Developing Transdisciplinary-based Material Design for Akidah Akhlak Learning

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Abstract

Transdisciplinary-based learning (TDBL) is a need of teachers in teaching where its existence offers for solutions to solve teaching and learning problems in class. In this case, the presence of TDBL in Aqidah Akhlak subject means integrating Islamic teaching into science as knowledge in a holistic way. Thus, this study aims to propose a new way of teaching by developing the learning materials for the Aqidah Akhlak subject which is integrated into TDBL. Plomp’s model of research and development design is used in this research which typically includes five stages including problem analysis, design, realization, implementation, and evaluation. The result from expert validation both for student and teacher books is considered in the eligible category, highly eligible for field trial assessment, and practical category for the practical assessment. Students’ performance on Aqidah Akhlak subject is dominated by moderate level rather than high one. T-test proved that the use of TDBL Aqidah Akhlak learning materials effective to be utilized in class. Through the result of the study, it can be concluded that the proposed product of TDBL Aqidah Akhlak learning materials can be used both for students and teachers. Discussion and research implications are discussed further in this study.

Keyword: Aqidah Akhlak learning, research and development, secondary level context, Transdisciplinary-based material design
A. Introduction

Aqidah Akhlak is part of Islamic Religious learning which aim is to introduce, comprehend, and keep a belief, and learn how to build relations to God (Habluuminallah) and to humans (Habluuminannas) (Zainuddin, 2019). Students are expected to build noble characters and high moral awareness in relation to their personalities and social lives (Majid & Andayani, 2004). Particularly in Islamic Junior High Schools or so-called Madrasah Tsanawiyah (MTs) in Medan, Indonesia, showed a specific phenomenon that the researchers found based on preliminary research where the learning process done by teachers of Aqidah Akhlak referred to the use of old paradigm i.e., knowledge is transferred to passive students. The Grammar Translation Method was used repeatedly to have the students take notes and memorize the materials without building the reasoning skill of students which caused the low willingness to take the subject. Moreover, the learning activities of Aqidah Akhlak at MTs level in Medan need to be developed, especially towards the everyday use of a regular handbook with rare innovations in the learning design. Therefore, this research is intended to answer the challenges faced by teachers and students by offering the development of Aqidah Akhlak learning materials.

Moreover, previous researchers’ attention towards the development of Aqidah Akhlak material and learning design in different levels is considered very limited, especially to the level of high school and junior high school. In elementary levels, varied models of Aqidah Akhlak learning materials had been done e.g., the development of attractive Aqidah morals comics (Fahyuni & Fauji, 2017), the creation of Aqidah Akhlak book to increase students’ comprehension (Zainuddin, 2019), the development of learning materials of Aqidah Akhlak subject by using kids magazines (Alimaturaiyah & Wahab, 2019), and the development of learning materials of Aqidah Akhlak subject by using kids magazines (Almuhtadin, 2022). At Junior High School level, the design of instructional resources in the form of lesson plans based on local wisdom what so-called by Berinjam material done by Asfahani (2019) in the case of Islamic Junior High School in Ponorogo, Indonesia. In High school level, Irfan et al. (2021) tried to develop and measure the effectiveness of a multiliterate learning model on Aqidah Akhlak subject at the Islamic High School level where the result from learning design experts and material experts obtained “good” predicate.

Furthermore, to refute the problems noticed previously, the existence of transdisciplinary-based learning (TDBL) where the teaching of Islamic concept is integrated to science as a knowledge. This strategy was developed to address basic societal problems that cannot be effectively resolved by standard academic approaches and discourse alone (Geres-Smith, 2020). By incorporating transdisciplinary-based learning model to teaching process, it contributes to the improvement of students’ soft skills (Kamrozzaman et al., 2019) as well as beneficial for society (Nair & Suryan, 2020). TDBL exists to answer the education needs of today e.g., to fulfill the needs of appropriate handbooks for students and community-based learning for social studies teachers in many schools context (Mangkhang, 2021). The requirements coincide with a quickly changing,
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uncertain global society and a discipline that is perpetually influenced by any other subject (Baskara et al., 2018).

