \leq 0.40$</td>
<td>Low</td>
</tr>
<tr>
<td>$r_{xy} \leq 0.40$</td>
<td>Very Low</td>
</tr>
</tbody>
</table>

1. Preliminary Study (Defining Stage)

In the preliminary study, the researchers found there was a need to do research and development (R&D) on the English materials used by an English teacher at the SMP IT Al-Birru, Pekanbaru. It was based on the construct of the test items used by the teacher and the information she shared.

Based on interview with English teacher, the researcher found that the teacher has not created yet English test items covering aspects required by the syllabus of Character Education (Curriculum 2013). The teacher frequently depended upon the materials of test items from internet as reference to construct test. Regarding to the information, the researchers were willing to improve the materials by relating items constructed to the aspects of the curriculum containing character assessment such as respect and appreciate honest, behavior, discipline, responsibility, caring (tolerance, cooperation), courtesy, confidence, in interacting effectively with the social and natural environment within the range of relationships and whereabouts. In this case, the test items were not only focused on students' achievement, but also students should receive lessons of social-emotional values. Whereas those received by students using the previous curriculum only focus on the cognitive aspects of the learning outcomes received at the end of each semester. In addition, teacher used only one learning resource or guidebook. The researchers found that the teacher has not created yet English test items covering aspects required by the syllabus of Character Education (Curriculum 2013). The teacher frequently depended upon the materials of test items from internet as reference to construct test. Regarding to the information, the researchers were willing to improve the materials by relating items constructed to the aspects of the curriculum containing character assessment such as respect and appreciate honest, behavior, discipline, responsibility, caring (tolerance, cooperation), courtesy, confidence, in interacting effectively with the social and natural environment within the range of relationships and whereabouts. In this case, the test items were not only focused on students' achievement, but also students should receive lessons of social-emotional values. Whereas those receive by students using the previous curriculum only focus on the cognitive aspects of the learning
outcomes received at the end of each semester. In addition, teacher used only one learning resource or guidebook.

In the initial condition, the researchers defined the needs of items required to be developed. The purpose of this stage was to stipulate and define English test items and the initial phase was mainly analytical. In the implementation, the researchers did the analysis of the latest document of English test items and syllabus from the school. This stage consisted of three activities, namely literature study, survey (field study) and descriptive and analysis findings. In the literature study; the researchers identified previous findings and arguments related to the English test items. The second activity was survey (field study). Here, the researchers discussed problems of the English teacher in constructing and developing test items. The researchers also requested the English syllabus from the teacher. The third activity was descriptive and analysis findings. After doing discussion with English teacher, it was found that test items constructed by the teacher did not fulfil some aspects of social-emotional as requested in the syllabus of curriculum 2013. The description of initial condition of the test items was illustrated in the following table 2.

<table>
<thead>
<tr>
<th>NO</th>
<th>MATERIALS</th>
<th>CRITERIA</th>
<th>ITEMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Giving commands and prohibition</td>
<td>Have not included in the test items</td>
<td>-</td>
</tr>
<tr>
<td>2</td>
<td>Vocabulary of Jobs</td>
<td>- Vocabulary</td>
<td>1 item</td>
</tr>
<tr>
<td>3</td>
<td>Asking and giving opinion</td>
<td>- Social function</td>
<td>2 items</td>
</tr>
<tr>
<td>4</td>
<td>Asking and giving information</td>
<td>- Social function</td>
<td>2 items</td>
</tr>
<tr>
<td>5</td>
<td>Descriptive Text</td>
<td>- Social function</td>
<td>8 items</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Characteristic of text</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Procedure text</td>
<td>- Social function</td>
<td>20 items</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Characteristic of text</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Like and Dislike</td>
<td>- Social function</td>
<td>2 items</td>
</tr>
<tr>
<td>8</td>
<td>Weather patterns</td>
<td>Have not included in the test items</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>TOTAL</td>
</tr>
</tbody>
</table>

Based on the initial condition of test items of SMPIT Al-Birru Pekanbaru above, the researcher developed the test items that were expected to cover some aspect syllabus of Character Education (curriculum 2013). By doing so, the teacher could measure level of students’ achievement as stated in syllabus.

