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Exploring The Contribution of Mind Mapping-Based Constructivist Strategy on Fiqh Learning Outcomes

Ridwan*
Universitas Islam Negeri Walisongo Semarang, Indonesia

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ABSTRACT

Improving jurisprudence learning outcomes requires empirically tested learning strategies following the characteristics of the material and learning. This study aims to examine (1) the effect of constructivist-based mind-mapping learning strategies on cognitive learning outcomes of *Fiqh* subjects with *intelligence control (intelligence) and (2) the influence* of constructivist-based mind mapping learning strategies on cognitive learning outcomes of jurisprudence subjects with control of learning motivation. This research uses an experimental design carried out at MAN 1 Semarang City. Data were collected using tests (learning outcomes), questionnaires (learning motivation), and documentation (intelligence). Next, the collected data were analyzed using simple Variance Analysis (Anava) and Covariance Analysis (ANAKOVA) techniques. The results of data analysis found that constructivist-based mind-mapping learning strategies significantly influenced students' *Fiqh* learning outcomes after controlling their intelligence/intelligence and learning motivation. This shows that if the level of intelligence is the same, the Fiqh learning outcomes achieved by students who *follow constructivist-based mind-mapping* learning strategies are higher than those achieved by those who follow conventional learning strategies. Likewise, if motivation levels are the same, the jurisprudence learning outcomes of students who follow *constructivist-based* mind-mapping learning strategies are higher.

KEYWORDS
Mind Mapping, Constructivistic, Fiqh Learning.

***Corresponding author**: Ridwan ✉(ridwan@walisongo.ac.id). Universitas Islam Negeri Walisongo Semarang, Indonesia.

Introduction

Jurisprudence learning has not found an ideal learning model to help students understand fiqh more effectively (UAMBN MA Semarang City, 2020). Jurisprudence learning is still focused on the verbalistic and teacher-centered learning model. Verbalistic and teacher-centered learning results in less effective and less dynamic learning (Jacobsen et al., 2009). Jurisprudence learning that is concrete and emphasizes student activeness needs to be applied.

Literature facts illustrate that development studies on learning methodologies on jurisprudence material are still limited. As a result, the study of concepts in jurisprudence learning is still focused on a teacher-centered, verbalistic approach, pays less attention to concrete learning, and emphasizes student activeness in learning. In contrast, in the constructivist-based mind mapping model, developing a concrete/visual jurisprudence learning methodology in images that emphasize the importance of creativity must get attention.

This paper aims to complement existing studies by examining specifically (focus) the model of jurisprudence learning through constructivist-based mind mapping models. The constructivist-based mind mapping model is a pictorial thinking tool that uses words, images, symbols, diagrams, and other forms of representation that combine the potential of the right brain and left brain (Liu, Tong, and Yang, 2018). Using such visualization helps students gain ease in thinking, connecting words and readings, improving the ability to organize and understand material, and adding new insights. On this basis, the use of *the mind mapping* model in learning aims to improve creative and critical thinking skills in students (Wulandari et al., 2019; R. Siregar et al., 2020)

This paper is based on an argument that a good learning process will affect student results and creativity in learning. The belief in changes in learning outcomes and creativity shows the importance of a learning process that can help students improve their competence. In line with that, this paper aims to develop the quality of learning caused by the low understanding of jurisprudence and student creativity and analyze the effectiveness of constructivist-based *mind mapping* model design to improve students' understanding of jurisprudence concepts and creativity. The results of learning constructs through model design and analysis of its application provide a deeper understanding of how jurisprudence learning design can increase Shiva's understanding of concepts and creativity in jurisprudence learning.

Literature Review

Model Mind Mapping

Mind mapping is a learning model initiated by Tony Buzan, a well-known psychologist from England, in the 1960s (Liu et al., 2018). This model is one of the

learning models that use graphical methods in mapping and associating new concepts from previous learning stages (Astriani et al., 2020; Polat & Aydın, 2020). This model is also known as a pictorial thinking tool that uses words, images, symbols, diagrams, and other forms of representation that combine the potential of the right brain and left brain (Liu, Tong, and Yang 2018). Using such visualization helps students gain ease in thinking, connecting words and readings, improving the ability to organize and understand material, and adding new insights (Rosliana, 2019). In addition, the representation of thought processes in mind-mapping models can motivate students to form their mind maps (Yeong, 2013). Based on the use of mind-mapping models in learning aims to improve creative and critical thinking skills in students (Wulandari et al., 2019; R. Siregar et al., 2020; Wulandari et al., 2019; Rusmia Sari & Handoyo, 2022).

