

artikel man in india

by Nur Khasanah

Submission date: 13-Jul-2021 05:34AM (UTC+0700)

Submission ID: 1618885886

File name: 1508823800_Man_in_India.pdf (270.33K)

Word count: 3749

Character count: 21006

17

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/320878225>

13

Implementation of discovery learning model with integrated unity of sciences in the develop of critical thinking skills and personal religious beliefs (PRB) of students

Article in *Man in India* · January 2017

CITATION

1

READS

616

4 authors, including:



Mr. Sajidan
Universitas Sebelas Maret
149 PUBLICATIONS 413 CITATIONS

SEE PROFILE



Baskoro Adi Prayitno
Universitas Sebelas Maret
102 PUBLICATIONS 232 CITATIONS

SEE PROFILE

Some of the authors of this publication are also working on these related projects:



Development of Learning Model E-LC to Empower HOTS Student [View project](#)



Critical thinking of junior high school student [View project](#)

5 IMPLEMENTATION OF DISCOVERY LEARNING MODEL WITH INTEGRATED UNITY OF SCIENCES IN THE DEVELOP OF CRITICAL THINKING SKILLS AND PERSONAL RELIGIOUS BELIEFS (PRB) OF STUDENTS

Nur Khasanah¹, Sajidan², Sutarno³ and Baskoro Adi Prayitno⁴

This research aimed to describe the application of discovery learning models in developing critical thinking skills of Biology Education UIN Walisongo students in Basic Biology courses. One of the advantages of discovery learning model that is able to train students in using variety concepts, principles and skills they have learned to solve the problems found. With the implementation of discovery learning is integrated with Unity of Sciences, critical thinking skills and personal religious beliefs (PRB) can develop. Critical thinking skills observed in this study is the ability to identify, analyze, solve problems, think logically and make the right decisions and to conclusions. Personal religious beliefs (PRB) is observed student perspective to the belief Qur'an as the source of sciences.

Key words: discovery learning, critical thinking skills, personal religious beliefs (PRB)

1. INTRODUCTION

Personal Religious Beliefs (PRB) is a term used to refer to the views, opinions, attitudes, and knowledge is built by someone through interaction with the socio-cultural context in the history of life and interpreted as religious affiliations (Mansour, 2008). PRB is a social construction based on the experiences of one's life at the individual level (especially in religious experience). The religious beliefs come from a personal experience, a learning experience, and formal knowledge, including the departments of education and pedagogical knowledge (Richardson, 2003). The learning experience is more important than a religious belief. In addition, informal experience in everyday life can also affect even change the religious beliefs and knowledge (Mansour, 2011).

UIN Walisongo as university-based unity of science, then the class activities required to implement the unity of sciences in learning activities. Unity of Sciences (wahdat al 'ulum) is a form of integration of science and religion that has three strategies, namely the development of the humanization of Islamic sciences, spiritualize the modern sciences, and the revitalization of local wisdom (Muhyar, 2012). Scientific and religious importance to attitudes adopted by prospective teachers. The results showed that students' beliefs influence the way of studying science (Stolberg, 2007).

The division of the general science of religion and science is a human conclusion that identifies the science based on the object of study. But when we see that the

¹ UIN Walisongo Semarang Indonesia, E-mail: nurkhasanah@walisongo.ac.id

^{2,3,4} Doctoral of Science Education Program, Surakarta, Indonesia, E-mail: adjid@fkip.uns.ac.id, msutamo@staff.uns.ac.id, baskoro_ap@fkip.uns.ac.id

Qur'an and Hadith in fact does not distinguish between religious knowledge with general knowledge. The position of religious studies and general science depicted in the form of a tree, where the Al-Qur'an and Hadith is positioned as a result of experimentation and logical reasoning or become a source of knowledge (Amin, 2004; Arsyad, 2009).

The realization that the need to do integration between religious knowledge with general knowledge, including how to learning in the classroom is a necessity. The learning model is interesting for the implementation of the integration of science and religion is how concepts which can be understood and religious values form the basis for learning activities. Beliefs about the learning of the religion (Islam) is a *aqidah*. In the Islamic *aqidah* (faith in Allah SWT in total) is a way of life (world-view) for every Muslim to live a daily life, including learning in the classroom.

In Western countries, there are two thoughts that religion and science cannot exist together. That science and religion can coexist only if one of them is distorted (Mahner & Bunge, 1996). But scientists and researchers Muslims generally believe that the Islamic religion and science can coexist (Mansour, 2008). There is no separation of religion from science and vice versa. The belief in the absoluteness of the Qur'an has interesting implications for many Islamic scholars about how to teach, especially to engage with the idea that knowledge and religious belief one cannot be separated. In science learning can occur if the experience that builds within the framework of science and faith religious (Barbour, 2000).