2. Designing Stage

In the design stage, the researchers designed a prototype the test items. This phase began after finding limitation in the English test items. In the implementation, they were three activities namely formulating design of English test items, expert judgment and revising English test items. Next, the researchers, again, formulated the design of the English test items. In this activity the researcher designed test items based on result of analysis syllabus and material.

a. Formulating Design

Referring to the previous test items, the researcher designed product by embedding values stated in the Character Education curriculum. Prior to that, the researchers made a blueprint and card of questions based on the indicators of achievement in the syllabus. The researchers presented test items that included 70 items, from 5 materials, consisted of 6 items about list and label material, 12 items about expression of asking (using adjective) people and animal, 10 items about expression of asking behavior of people, 7 items about instruction, short notice, warning/caution and 35 items about descriptive text.

b. Expert Judgment

The fifth activity was expert judgment. The researcher asked two experts to review English test items developed, first expert is Zurdianto and second expert is Rika Zulkarnain. Before doing try out the new product to students, the test items should be validated. In this validation, the researchers got some suggestion from the experts to checked, changed, added, and corrected the items into satisfactory level. The first expert asked the researchers to prepare the action verb of taxonomy bloom, format of English test items adjusted with standard of school, and highlighting the issue of HOTS (High Order Thinking Skill). In the evaluation, the expert validator found that some test instructions were not clear, some diction should be adjusted, and some tenses should be revised. In the meantime, the second expert suggested that the test items should be arranged properly
and be suitable with materials required in the syllabus. The researcher discussed each items of the test with second expert and revised material based on the direction. The examples of the formulated test items were shown in the table 3:

Table 3. Example of test items formulated

<table>
<thead>
<tr>
<th>Q14. “I do my bed until it is very tidy” The underlined word means ...</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Neat</td>
</tr>
<tr>
<td>Q16. What does the sign mean?</td>
</tr>
<tr>
<td>A. No smoking</td>
</tr>
</tbody>
</table>

In the table 3, the diction *tidy* was chosen with the aim at stimulating students’ good behavior at home and school setting. Reinforcement of good diction is expected to shape students’ behavior. To add, the use of sign ‘No Littering’ is important to build students’ awareness in keeping their environment clean.

3. Developing Stage

Last stage was the developing. In this phase, the researchers modify and developed the prototype by referring to input given by the expert validators. The researchers re-checked, revised and re-added the items into good level. After revised the product, the researcher returned the English test items to the experts for getting an agreement to apply the test items in the class. Although some phases have been produced since the defining stage, the results must be compared to the initial version of the English test items to see the improvement made in the design process. This stage consisted of four activities to wit, pilot study, revising English test items, and the final draft.

a. Pilot Study

The seventh activity was pilot study. In this activity the researcher gave the developed English test items to students for piloting. Pilot study was done two times. On first piloting, the researchers applied the test items in the class and gave the test items to 19 students. Each student completed 35 test items. The result of first pilot was showed in table 4:

Table 4. Distribution of Item Validity on First Piloting

<table>
<thead>
<tr>
<th>Numbers of Items</th>
<th>35</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid Items</td>
<td>20</td>
</tr>
<tr>
<td>Invalid Items</td>
<td>15</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th></th>
<th>4, 5, 6, 7, 8, 11, 12, 13, 15, 16, 17, 20, 21, 22, 25, 28, 30, 31, 32, 34</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>1, 2, 3, 10, 11, 12, 14, 15, 16, 17, 18, 19, 20, 21, 24, 27, 28, 29, 31, 34, 35</td>
</tr>
<tr>
<td>14</td>
<td>4, 5, 6, 7, 8, 9, 13, 22, 23, 25, 26, 30, 32, 33</td>
</tr>
</tbody>
</table>