Preparing a mind map begins with reading various sources by students and then continues with formulating main concepts and sub-sub-concepts (Astriani et al., 2020). In more detail, the ways to make mind mapping are formulated by Saori (2020) into the following steps namely: 1) Place the topic or image in the center by utilizing at least three different colors; 2) utilize images, symbols, codes, and other graphical aspects throughout the mind map; 3) select keywords that are then written using upper or lower case letters; 4) connect the lines starting from the image in the middle; 5) Use a variety of colors throughout the mind map; 6) develop a personal mind mapping style; 7) emphasize and point out associations within the mind map; and 7) clarity of mind maps needs to be maintained through the use of radial hierarchies, numerical sequences, or outlines in embracing the branches of mind maps. The mind map that has been made can be implemented at an individual level where students can use it in recording learning materials at school (Annisa, Subali, and Heryanto 2018), as well as beneficial in group learning and cross-disciplinary groups (Zahedi & Heaton, 2016). Thus, mind-mapping models in learning can help improve student learning outcomes (Omolara Blessing, 2015; Zheng et al., 2020; Wulandari et al., 2019).

Constructivist Learning

In education, constructivism is a theory of learning that emphasizes active learning in constructing knowledge that is owned independently through social interaction and the help of others (Mattos et al. 2020; Imiere 2021; Hussain 2012). Referring to such a definition, this theory places learning as a constructive process in which students build internal images or illustrations of knowledge by interpreting their experiences (Sugrah, 2020). Based on this, learning with a constructivist approach gives birth to various learning models with similarities, where students are always positioned as active actors in the teaching and learning process (Abdiyah & Subiyantoro, 2021). The learning styles and materials are also adjusted to students' interests to make the teaching and learning process more manageable, natural, and fun (Dagar & Yadav, 2016). Learning models with a student-oriented constructivist

approach are known to have higher effectiveness than traditional learning models in improving student academic outcomes (Dagar & Yadav, 2016; Kumar Shah, 2019; Sridevi, 2013).

Not only student-oriented but learning with constructivist principles also explains the relationship between students and teachers, which is not seen as two separate sides but as a solid team (Mayombe, 2020). Teachers act as educators and facilitators in encouraging students to be active in their activities and involved in group work activities (Mayombe, 2020). In principle, constructivist-based education does focus on collective work, which is considered much more effective than previous approaches that tend to be passive, with the learning process only transmitted by the teacher or one direction (Bell, 2020). Constructivist learning that trains students to be independent can improve experimentation and problem-solving skills (Hatzigianni et al., 2021). In addition, several studies in this area also note that learning that refers to a constructivist approach opens up opportunities for students to think creatively and critically (Mohammed et al., 2020; Sasson et al., 2018; Liu et al., 2018). Thus, the mind-mapping learning model is one of the models relevant to this approach, where the mind-mapping model emphasizes the full contribution of students and aspects of critical and creative thinking (Su, Shao, and Zhao 2022).

Fiqh Learning

Learning is an effort to facilitate interaction, teaching, and learning activities between teachers as educators and students as educated parties (Hanafy, 2014; Mokodenseho & Wekke, 2017). Learning has intentional and controlled goals to fulfill learning outcomes and educate (Herliani, Boleng, and Maasawet 2021). In education, learning activities involve students and teachers and other important components such as curriculum, learning objectives, learning methods, and evaluation (H. S. Siregar, Mohd Nor, and Hajrullah 2020). The same is also found in Islamic learning, where all learning components are based on Islamic values (Suyadi et al., 2019). One of the lessons in Islamic education is fiqh learning, which contains a set of rules for human relations with Allah SWT, humans with other humans, and humans with other creatures (Fauzan & Zuhri, 2017). On this basis, fiqh learning in the context of this paper is interpreted as a school subject that focuses on teaching spiritual values in worship and social life (Kalsum, Suryana, and Nopitasari 2020).

