UMRAN International Journal of Islamic and Civilizational Studies Full Paper

The Experiences and Personal Religious Beliefs (PRB) of UIN Walisongo Science Teachers as a Framework for Understanding the Reshaping of their Beliefs and Implementation in Basic Biology Learning

Nur Khasanah[a*], Sajidan[b], Baskoro[c], Sarwanto[d]

[a]*Faculty Science and Technology, UIN Walisongo, Semarang, Indonesia*
[b,c,d]*, Faculty Science Education, UNS Surakarta, Indonesia*
**Corresponding author: nurkhasanah@walisongo.ac.id*

Article history

Received: 10/10/2016 Received in revised form:13/1/2017 Accepted: 04/03 /2017

Abstract

This research investigates the role of experience in relation to personal religion beliefs teachers and implementation in basic biology learning. The study adopted a social-cultural constructivist perspective using an interpretive approach. The research was guided by teachers' interpretations of their experiences related to basic biology learning. These interpretations are re-interpreted to find meaningful conceptual categories (grounded in the data) from which to build a model to understand the influence of experiences within socio-Islamic culture on teachers' beliefs and implementation in basic biology learning. Data was collected from five teachers using interviews and observations. The findings of this study suggest that it was mainly teachers' personal religious beliefs and experiences that shaped their beliefs and implementation in basic biology learning. The research also led to a model, constructed on the basis of the data analysis, which suggests an explanation of how teachers' personal religious beliefs and experiences influence their beliefs and implementation in basic biology learning.

Keywords: personal religious beliefs (PRB), experience, basic biology learning

1.0 INTRODUCTION

Personal Religiuos 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 worked as a framework for understanding events, experiences and objects at the individual level and is a social construction based on the experiences of one's life (especially in the religious experience).

The religious beliefs of an educator comes from personal experience, the experience of teaching in the classroom, and formal knowledge, including the departments of education and pedagogical knowledge (Powers & Cookson, 1999; Richardson, 2003). He stressed that teaching experience is more important than the religious beliefs of an educator. In addition, informal experience in everyday life can also affect even change the religious beliefs and knowledge an educator. Mansour (2011) argues that to understand how educators think, act, it is important to understand the experience of life. In addition, educators to understand the teaching in the classroom, it is necessary to understand the context in which he worked

Since UIN Walisongo launched as a university-based unity of science, as a lecturer at UIN Walisongo required to be able to teach with a solid base of science (Unity of sciences). Unity of Sciences (wahdat al 'ulum) is a form of integration of science and religion. Unity of Sciences (Wahdat al-ulum) has three development strategy that is the humanization of Islamic sciences, spiritualize the modern sciences, and the revitalization of local wisdom (Muhyar, 2012).

Stolberg (2007) noted the importance of scientific and religious attitudes adopted by teachers and prospective teachers. The results showed that belief affects the way teachers teach science itself, In scientific studies, sharing their religious knowledge with general knowledge is a human conclusion that identifies the science based on the object of study. But when we see that the Qur'an and Sunnah in fact does not distinguish between religious knowledge with general knowledge, even according to Imam Suprayogo in his book Scientific Paradigm Reconstruction of Islamic Universities states that the position of religious studies and general science depicted in the form of a tree, where Al -qur'an and sunnah positioned as the results of experiments and logical reasoning or become a source of knowledge (Amin, 2004; Arsyad, 2009).

The phenomena seen lately indicates awareness that the need for a paradigm integration especially between religious knowledge with general knowledge, including how to learning in class. 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 teachings of the religion (Islam) is a aqidah. Because, in the Islamic aqidah (Allah SWT in total) is a way of life (world-view) for every Muslim to live a daily life, including teaching in the classroom. In Western countries, there are two main ideas. First, declare that religion and science can not exist together. Mahner & Bunge (1996) states that science and religion can coexist only if one of them is distorted. Muslim scientists and researchers generally agree that Islam and science can coexist (Mansour, 2008).

No more separation of religion from science and vice versa, understood religion over science. 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 beliefs of an educator can not be separated. For those that in the education of science learning can only occur if the experience of constructing meaning within the framework of Islamic and science (Barbour, 2000).

This research study to known the opinion that the experience and religious beliefs of an educator support in science learning. There are two main reasons, that drive to do research. First, many studies on the perception of religious beliefs in an influential educators in the learning of science. Second, some studies have addressed the topic of how learning in class. In general, research supports how learning in the classroom and the influence of the environment and culture.

However, this study reported the experience and religious beliefs of an educator to do with the basic biology learning in the classroom in order Islamization of science.