On second piloting, the researchers applied the test items in the class, similar to the step in the first piloting. The researchers gave the test items to 19 students where each student also completed 35 test items. Totally there were 70 test items that were done by the students. The result of second pilot was showed in table 5 below:

Table 5. Distribution of Item Validity on Second Piloting

<table>
<thead>
<tr>
<th>Numbers of Items</th>
<th>35</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid Items</td>
<td>21</td>
</tr>
<tr>
<td>Invalid Items</td>
<td>14</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th></th>
<th>1, 2, 3, 10, 11, 12, 14, 15, 16, 17, 18, 19, 20, 21, 24, 27, 28, 29, 31, 34, 35</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>4, 5, 6, 7, 8, 9, 13, 22, 23, 25, 26, 30, 32, 33</td>
</tr>
</tbody>
</table>

b. Test Analysis and Revising Test Items

The pilot study was followed by analysis of the items by using ANATES 4.0.9 to know the validity and reliability of test items. Based on result of validity by using ANATES 4.0.9, it was found that validity of first piloting showed that 20 items were valid and 15 items were invalid. In other words, the percentage of valid items reached 57.1%, and the invalid items were 42.9% of all 35 items. In the meantime, reliability of test was at very high category, with 0.87. After conducting the first piloting, the researcher revised some items into better material for being piloted in the second time. Based on the result of second pilot, it showed that 21 out of 35 items were valid and 14 items were invalid, with percentage of 60% and 40% respectively. In further analysis, the reliability test was at very high category, with 0.95. From the result above, test reliability has increased between first piloting and second piloting and test validity has increased from first piloting.

The last step of developing stage was revision. It was to ensure the readiness of test items for being validated by the experts. The revisions made were in term of diction and instructional language used in the revised English worksheets. When it was done, the researchers asked the expert validators to check
the materials. The experts stated that the test items developed have fulfilled criteria of Education Character. They also asserted that the test items suited the learning indicators of English syllabus used in the SMP IT Al-Birru Pekanbaru. It is therefore the final draft was ready to use for English testing materials at the SMP IT Al-Birru, Pekanbaru.

Pertaining to the findings above, developing learning materials is important to improve and vary the activities done by teachers (Syahdan & Lusandi, 2018). The student’s worksheets (LKS), solely, is a material for students containing project-based learning (Sari et al., 2021). To this point, project-based learning matches with characteristics of 21st century learning activities.

The developing materials used in this study, mostly, were in term of reading skills. Therefore, the findings are relevant with the findings of Syahrin et al., (2021) that embedding character values on could be internalized. In reading activities, such as measuring the message of a reading passage, it is important to highlight the use questions containing higher order thinking skills ‘HOTS’ (Syahdan & Sastra, 2014). To this end, the use of HOTS should be emphasized in order to shape the skill of critical thinking as demanded in the 21st century learning.

D. CONCLUSION AND SUGGESTION

From the findings, the researchers conclude that there are three development steps carried out namely Define, Design and Development involving two experts providing an assessment of the development steps taken so that the questions developed are in accordance with character education and are reliable for use in SMP IT Al-Birru Pekanbaru.

Though the government is conducting a try out on the new curriculum ‘Prototype’, the essence of character education is and will be relevant for today and future’s discussion. Therefore, the researchers would like to suggest the next researchers who conduct R&D to embed values of the social-emotional, regardless of the curriculum renewal, to maintain students’ good character. However, other research designs on this issue will, still, open to enrich the insights of Character Education.

ACKNOWLEDGEMENT

The researchers would like to address gratitude to parties in SMP IT Al-Birru, Pekanbaru, for giving chance to conduct this study. Also, a sincere gratitude was addressed to both expert validators for providing their valuable times in giving critics and feedbacks toward the test items developed in this study.

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