As one of the learning domains, fiqh acts as an introductory lesson taught to be a reference for students in assessing what is wrong and right (Wahid, A. Hamid 2021). Fiqh learning also encourages students to understand learning materials while motivating students to develop intellectual intelligence based on faith and piety (Wahid, A. Hamid 2021). As one form of learning, fiqh learning has various models whose application focuses on improving the quality of teaching and learning such as the ADDIE-based fiqh learning model (Qori Amarullah & Fatmah Wahidah, 2021), a soft

skill dimension model (S. Arifin, 2019), a problem-based learning model (Anam and Ahmad Amiq Fahman 2020), a model with media utilization (M. B. U. B. Arifin et al., 2019; Sodikin &; Ashom, 2021), to models that involve student contributions as active actors in learning (Hakim &; Luthfiah, 2020; Kusuma Wardani, 2021; Lilawati &; Rohmah, 2019). Sapiudin (2014) said that applying the fiqh learning model is successful if it can trigger students to think constructively and contextually. Participatory methods are also important in applying the fiqh learning model (Sapiudin, 2014). Thus, the mind mapping model that actively involves students is one of the constructive models that can be used in fiqh learning.

Method

This study analyzes the application of constructivist-based mind mapping models in Madrasah Aliyah Negeri 1 Semarang City. This type of research is quantitative with an experimental approach to prove the influence of constructivist-based mind mapping learning in student fiqh learning outcomes. Data sources were explored through observations of implementing fiqh learning, tests of jurisprudence learning outcomes, and questionnaires on student motivation through constructivist-based mind mapping models in Jurisprudence subjects at Madrasah Aliyah Negeri 1 Semarang City.

This research uses an experimental design carried out at MAN 1 Semarang City. The study sample consisted of 30 11th graders randomly selected and grouped into two classes, experimental and control. Data were collected using tests (learning outcomes), questionnaires (learning motivation), and documentation (intelligence). Next, the collected data were analyzed using simple Variance Analysis (Anava) and Covariance Analysis (ANAKOVA) techniques.

Results

Understanding the concept of jurisprudence in learning is primarily determined by the standards of the learning process applied. This means that the Process Standards in jurisprudence learning significantly improve learning outcomes. A reasonable and appropriate learning process will also affect the quality and good learning outcomes. The constructivist-based mind mapping model is one of the right learning models for embedding concepts in the jurisprudence learning process. *Mind mapping* is considered appropriate because it is a storage method that organizes and prioritizes information poured into paper using keywords or trigger words and images so that it can cause special memories and new thoughts and ideas. The following are presented some tables of jurisprudence learning outcomes using constructivist-based mind mapping models:

Tabel 1. The results of the analysis of covariance of learning outcomes after adjusting the level of intelligence/intelligence

Source	Sum of Squares (JK)	Degrees of Freedom (sec)	Rerata Kuadrat (RK)	F	$F_{(0,10;\ 1;\ 27)}$	Conclusion
Guess	102,742	1	102,742	4,151	2,901	Significant
Deep	668,213	27	24,749			
Adjustable total	770,955	28				

Tabel 2. Anova Results Learning motivation by category of learning strategies

Source	Number of Kwadrat (JK)	Degrees of freedom (dk)	Rerata Square (RK)	F	$F_{(0,10;\ 1;\ 28)}$	Conclusion
Guess	700,833	1	700,833	4,582	2,894	Significant
Deep	4282,533	28	152,948			

Tabel 3. The results of the analysis of covariance of learning outcomes after adjusting the level of learning motivation

Source	Sum of Squares (JK)	Degrees of Freedom (sec)	Rerata Kuadrat (RK)	F	$F_{(0,10;\ 1;\ 27)}$	Conclusion
Guess	84,72	1	84,72	3,289	2,901	Significant
Deep	695,433	27	25,757			
Total Customized	780,153	28				
Total corrected	785,467	29				

The above data shows that (1) Learning strategies significantly influence the Fiqh learning outcomes of MAN students if their intelligence level is controlled. This is because covariance analysis yields values F = 4.151 > 2.901 = $F_{([,10;\ 1;\ 27])}$. In other words, if the level of intelligence is controlled (both groups have the same level of intelligence), the learning outcomes of students who learn in classes with *mind-mapping* learning strategies are significantly higher than those who learn in classes

with conventional learning strategies. With the same level of intelligence, students who learn in learning using *mind-mapping* strategies will be more successful, achieving higher learning outcomes than those who learn in learning using conventional strategies.