Transdisciplinary is intended to eliminate disciplinary barriers in order to see the entirety of a problem or to address it comprehensively (Nicolescu, 2010) and change the paradigm that general science and Islamic knowledge should be separated (Mawardi, 2016). It is supposed that the transdisciplinary model has the greatest capacity to shape the character of pupils since it incorporates multiple scientific fields to foster a holistic knowledge (Sunaengsih, 2015). This strong new approach recommends that teachers find and work on conceptual problems, then go beyond the narrow limits of their own fields to understand complex events (Giacosa, 2020). Giacosa (2020) added that this is the guideline that teachers and students of today’s schools should start moving in so that they can encounter tomorrow with more knowledge and skill. Therefore, transdisciplinary-based learning (TDBL) appears to be the appropriate model to be integrated in Aqidah Akhlak which typically contains how to build decent characters of students.

However, there have only been a few of studies that evaluate the application of transdisciplinary inquiry as a learning and research technique. The majority of previous studies pertain to use common methods and tools in developing learning materials of Aqidah Akhlak. Other than that, limited studies managed efforts on developing learning material of Aqidah Akhlak for secondary level. Meanwhile, barriers in teaching Aqidah Akhlak are not limited happened merely in elementary level. Specifically, TDBL which integrates to Islamic study has been studied by some previous researchers e.g., Putra (2019) and Razaq et al. (2020), but not yet highlighted specific area of Islamic teaching and learning such as Aqidah Akhlak. Thus, this research intends to fill the gap by proposing the development of Aqidah Akhlak learning materials which are integrated to TDBL. The design product of TDBL is arranged in a systematic manner that allows students to have decent learning experiences, therefore, it is expected that students are able to reach intended learning goals.

B. Literature Review

The idea of transdisciplinary-based learning in Aqidah Akhlak learning is the point of integration between general knowledge and Islamic teaching. The underlying keyword is integration to improve students’ potentials. In this case, Helmane & Briška (2019) argued that learning motivation of students comes from an integrated learning process that creates a whole that each student can see based on his or her own skills. Therefore, what a teacher does is important because it creates the conditions for a student to see the whole picture of what he or she is learning, not because the teacher points out the connection. The transdisciplinary becomes the “tool” that makes it possible to align the goals and tasks of society’s development in many contexts including education (Davidova et al., 2016).

The aim of transdisciplinary as a whole is to comprehend numerous happenings in the real world, which is difficult to comprehend within a disciplinary framework (Nicolescu, 2010). It is involved the use of concepts, methods, and concerns that transcend traditional academic boundaries in order to address complicated problem (Robinson, 2008). Concept
of TDBL according to Harahap et al. (2019) is divided into two big ideas. The first basic concept of transdisciplinary is that it integrates and converts fields of knowledge from differing viewpoints to comprehend, describe, and address difficult problems. Secondly, transdisciplinary is incorporating and transforming fields of study from multiple perspectives to improve the quality of problem solving.

Seaton (2002) mentioned seven characteristics of TDBL which include accent on exit results (prospering in the real-world), active learning for mental excellent (constructivism), personal accountability for one’s own learning and conduct, individual significance, real-world functions, roles, and setting (integrated curriculum, connections with the community for mutual capacity (productive partnership in a learning community), and extension of instructional repertoires (teachers’ transitioning from “sage on the stage” to “side guide”). From those seven characteristics, Seaton (2002) then later proposed six key abilities as a must have abilities by students including multiliteracies, problem solving, creativity, community participation, self-management, and self as well as social knowledge.