Discovery learning is a series of learning activities that involve the whole ability of learners to search and investigate in a systematic, critical and logical so that students can find their own knowledge, attitudes and skills as a manifestation of behavior change (Hanafi, 2009). Learning by discovery models, children can learn to think and try to solve their own analysis of the problems encountered can then be applied in society (Rosyada, 2007).

Model Learning in the classroom discovery stages or procedures implemented in teaching and learning activities in general are as follows: Stimulation, problem statement, data collection, data processing, verification, generalization.

Critical thinking can be defined as deciding what to believe or do sanely and reflective. So critical thinking means making sensible consideration. Basically, critical thinking also means using criteria to take into consideration the quality of something, in this case scientific papers required for processing information toward a particular conclusion. Facione (2011) criteria that critical thinking skills include: interpretation, analysis, evaluation, inference, explanation and self-regulation.

This study investigates the implementation model of discovery learning with the integration of unity of sciences to develop critical thinking and PRB biology students UIN Walisongo. There are two main reasons, that drive to do research. First, many studies on the perception of an influential religious beliefs on learning science. Second, some studies have addressed the topic of how learning in the

class. Research supports how learning in the classroom and the influence of the environment and culture. This study reports the experience and religious beliefs to do with the students in teaching methods in order to implement the unity of sciences.

2. MATERIALS AND METHODS

This study discusses the implementation of an integrated model of discovery learning unity of sciences to develop critical thinking and PRB biology students UIN Walisongo. The word "person" with the concept of "religious beliefs" Personal Religious Beliefs (PRB) used to refer to the views, opinions, attitudes, and knowledge built by students of biology through interaction with the socio-cultural through his life experiences and interpreted as knowledge in religion.

The research method with qualitative research, with population biology education student first semester (PB1A and PB1B). Data analysis taken students from two classes for sample, each class of ten students. Five students with a background in Islamic schools and five student with a background in public schools. Data collection through interviews and observation and then analyze the data using Multi-Grounded theory, discuss and interpretive the data, and finally developed a model to re-establish confidence in the students studying general biology.

Interviews were analyzed both in terms of typology based classification Barbour (2000) with an interpretive approach (students' perceptions about science and Islam). This categorization is based on the relationship between the understanding of religious knowledge in everyday life and the perception of the general biology learning experience and this reconciliation with religious beliefs as stated (Stolberg, 2007).

The concept Islamization of knowledge integration categorically classified section Barbour relevant as found in the implementation of the unity of science that is spiritualized modern sciences. In order to explore the relationship between Islam and science education that explored the following questions as follows:

1. The extent to which biology students experiencing conflict between religious belief and for the science? If they have experience of conflict, how they cope?
2. Do students think that religion can solve problems in scientific issues?
3. What the student experience for learning in the classroom about the relationship between Islam and Basic Biology?
4. How to categorize students of science and Islam in their lives? This study seeks to explore the biology students how student background in socio-cultural life of society to understand the science to do with Islam while studying at the university Walisongo.

Observations were made to gain critical thinking skills of data include: interpretation, analysis, evaluation, inference, explanation and self-regulation (Facione, 2011). With the instrument used, will be analyzed each class of ten students.

Researchers conducted interviews and observations made in the years 2015-2016 as the main source of data with interviewed twenty students of Biology Education studying the basic biology of selected stratificate random. Researcher using a semi-structured interview by asking questions leads, sub-questions were also asked when needed. All interviews were recorded and recorded on tape and then transcribed. Interviews for fifteen minutes with a relaxed classroom as little discussion as ongoing debriefing. To maintain privacy, the original name is replaced with the code student with a serial number when interviewing.

All students who participated were enthusiastic about the unity of the sciences and their perception of their implementation in the classroom. UIN Walisongo being aggressively disseminating the unity of science in every classroom. Researchers used a personal approach in an interview permission of the chairman of the Department of Biology Education.

Interviews were analyzed looking for similarities and differences of the questions and the answers given by each student. Researchers used the typology analysis techniques to achieve deep understanding of student feedback regarding the unity of science. Interpretive analysis is challenging, because of the interpretation that was built by the deep involvement of researchers with the interview data. Interpretation means the many meanings of the events that occur in students associated with Islam and science and education.

3. TABLES

Analysis of interviews in the classroom revealed that the epistemology of science, the purpose of science and discovery learning models applied in the classroom with the critical thinking and Personal Religious Beliefs (PRB) of the students.