2.0 METHODOLOGY

This study discusses the influence the understanding and interpretation of religious principles to the study of scientific issues, and the extent to which a teacher looked at this issue directly or indirectly related to religious beliefs. To the researchers use the word "Personal Religious Beliefs" (PRB). This term is used to refer to the views, opinions, attitudes, and knowledge built by a teacher through the interaction with the socio-cultural through his life experiences and interpreted as knowledge in religion. PRB worked as a framework for understanding events, experiences and objects at the individual level. It is a social construction based on a variety of life experiences (especially religious experience) an experienced lecturer. The Muslim researchers have investigated the relationship between science and Islam in the field of science education by using constructivism as one of their methodology. Their argument is based on the understanding that the personal beliefs of lecturers in teaching and learning methods in fact reflects the integration of Islam and science. To support the interpretation of lecturers in teaching science education that supports Islamization of science in teaching, one can not separate science lecturer from the Islamic world.

In this study restricts an important issue is whether science and Islam are compatible or not so as to avoid overlapping. Researchers will investigate the problem by revealing the personal feelings of biology professor who teaches courses in basic biology of the idea of science and the compatibility of Islam. If they are compatible, how this compatibility lecturers organized in everyday life becomes important to understand.

In this case, the interviews were analyzed both in terms of typology based classification Barbour (2000) with an interpretive approach (perception lecturer on science education and Islam). This categorization is based on the relationship between the understanding of religious knowledge in everyday life and perceptions of experience teaching general biology and reconciliation with religious beliefs as stated by Stolberg (2007). The first category, conflict, if knowlage and separate religion (atheist scientist). The two groups have in common the belief that religion and science are different but tolerate each other and remain ad distance. The third category, dialogue, stating that there are similarities between science and religion. Fourth is the integration of the claim that there is a systematic and extensive linkages between science and religion.

The concept of Islamization of knowledge integration categorically classified section Barbour relefan 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 following questions are explored

1. The extent to which biology professor experiencing conflict between religious belief and for the science? If they have experience of conflict, how they cope?
2. Do Lecturer think that religion can solve problems in scientific issues?
3. What an experience Lecturer in Biology during learning in the classroom (students and faculty) on the relationship between Islam and General Biology?
4. How Biology Lecturer categorize science and Islam in their lives?

In this study, researchers sought to explore how a Muslim professor of biology, which have grown in Islam-socio-cultural environment, formal education lecturer in the field of biology and science education and teaching experience at the university Walisongo. Background experience which grew up in an Islamic society-socio-cultural it is important to understand the influence of the trust relationship with the basic biology learning and Islam while teaching at the University of Walisongo.

3.0 RESULT

3.1 Tables

Collecting research data with interview and observation and then analyze the data using Multi-Grounded theory, discuss and interpret the data, and finally developed a model to re-establish lecturer confidence in basic biology.

Table 1: Description of the samples

Respondent	Experience (how long teaching and educational background)	Personal Religious Beliefs (PRB)	Questions (Q)
R1	>20 y, Non Islamic education	Characteristics of Muslim science teachers	Q1 N, Q2 Y Q3 fun, challenging Q4 must be integrated
R2	>10 y, Non Islamic education	Religious view of teaching/learning science	Q1Y, Q2 Y/T Q3 hardship Q4 discussion, can be integrated
R3	< 10 y, Islamic education	Religious view of teaching/learning science	Q1Y/N , Q2 Y Q3 challenging Q4 must be integrated
R4	<10 y, Non Islamic education,	Personal interpretation of religious view	Q1 Y, Q2 Y/T Q3 very hardship Q4 discussion, dialogue
R5	> 5 y, Islamic education	Characteristics of Muslim science teachers	Q1 N, Q2 Y Q3 challenging Q4 must be integrated

Table 1 classifies respondents 1-5 with teaching experience and educational background, PRB, and answers to questions about its implementation in the classroom. For classification PRB instrument developed by Mansour (2008).

3.2 Interviews and classroom observations

Interview and classroom observation aims to ascertain the extent to which faculty teach influenced by their religious beliefs (Drever, 2003) and to provide insight into how their beliefs affect the way the teaching faculty in the classroom. Analysis of interviews and classroom observation revealed that the epistemology of science, the role of teachers, the purpose of science and teaching methods used lecturers, and implementation with Personal Religious Beliefs (PRB).

Researchers conducted interviews and observations made in the years 2014-2015 as the main source of data and interviewed five of lecturer basic biology Education Lecturer who teaches general biology. Researcher using semi-structured interview by asking questions leads, sub-questions were also asked when needed. All interviews were recorded on tape and then transcribed. Interviews for 30 minutes to relax in the faculty room as little discussion as ongoing debriefing. To maintain privacy, the original name is replaced with the code lecturer with the serial number when interviewing.