Having a slightly different with Seaton (2002), Lawrence et al. (2022) also pointed out seven characteristics of TDBL including (1) an emphasis on the theoretical of knowledge in an endeavor to transcend disciplinary borders, (2) the incorporation of transdisciplinary and interdisciplinary academic research, (3) the inclusion of social actors as process participants, (4) a concentration on unique, complicated, social significant, real-world issues, (5) working in a transformative manner, i.e., going beyond the focus on real-world problems to proactively support action, (6) a preference toward the common purpose, including the improvement of society and a holistic devotion for life and human dignity, and (7) reflexivity, i.e., consciously considering the wider context and assure the connectivity of the program’s elements and tasks throughout a project’s duration.

To develop TDBL, it is not merely about deliberating the basic concept as well as characteristics of it. There should be a guidance on how teachers can design learning materials into the correct corridors. In this case, Derry & Fischer (2005a, 2005b) suggested four questions to guide the development of TDBL i.e., “What should students learn?”, “How should students learn?”, “How should we design new sociotechnical environment for advanced learning?”, and “What are the fundamental roles for communities in graduate education?” after noticing the guidance, teachers can start to follow five steps in holding TDBL which include acquiring knowledge that is pertinent and of global importance, developing a knowledge of the topic and enabling students to draw connections throughout their education, acquiring inter and intradisciplinary expertise, developing a positive attitude that will lead to a global perspective, and taking action as a result of their learning (International Baccalaurette Organization, 2005). These concepts can be transformed in Aqidah Akhlak learning materials in order to follow the principles of balanced life between spiritual and material, permanent and flexibility, faith and human logic, ethical and morality, and individual and social rights (Yaqin, 2021).
C. Research Methodology

Since the objective of the current study is to develop learning material of Aqidah Akhlak subject in one of secondary schools in Medan, Indonesia, then the design of research and development model proposed by Plomp (1997). Particularly, five stages are used in Plomp’s model which consist of (1) investigation; assessing the problem or analyzing the needs, such as gathering and examining information, identifying the problem, and monitoring the project, constitutes the initial inquiry step, (2) design; designing problem-solving in the model’s design based on the outcomes of working plans or written plans that will be implemented in the realization step, (3) realization; producing activities, e.g., the creation of textbooks, learning and instructional materials, and service models for training or workshop, (4) evaluation, revision, and testing; systematically gathering, processing, and analyzing obtained information allows or the completion of these three phases. It is performed in order to achieve the outcomes of problem solving. He constructed model is evaluated in order to collect the necessary data for evaluation, and the resulting data serve as feedback for model revision, and (5) implementation; upon completion of step four, the model is implemented for users in this stage. Brief stages are pointed out in figure 1.

![Figure 1. Generic model for educational design proposed by Plomp (1997)](image)

Specifically, before applying overall process suggested by Plomp (1997), we proposed and employed three stages in the learning material design of TDBL Aqidah Akhlak as showed on figure 2.
From the learning material design of TDBL Aqidah Akhlak above, it produces products in the form of printed teaching materials in the form of teacher and student books. The teacher's book is designed with the intention that teachers have a handbook or manual in delivering subject matter in class. This teacher's book provides an explanation of the use of teacher books, graduate competency standards, core competencies, basic competencies, indicators of competency achievement and learning objectives, models, strategies and learning methods, instructional instructions, learning activities, techniques and assessment formats. The structures contained in the teacher's book design include preface, table of contents, about teacher books, use of teacher's books, graduate competency standards, core competencies, basic competencies, competency achievement indicators, learning objectives, learning models, strategies, methods, learning instructions, learning activities, assessment techniques and formats and reading list.

The student book is designed to help students have a handbook that students can use in the learning process. In other words, the student book contains learning materials that students can learn as a source of learning. The design of the student book contains student assignments or activities that aim to encourage the enthusiasm of students to learn, especially in finding and obtaining important information related to teaching materials. The structures contained in the student book design includes introduction, about student books, table of contents, teaching materials and reading list.

Seventy-five students are tested in Aqidah Akhlak subject after the assessment stages from two experts for assessing the eligibility of teacher’s and student’s books in two fields, i.e., learning design and learning material. Additionally, two educational practitioners also invited to evaluate the books produced from TDBL Aqidah Akhlak learning materials. The result from students’ test of Aqidah Akhlak subject towards the use
of TDBL Aqidah Akhlak learning material was analyzed by using paired sample t-test formula existed in SPSS app.