TABLE 1: DESCRIPTION OF THE STUDENTS

<i>Responden</i>	<i>Expperiece (how long, educational background before)</i>	<i>Personal Religious Beliefs (PRB)</i>	<i>Questions (Q)</i>
R1, R13, R10, R20	6 years Islamic education	Characteristics of Muslim science learners	Q1 No Q2 Yes Q3 fun, challenging Q4 must be integrated
R2, R6, R11, R15	6 years Non Islamic education	Religious view of learning science	Q1Yes Q2 Yes/No Q3 hardship Q4 discussion, can be integrated
R3, R9, R16, R17	3 yers Islamic education	Religious view of learning science	Q1Yes/No Q2 Y Q3 challenging Q4 must be integrated

contd. table 1

<i>Responden</i>	<i>Expperiece (how long, educational background before)</i>	<i>Personal Religious Beliefs (PRB)</i>	<i>Questions (Q)</i>
R4, R8, R12, R19	12 years Non Islamic education,	Personal interpretation of religious view	Q1 Yes Q2 Yes/No Q3 very hardship Q4 discussion, dialogue
R5, R7, R14, R18	12 years, Islamic education	Characteristics of Muslim science learners	Q1 No Q2 Yes Q3 enjoy Q4 must be integrated

In table 1 mengklasifikasikan respondents 1-20 with previous educational background, PRB, and questions about its implementation in the classroom. PRB classification instrument based insrumen developed by Mansour (2008).

TABEL 2: INDICATORS SCORE CRITICAL THINKING SKILLS

<i>No Responden</i>	<i>Indicator score critical thinking skills</i>						<i>Total</i>	<i>criteria</i>
	<i>interpre- tation</i>	<i>analy- sis</i>	<i>evalua- tion</i>	<i>inferen- tion</i>	<i>reason</i>	<i>self- regulation</i>		
1 R1	15	12	12	12	12	15	78	hight
2 R2	10	10	9	10	10	10	59	mean
3 R3	11	9	9	9	9	9	56	mean
4 R4	10	9	11	9	9	9	57	mean
5 R5	15	14	13	14	15	15	86	very hight
6 R6	11	12	11	12	12	12	70	hight
7 R7	15	15	14	14	15	15	88	very hight
8 R8	14	13	12	12	14	14	79	hight
9 R9	12	12	12	12	12	11	71	hight
10 R10	14	14	13	15	14	14	84	very hight
11 R11	11	11	10	10	12	12	66	hight
12 R12	11	9	9	9	9	9	56	mean
13 R13	15	15	13	14	14	14	85	very hight
14 R14	15	14	14	14	14	13	84	very hight
15 R15	11	12	10	10	11	12	66	hight
16 R16	11	12	12	12	12	12	71	hight
17 R17	12	11	12	12	12	12	71	hight
18 R18	15	14	11	11	11	12	74	hight
19 R19	10	9	9	10	10	10	58	mean
20 R20	14	12	12	12	12	12	74	hight
Criteria								
80,1 – 100	very hight							
60,1 – 80	Hight							
40,1 – 60	Mean							
20,1 – 40	Low							
0,0 – 20	very low							

10 Critical thinking skills include: interpretation, analysis, evaluation, inference, explanation and self-regulation (Facione, 2011).

4. RESULTS

1 Although most analyzed, qualitative research focus is allowed for reasonable results (Erickson, 2003). Each student in terms of commitment of religious integration have in common. That spirit science concept learning and its integration with the values of the Islamic religion that can be extracted to be applied in everyday life by students.

Mansour (2008, 2011) the dimensional of Personal Religious Beliefs (PRB) who developed include:

- a) Linkage PRB, the student experience and interpretation teaching students in the classroom
- b) Students experience in studying is influenced by PRB
- c) Pedagogical beliefs of teachers formed from the student teaching experience for reciprocal action and influence the implementation of teaching in the classroom.
- d) Knowledge and beliefs of teachers be equipped student experience
- e) Learning as a product of interaction between religious beliefs, experiences, pedagogical students in the classroom.

There are three categories PRB: Personal interpretation of religious view, Religious view of learning science and characteristics of Muslim science learning. Questions answered by the respondents developed later included in a particular category such as in the table. There is equality of respondents are self-motivated to implement the unity of sciences though its implementation every student has a level of difficulty different.

2 Researchers also noted that the religious learning experience previously built through interaction with the environment 'social context' and can be modified by the personal experience of students. PBR affect ways of looking at the implementation of learning.