The results of the covariance analysis of learning outcomes after adjusting the level of student intelligence showed that the contribution of the influence was 102.742: 770.955 = 0.13 (13%). (2) *Mind-mapping learning strategies significantly influence* jurisprudence learning outcomes if controlled with motivation. This is supported by the results of covariance analysis, which shows the value of F = 3.289 > 2.901 = $F_{([,10;\ 1;\ 27]}$). Thus, if student learning motivation is controlled (both groups have learning motivation with the same tendency), the learning outcomes of students who learn in classes with *mind-mapping* learning strategies are significantly higher than those who learn in classes with conventional learning strategies. Suppose students have the same level of learning motivation. In that case, students who learn to use *mind-mapping* strategies in the learning process will obtain higher cognitive learning outcomes than students who learn using conventional strategies. With these results, the hypothesis that states "*Mind mapping* learning strategies affect Fiqh learning outcomes if controlled with motivation" can be accepted. Therefore, we can conclude that if students' learning motivation is the same, *mind-mapping learning strategies* are more effective for teaching jurisprudence to MAN students than conventional strategies. Based on the results of the covariance analysis of learning outcomes after adjusting the level of learning motivation showed that the contribution of the influence was 84,720: 780.153 = 0.108 (11%).

Jurisprudence learning by collaborating thinking processes and creativity

Mind mapping is a strategy combining the workings of the right brain with the left brain to maximize students' thinking ability. With this method, students will find it easier to retain information and remember it when needed. With the graphic techniques in it, *mind mapping* is the right strategy to train the brain to think in a structured and orderly manner. This is also supported by the existence of keywords that trigger a memorable impression of the brain to remember information.

Visualization of the difference between ordinary notes and learning notes through mind mapping, as written by Iwan Sugiarto (2004, p. 79), can be visualized as a metric;

Tabel 4. The Differences between the learning process in general compared to learning using constructivist-based mind-mapping learning models

No	Learning notes general	Mind Mapping Constructivism

1	Concepts are written only in the form of verbal text in the form of words	Concepts are expressed by students in the form of text, images/graphics, and certain symbols
2	Only written in one color	Image design involves a variety of colors
3	Takes a long time to review	Can be reviewed in a short time
4	It takes longer to learn	Can be learned more quickly and effectively
5	Learning is more teacher centered, passive students	Increase student creativity

Table 1 explains the general differences between the learning process and learning using constructivist-based mind-mapping learning models. Sources of learning concepts are generally in the form of verbal text, written in one color, and understanding them takes a long time. Meanwhile, through constructivist-based mind mapping learning, concept learning is expressed through text, multicolored images, graphics, and certain symbols, and it is designed collaboratively and constructivistically.

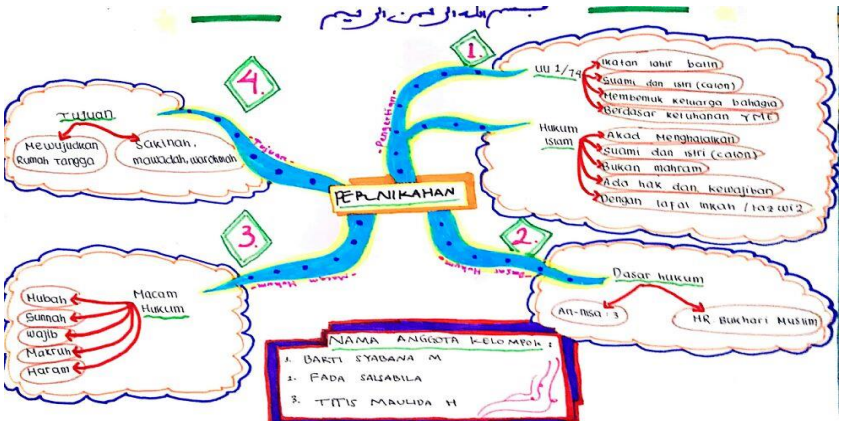

Figure 1. The results of students' mind mapping work on wedding material

Figure 2 shows the collaboration of students' thought processes and creativity. The students' thought process can be seen in how students compile the concept of marriage jurisprudence along with the subsections it discusses. The relationship pattern of the concept of marriage starts from the central thought, then drawn into subsections by being connected through lines, which is a form of how students arrange the flow of relationships in reasoning that the concept of marriage jurisprudence is interrelated. The process of understanding visualized through this image adds to the increased understanding of Shiva because the concept is presented in concrete form

(image) and more straightforward. On the creativity side, students can be seen through the images presented through the freedom to pour imagination with varied images and add a variety of colors and symbols that help memory. Based on the explanation above, it can be understood that mind-mapping learning in jurisprudence learning helps students develop students minds and creativity.