D. Findings and Discussions
1. Testing of TDBL Aqidah Akhlak Learning Materials
After the production stage, four types of evaluative assessment were conducted including eligibility assessment both for teacher and student book, field trial assessment, and practical assessment. In this case, table 1 showed the result of the feasibility assessment of teacher book, and table 2 for student book:

Table 1. Eligibility Assessment for Teacher Book

<table>
<thead>
<tr>
<th>Experts</th>
<th>Score</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning design experts</td>
<td>3.53</td>
<td>Highly eligible</td>
</tr>
<tr>
<td>Material experts</td>
<td>3.43</td>
<td>Eligible</td>
</tr>
<tr>
<td>Education practitioners</td>
<td>3.47</td>
<td>Eligible</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>3.48</strong></td>
<td><strong>Eligible</strong></td>
</tr>
</tbody>
</table>

Table 2. Eligibility Assessment for Student Book

<table>
<thead>
<tr>
<th>Experts</th>
<th>Score</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning design experts</td>
<td>3.40</td>
<td>Eligible</td>
</tr>
<tr>
<td>Material experts</td>
<td>3.46</td>
<td>Eligible</td>
</tr>
<tr>
<td>Education practitioners</td>
<td>3.50</td>
<td>Highly eligible</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>3.45</strong></td>
<td><strong>Eligible</strong></td>
</tr>
</tbody>
</table>

Success with the eligibility assessment from experts, field trial of using the learning material book were employed to students in the form of individual small, and field group as highlighted on table 3. Later on, practical assessment was also done based on both teachers' and students' perspectives towards the development of TDBL in Aqidah Akhlak subject which is showed in table 4.

Table 3. Field Trial Assessment

<table>
<thead>
<tr>
<th>Group</th>
<th>Score</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual</td>
<td>0.83</td>
<td>Highly eligible</td>
</tr>
<tr>
<td>Small group</td>
<td>0.81</td>
<td>Highly eligible</td>
</tr>
<tr>
<td>Field group</td>
<td>0.87</td>
<td>Highly eligible</td>
</tr>
<tr>
<td><strong>Cumulative average score</strong></td>
<td><strong>0.84</strong></td>
<td><strong>Highly eligible</strong></td>
</tr>
</tbody>
</table>

The results of the field trial score above indicated that the TDBL Aqidah Akhlak design reached the proper category. This means that the product developed reflects the
level of feasibility for use. The availability of learning tools from the perspective of students can be seen from two aspects, i.e., the TDBL Aqidah Akhlak design expanded students' access to learning resources as well as encouraging personalization of student learning that refers to mastery of competencies that integrates Islamic concept and science.

<table>
<thead>
<tr>
<th>Practical assessment aspects</th>
<th>Score</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher's perspective</td>
<td>3.31</td>
<td>Practical</td>
</tr>
<tr>
<td>Students' perspective</td>
<td>3.17</td>
<td>Practical</td>
</tr>
</tbody>
</table>

2. Mastery Level of Students towards the Use of TDBL Aqidah Akhlak Design

Following the evaluation result from the testing of TDBL Aqidah Akhlak learning materials, students’ mastery level towards Aqidah Akhlak subject was measured and revealed on figure 3.

![Students' Mastery Level](image)

Figure 3. Students’ Mastery Level towards the Use of TDBL Aqidah Akhlak Design

3. The Effect of the Use of TDBL Aqidah Akhlak Learning Materials

The use of TDBL Aqidah Akhlak learning materials design effects to students’ learning outcomes where the level of effectiveness was tested by t-test computation ($t$-count = 4.26 > $t$-table = 1.99) with normalized gain ($N$-Gain = 0.38) with medium category and 77% of classical students’ mastery towards the TDBL Aqidah Akhlak design used. It indicated that the use of TDBL Aqidah Akhlak learning materials contributed to high level of effectiveness for use in Aqidah Akhlak subject in class.