All lecturers who participated were enthusiastic about the unity of the sciences and their perception of their implementation in the classroom. This is because UIN Walisongo 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 answers given by lecturers. Researchers used the typology analysis techniques to achieve deep understanding lecturer feedback regarding 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 of the faculty associated with Islam and science and education.

3.3 Interpretation of personal perception of lecturers

Although the small sample on research, the focus of qualitative research study allowed for reasonable results (Erickson, 2003). Each lecturer in religious integration commitments have in common. That spirit learning basic biology concept 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) concerning dimensional model of Personal Religious Beliefs (PRB) who developed include:

a. Personal religious beliefs, teachers' experience and teachers' interpretation.
b. Teachers' interpretations of their experiences and the forming of their pedagogical beliefs.
c. Teachers' pedagogical beliefs, their framework for action and practice.
d. Knowledge and teachers' beliefs
e. Teachers' identity as a product of the interaction between their personal religious beliefs, experiences, pedagogical beliefs and practices.

Analysis of interviews along with classroom observations reveal that beliefs about the role of the lecturers, knowledge and teaching methods are very much shaped by the PBR is derived from the values inherent in religion. Researchers also noted that teaching experience is built through interaction with the environment 'social context' and can be modified by the personal experience of the lecturers. PBR affect ways of looking at the implementation of basic biology learning.

There are three categories PRB: Personal interpretation of religious view, Religious view of teaching / learning science and Characteristics of Muslim science teachers. Questions answered by the respondents developed later included in a particular category such as in the table. There are equations of the fifth respondent has a passion for the implementation of the unity of science though its implementation every lecturer has a difficulty level that is different.

Each Lecturer understand PBR with interpretation in the form of different experiences with one another. However, lecturers also have beliefs about themselves, about the nature of science, the integration of teaching general biology. The social context in which lecturers live and school where they learn also form the experience of each faculty. The study also supported the idea that the life experiences of teachers 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).

Problems lecturers are to implement the unity of science with the knowledge gained when studying, for insight and knowledge of religion were deemed insufficient. In addition, some professors have somewhat different interpretations of the unity of science. According to those forms of integration of science is not always between religion and science itself. But integration can be a form of biological science with other sciences (integrated science) (Aydin, 2005; 2009).

Interpretation lecturers are not only sufficiently established and disseminated by the life experience of lecturers, but also by the previous religious beliefs and experience of lecturers. Result from research that faculty experience is formed from the educational backgrounds of lecturers, and through the interpretation of this experience, professors formed the belief that they use directly for their own teaching. Personal belief that there be a psychological construction that describe personal thoughts lecturers, in turn affecting the lecturers interpret thoughts and actions (Richardson, 2003; Houston, 2006).

4.0 ACKNOWLEDGMENTS AND LEGAL RESPONSIBILITY

This study highlights the role of the Islamization of science and complex ways in which lecturers directly involved to implement. Universities need to encourage dissemination of various aspects

of the integration of science education and Islam. These aspects include the role of religion clump lecturer (*Tafsir, Ulumul quran* and *Ulumul hadits*). Need to build the relationship between science lecturers and professors of religion to build the perception of scientific integration as foreseen in the unity of science.

All elements must work together and understand 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 to come.

5.0 CONCLUSION

As mentioned earlier, this study is not an argument about the influence of Islam on the faculty. Instead it is about understanding lecturer on Islamic religious understanding of their implementation in general biology class. The need for increased PBR what the lecturer to guide faculty in improving the knowledge that his belief in the classroom teaching more stable. Religion says that there is no doubt that Islam encourages to acquire knowledge. Islam come to educate and benefit the lives of the people. *Rasulullah* SAW, said: Seeking knowledge is obligatory on every Muslim.

References

Amin Abdullah, dkk. (2003). *Menyatukan Kembali Ilmu-IImu Agama dan Umum,*Yogyakarta: SUKA Press.

Arsyad, Azhar dkk. (2009). *Membangun Universitas menuju Peradaban Islam Modern*. Makassar: Alauddin Press

Aydın, H. (2005). *I˙slam Du¨s¸u¨nce Geleneg˘inde Din, Felsefe ve Bilim. [Religious philosophy, and science in Islamic thought]*. Ankara: Naturel Publications.

Aydın, H. (2009). *Postmodern C¸ ag˘da I˙slam ve Bilim [Islam and science in postmodern age].* I˙stanbul: 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.

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 SCRE Centre: University of Glasgow.

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.

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. (2011). "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.

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.

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.