3 Critical thinking skills, there are four criteria, namely: very high, high, mean, and low student of twenty samples. Criteria critical thinking include: interpretation, analysis, evaluation, inference, explanation and self-regulation. The observations were made behind of the record without being noticed by students. Observation in activities in class when the discussion, question and answer session followed the presentations and group work.

5. DISCUSSION

Students understand every PBR with interpretation in the form of different experiences with one another. However, students also have beliefs about themselves,

about the nature of science, studying the integration of basic biology. The social context in which students live and a school environment where they learn also form the experience of each student. The study also supported the idea that the life experience and background effect to what they believe, how they interpret and interact with their social context and consequently the way they teach (Cole, 1990; Tsai, 2002).

The obstacles they face is to implement the unity of science with the knowledge gained when studying, for insight and knowledge of religion were deemed insufficient.

In addition, some students have somewhat different interpretations of the unity of science. According to those forms of integration of science is not always always between religion and science itself. But integration can be a form of biological science with other sciences (integrated science).

Interpretation of the students are not only sufficiently established and disseminated by the student life experience, but also by the previous religious beliefs and experiences of students. The results of the research that the student experience is formed from the educational backgrounds of students, and through the interpretation of this experience, students formed the belief that they use directly for their own teaching.

Personal belief that there be a psychological construction depicting student's personal thoughts, in turn, affects the students interpret thoughts and actions (Richardson, 2003).

This study high lights the role of the Islamization of science and complex ways in which students directly involved to implement. Universities need to encourage the dissemination of various aspects of the integration of science education and Islam. These aspects include the role of religion clump student (Tafsir, Ulumul quran and hadith). Need to build relationships between students of science and religion students to build the perception of scientific integration of unity of science.

All elements must work together and understanding in the context of science, Islam and the influence of religion was made explicit. Hopefully, the results of future research will help to take steps in our understanding of the assumptions unity of science that became vision in islamic education.

In discovery learning model implementation is integrated with the unity of sciences, students' curiosity will appear. The question that arises show students' curiosity to know the results of the scientific process that has been done. Objective attitude and respect the opinions of your friends in learning is evident. Students are required to record information through discussion and question and answer. The attitude of willingness to believe can be grown in the model Discovery learning when in a group discussion (Dracup, 2012). Students also acquire data from experimental activities to discover the concepts expected, so from this activity

will form an honest and objective attitude. At the presentation of experiments of the students produce findings and data may differ from the views of students.

Students can use the base in the opinion Quran and hadith in the discussions. With concrete examples that became a fact in everyday life, learning will be more meaningful. Knowledge of students is more developed and meaningful, causing the formation of a scientific and critical attitude to the students (Facione, 2011; Vargil, 2012).

Acknowledgement

This research for implementation discovery learning model to determine the student's understanding of Islam and basic biology. The need to develop of critical thinking and PBR students in understanding science and personal religious belief. Religion says that there is no doubt that Islam encourages to acquire knowledge. Islam came to educate and benefit the lives of the people. In Qur'an (58:11): God promised to uplift the servant knowledgeable.

References

- Arsyad, Azhardkk. (2009). *Membangun Universitas menuju Peradaban Islam Modern*. Makassar: Alauddin Press.
- Aydn, H. (2005). *Işlam Du's,u'nçe Geleneginde Din, Felsefe ve Bilim*. [Religious philosophy, and science in Islamic thought]. Ankara: Naturel Publications.
- Aydn, H. (2009). *Postmodern C, agda Islam ve Bilim* [Islam and science in postmodern age]. Iystanbul: Bilimve Gelecek Publications.
- Barbour, I. G. (2000). *When science meets religion: Enemies, strangers, or partners?* San Francisco: Harper.BAV (Scientific Research Foundation). (2006). Retrieved June 22, 2006, from http://www.bilimarastirmavakfi.org/bav_dunyada_darwinizm.html.
- Bruckman, A.(1997). *Moose Crossing: Construction, community, and learning in a networked virtual world for kids* (Doctoral dissertation, Massachusetts Institute of Technology). Retrieved from <http://www.static.cc.gatech.edu/~asb/thesis/>
- Cole, A.L. (1990). Personal theories of teaching: Development in the formative years. *The Alberta Journal of Educational Research*, 36(3), 203–222.
- Drever, E. (2003). *Using semi-structured interviews in small-scale research: A teacher's guide*. The SCORE Centre: University of Glasgow.
- Dracup Mary (2012). *Designing online role plays with a focus on story development to support engagement and critical learning for higher education students*. *Journal of Learning Design* Vol.5
- Erickson, F. (2003). Qualitative research methods for science education. In B. J. Fraser & K. G. Tobin (Eds.), *International handbook of science education* (pp. 1155–1174). Boston: Kluwer Academic Publishers.
- Facione Peter A (2011), *Critical Thinking: What It Is and Why It Counts*, Measured Reasons and The California Academic Press, Millbrae, CA
- Houston, C. (2006). The never ending dance: Islamism, Kemalism, and the power of self-institution in Turkey. *The Australian Journal of Anthropology*, 17, 161–178. doi:10.1111/j.1835-9310.2006.tb00055.x.