In terms of the average proportion of the most used time in learning activities was the students did assignments or tests independently and in groups. This means that during learning activities for each meeting, independent and group work on assignments and tests dominate students’ activity. This finding designated that the TDBL Aqidah Akhlak learning materials were proven to drive students to be more active and interested in
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learning Akidah Akhlak subject. Thus, the problem of student interest can be solved as it is obvious that the subject of this research and also previous studies have faced similar problem (Almuhtadin, 2022; Fahyuni & Fauji, 2017). This finding is in line with Nicolescu (2010), Robinson (2008) and Sunaengsih (2015) and Putra (20119) that TDBL is proved to solve learning problems in classes by paying attention to the holistic aspects in class. This fact is also supported by Gürkan (2021) who argued that integrated curriculum emphasizes a student-centered instructional strategy. The learning process is guided by the students' interests, skills, and inquiries so that they are motivated to look at the bigger picture in this world.

In other words, the problem faced in Aqidah Akhlak class from student side is solved by the present of TDBL Aqidah Akhlak learning materials. Additionally, in the matter of teachers' activity when using the TDBL Aqidah Akhlak learning materials, organizing students in active learning activity was more dominant in class rather than other kinds of activities. It showed the support from teachers to manage students in various activities and changing the habit from passive learning into the active one. This finding signified that the teachers of Aqidah Akhlak have played their role in teaching to certain the communicative learning in class. As supported by Park & Son (2010) that in TDBL, the teacher's role is to maintain the interactive communication in class during the subject. Educator facilitate effective learning when they engage pupils in their own learning (Sholekha, 2021). This research result brings a novelty that teachers of Aqidah Akhlak are able to use the new formulation of TDBL Aqidah Akhlak learning materials in the future and in long term.

However, this research also comes with some limitations which the future researchers can notice for the better research knowledge advancement. Firstly, the number of students who were tested for measuring whether the TDBL Aqidah Akhlak learning materials were still limited. Therefore, the next researcher can enhance the number of students to make the result better. Secondly, even though the result from the use of teacher's book showed changing into student-oriented activities, more activities which can support the improvement of teacher's skills in teaching is highly needed. Lastly, since the mastery level of more than a half of the students towards the use of TDBL Aqidah Akhlak learning materials still reach moderate level, it is highly suggested for the next researchers to modify or create the more innovative learning materials for Aqidah Akhlak subject.

E. Conclusion and Suggestions

The result of this research has reached five conclusions, i.e., (1) the result from teacher and student books of TDBL Aqidah Akhlak learning materials assessment are eligible and highly eligible for field trial assessment, (2) the TDBL Aqidah Akhlak learning materials considered practical both from students and teachers' perspectives, (3) more than a half of the students still reach moderate mastery level towards the use of TDBL Aqidah Akhlak learning materials, (4) the TDBL Aqidah Akhlak learning materials have improved to be effective in enhancing students' learning outcomes, and (5) by the use of TDBL Aqidah Akhlak learning materials, students are more active in class and teachers' teaching style.
becomes more student-oriented. Due to some points which are yet maximize conducted in this study, several suggestions are addressed to further researchers and formal institutions. For the next future researchers, the product of TDBL Aqidah Akhlak learning materials might be developed more probably on the topics which can integrated to Aqidah Akhlak subject, also on the activities offered for students. Nevertheless, through the results of the research, the product of TDBL Aqidah Akhlak learning materials certainly can be used for teachers in class. However, teachers are in needs of getting trainings to improve their capability in teaching, so that leaders in a management of formal institutions might take this role for the success of teaching and learning process of Aqidah Akhlak in class.

**BIBLIOGRAPHY**


Geres-Smith, R. (2020). *Transdisciplinary inquiry: Exploring a New Approach to Professional Learning in Education* [University of Victoria]. https://ciret-
Developing Transdisciplinary-based Material Design for Akidah Akhlak Learning

geres-smith-rhonda-phd-2020.pdf


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