The constructivist learning model emphasizes student activity

Based on observations on the jurisprudence learning process, it shows that constructivist-based mind mapping can encourage student activity. This can be seen in three main things. *First,* in group student activities pour notes from verbal concepts (text) into pictures / graphics together. Constructivistic learning requires students to be able to discover their experiences through constructing knowledge. *Second*; on activities on how students make presentations and discussions together to find and discover concepts with their peers, *Third*; constructivist-based mind mapping is able to develop motivation for students creatively to bring up an attitude of independence and express ideas / ideas.

Discussions

Learning fiqh is easy to understand through picture maps

Learning jurisprudence through image maps (*mind mapping*) makes it easier to understand concepts. The ease can be seen from two aspects. First, jurisprudence learning with image/graphic design, so as to produce concrete learning. Kongret learning design is easier than learning delivered through abstract concepts that were originally written in the form of verbal writing (Haryoko, 2010; Noviyanti, Christanti, and Serina 2020; Ghoni, Rouyani, and Putri 2021) second, Learning the concept of fiqh which is outlined in the form of pictures by positioning the subject matter in the middle and then connected with the surrounding sub-subjects makes the concept of fiqh learning more integrated. The jurisprudence learning model is designed through an integrated image map, making the acceptance of fiqh learning easier so that learning outcomes increase.

The mind mapping model makes learning easier because this mind mapping model is able to encourage students to have more motivation in learning. The growth of student motivation because learning with visual models is more preferred by students than learning models that are delivered verbally. Furthermore, the mind mapping model offers learning concepts as a whole and integrated through core sentences and subsections that are designed to be interrelated and related.

Jurisprudence learning by collaborating the thought process and creativity

Mind mapping is a model of how to re-record a concept. Learning concepts requires a high analytical way of thinking. The thought process can be seen how text in the form of verbal narratives is then converted into writing in the form of images that relate each other between concepts, but have the same meaning. While creativity, can be seen when students pour imagination in the form of pictures, in which there are colors, codes, numbers, connectors that require creativity.

The *mind mapping* model facilitates higher and creative thinking. Such a way of thinking will be able to effectively influence student learning outcomes and motivation. This can be seen how students in groups are able to express concepts and look enthusiastic in doing so. Thus, the mapping model in jurisprudence learning is appropriate and needs to be applied.

Constructivistic learning emphasizes student activity

Constructivism is a theory of learning that refers to the emphasis on active learning in constructing knowledge that is owned independently. The mind mapping model based on constructivistic learning theory emphasizes student activeness in constructing images / maps and the knowledge that must be possessed. Learning with a constructivistic approach gives birth to various learning models that all have similarities where students are always positioned as active actors in the teaching and learning process (Abdiyah and Subiyantoro 2021)

Constructivistic learning that trains students to be independent is considered capable of improving experimentation skills and problem-solving skills (Hatzigianni et al. 2021). In addition, several studies in this area also note that learning that refers to a constructivistic approach opens up opportunities for students to think creatively and critically (Mohammed et al., 2020; Sasson et al., 2018; Liu et al., 2018). Thus, the mind mapping learning model *is one of the relevant models with this approach where the* mind mapping model *emphasizes the full contribution of students and aspects of critical and creative thinking* (Su, Shao, and Zhao 2022).

Conclusion

Constructivist-based mind mapping can significantly improve student jurisprudence learning outcomes and creativity, compared to expository / conventional learning strategies. These results were more convincing after the study controlled for IQ and student motivation. The learning excellence obtained by the experimental class above can be understood first; There is a simplification pattern of verbalistic concepts in the form of narratives, into a simple and patterned graphic. Second, Constructivist-based mind mapping strategies are built using the creativity of images and schemes and features that are by the learning material, making it challenging for students to do fun active learning creativity.

Based on the findings, it can be understood that appropriate learning strategies (such as constructivist-based mind mapping in cognitive aspects of jurisprudence learning) will be able to improve higher learning outcomes compared to conventional (expository) strategies, even though both depart from the same average intelligence. This study has limited sample sizes studied, namely each grade of 15 students. The limited number of samples in this study makes it risky if generalizations are made to all students in MAN 1 Semarang City. In addition, the learning outcomes measured only include cognitive aspects. Therefore, future research needs to expand the experimental sample and measure the achievements of jurisprudence comprehensively.

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