- Mahner, M., & Bunge, M. (1996). Is religious education compatible with science education? *Science & Education*, 5, 102–123. doi:10.1007/BF00428612.
- Mansour, N. (2008). The Experiences and Personal Religious Beliefs of Egyptian Science Teachers as a Framework for Understanding the Shaping and Reshaping of their Beliefs and Practices about Science-Technology-Society (STS). *International Journal of Science Education Vol. 30, No. 12, 5 October 2008, pp. 1605–1634*. DOI: 10.1080/09500690701463303.
- Mansour, N. (2009). Science teachers' interpretations of Islamic culture related to science education versus the Islamic epistemology and ontology of science. *Cultural Studies in Science Education*, 5, 127–140. doi:10.1007/s11422-009-9214-5.
- Mansour, N. (2011). Science teachers' views of science and religion vs. the Islamic perspective: Conflicting or compatible? *Science Education*, 9(2), 281–309.
- Muhyar (2012), *Integrasi Sains dan Agama (Strategi Konvensi IAIN Walisongo Menjadi UIN Walisongo)*, Semarang: Seminar Nasional.
- Powers, J. M., & Cookson, P. W. Jr.(1999). The politics of school choice research. *Educational Policy*, 13(1), 104-122. doi:10.1177/0895904899131009.
- Richardson, V. (2003). Pre-service teachers' beliefs. In J. Raths, & A. McAninch (Eds.), *Teacher Beliefs and Classroom Performance: the impact of teacher education* (pp. 1–22). USA: Information Age Publishing Inc.
- Shirly A Vargil, Orit Herscovitz (2012) Yeduhit Judy Dori. *Teaching Thinking Skills in Context-Based Learning: Teachers' Challenges and Assessment Knowledge*. *J Sci Educ Technol*, vol 21:207–225.
- Stolberg, T. (2007). The religio-scientific frameworks of pre-service primary teachers: An analysis of their influence of their teaching of science. *International Journal of Science Education*, 29(7), 909–930. doi:10.1080/09500690600924934.
- Tsai, C. (2002). A science teacher's reflections and knowledge growth about STS instruction after actual implementation. *Science Education*, 86(1), 23–41. Sexton, S.S. (2004). Prior teacher experiences informing how post-graduate teacher candidates see teaching and themselves in the role as the teacher. *International Education Journal*, 5(2), 205–214.
- Tsai, C. (2002). Nested epistemologies: science teachers' beliefs of teaching, learning and science. *International Journal of Science Education*, 24(8), 771-783.

artikel man in india

ORIGINALITY REPORT

24%

SIMILARITY INDEX

23%

INTERNET SOURCES

15%

PUBLICATIONS

7%

STUDENT PAPERS

PRIMARY SOURCES

1	link.springer.com Internet Source	5%
2	www.ssoar.info Internet Source	3%
3	jurnal.uns.ac.id Internet Source	3%
4	hdl.handle.net Internet Source	2%
5	s3ipa.fkip.uns.ac.id Internet Source	1%
6	id.123dok.com Internet Source	1%
7	semnasmipa2017.walisongo.ac.id Internet Source	1%
8	Özgür Taşkın. "An exploratory examination of Islamic values in science education: Islamization of science teaching and learning via constructivism", Cultural Studies of Science Education, 2014 Publication	1%

9	www.ojs.unm.ac.id Internet Source	1 %
10	Submitted to University of Melbourne Student Paper	1 %
11	docplayer.net Internet Source	1 %
12	www.tandfonline.com Internet Source	1 %
13	invotek.ppj.unp.ac.id Internet Source	1 %
14	journal2.um.ac.id Internet Source	1 %
15	www.ris.uu.nl Internet Source	1 %
16	es.scribd.com Internet Source	1 %
17	www.coursehero.com Internet Source	<1 %

Exclude quotes On

Exclude matches < 15 words

Exclude bibliography On

artikel man in india

GRADEMARK REPORT

FINAL GRADE

/5

GENERAL COMMENTS

Instructor

PAGE 1

PAGE 2

PAGE 3

PAGE 4

PAGE 5

PAGE 6

PAGE 7

PAGE 8

PAGE 9

PAGE 10
