Integrating Science and Religion in the Curriculum of Indonesian Islamic Higher Education: A Case Study of UIN Malang

Nur Ali, aFaculty of Tarbiyah and Teacher Training Universitas Islam Negeri Maulana Malik Ibrahim Malang, 65144, Indonesia, Email: a nurali@uin-malang.ac.id

The weak implementing of the integration of science and religion (SR) has been consistently reported as a problem in the developments of science, technology and social change. The Director-General of Islamic Education instructs Rectors of Islamic Higher Education (IHE) to review, develop and organise the integration of religion and sciences. This study evaluates the extent of the integration within the curriculum. The methods used in this case study were in-depth interviews, observations and document analysis. The results showed that Universitas Islam Negeri (UIN) Malang puts secular and religious sciences in an equal position, integrating religion within the curriculum through the inclusion of spiritual elements and hidden curriculum. The integration uses three methods, i.e., internalisation, labelisation, and deductive methods. This paper concludes that the integration of SR guides the development of religion, science and arts in an integrative way based on religious values and character-building, and fulfills human needs.

Key words: Curriculum, Hidden Curriculum, Integration of Science and Religion, Ma’had al-Jamiah.

Introduction

Secular scientists state that the metaphysics aspect in religious study is not important. They argue that science should be anthropocentric (human-centred). Scientists tend to base everything on the free ethics of scientific methodology and experiment and do not consider divine values and morality. On the other hand, religious scholars rely on metaphysics and view science from a theocentric's point of view (Mudzhar et al., 2019). Both exist on two different
sides, running parallel to each other (Bagir et al., 2005). The integration of SR is therefore needed so that there will be no more dichotomies between secular and religious sciences.

From the above problem, Islamic Higher Education (IHE) believes that the integration of SR should be done in the contemporary era. In 2019, The Director-General of Islamic Education, as an umbrella for IHE institutions in Indonesia, instructed the research centre of integration implementation study to develop a guidebook for the integration and implementation of SR (Mudzhar et al., 2019). It means that state and private IHE are ordered to conduct teaching and research based on scientific-religious integration principals. Although it refers to the same notion, that is scientific-religious integration, some universities in Indonesia have a different concept of SR integration, e.g., Spider Web in UIN Sunan Kalijaga Yogyakarta and Tree of Knowledge in UIN Malang.

Historically, in UIN Malang, there is a prominent figure who propagated the integration of science and religious studies. Imam Suprayogo, the first rector of UIN Malang actively promoted this in his speeches and articles (Khozin, 2016, p. 56). During his leadership, UIN Malang spearheaded the integration of SR, built institution supporting forces, created the required campus climate and culture, and initiated the development of the integrative curriculum to bring about the establishment of the Ulul Albab (UA) character within academic communities (Suprayogo, 2012).

Other countries have also been involved in the integration of SR within their respective models, i.e., in Malaysia, there is an Islamisation of knowledge concept founded by al-Attas, which incorporates relevant Islamic elements into some fields of knowledge from western sources. This becomes a symbol to resurrect and fight against the extreme emphasis on western culture placed by Moslem scholars within Moslem nations. However, Khozin (2016) criticises the phrase Islamisation of knowledge which has certain limitations and is seen as "misleading." He argues that the expression reflects that all knowledge, including that from traditional Islam originating from classical ulama, is not Islamic, and that there is a need for it to be Islamised.

According to Suprayogo (2009), the Qur’an as the primary source of Islamic laws contains outstanding information. Besides the discussion on God, human creation, supernatural creatures such as angels, genie, and satan, al-Qur’an also discusses the universe (cosmos, al-‘alam), earth (al-ardh), sun, moon, stars (al-najm), water, mountains, thunder (al-barq), ocean (al-bahr), animals (al-an’âm), and plants (al-nabâtât). Al-Qur’an also discusses safety, both in the world and the hereafter. Based on al-Qur’an which provides many explanations about natural phenomena (kauniyyah), it is easy to integrate science and religion based on the knowledge from al-Qur’an.
An important medium to actualise the integration of SR is a curriculum as it influences and leads teaching. The importance of curriculum in course development has been described in numerous studies. Etemadifard et al. (2018) explain that the use of interdisciplinary and multidisciplinary approaches within the curriculum of higher education institutions in Iran has created socio-cultural transformation and significantly increased the educational level of women and eventually their empowerment. Hidayat (2011) proposes that the curriculum should be composed by responding to micro and macro interests so that the expectations of parents, students, entrepreneurs, and rulers, as well as the society, can be fulfilled. Specifically, in integrating SR, The Ministry of Religious Affairs recommends that curriculum should be formulated by paying attention to the aspects of science integration starting from planning and setting data from graduates, re-evaluation of study materials, processes within education, and assessment (Mudzhar et al., 2019).

While Indonesian universities have not been included in the list of top universities in the world, noble Islamic values in the curriculum of IHE are, in fact, still an aspiration that will lead them into achieving elite status someday. Meanwhile, the separation between science-religion within the Moslem community is due to the lack of understanding about the integration (Bagir et al., 2005). Thus, the integration of SR in the curriculum is considered vital and essential. Nurwanto and Cusack (2017) reveal that religious education curriculum in Indonesia is complicated as Indonesia has many religions, not just Islam. Each religious denomination focuses on their respective religion and students are only taught their own faith and religious identity. In England however, the curriculum includes materials about the philosophy of religion and non-religion as well as life orientation (Nurwanto and Cusack, 2017). This perhaps leads to acceptance and recognition of other beliefs.

Discussions on the integration of SR in the curriculum of Indonesian IHE need to be done as there are very few studies focusing on the issue (Riyanto, 2012). This article focuses on the integration of SR in UIN Malang to answer some questions. First, how is the application of SR integration at UIN Malang within the curriculum and the hidden curriculum? Second, what are the methods used by UIN Malang to realise SR integration in the curriculum? UIN Malang is chosen as the context for this study for several reasons. First, it is one of the universities recommended and developed by The Ministry of Religious Affairs to become a world class university in Indonesia. Second, UIN Malang is the pioneer of the Ma'had al Jamiah program in Indonesia where students are exposed to the integration of SR within faculty curricula. Last, it is an Islamic university with foreign students from 29 countries.
Research Method

This research was conducted at UIN Malang to provide a descriptive and holistic explanation of the implementation of science and religion integration at campus. This qualitative research was focused on understanding the activities of integrating religion within the curriculum conducted by the vice chancellor for academic affairs. Sampling technique was purposive. The study involved 7 lecturers (4 from natural science, 2 from social science, and 1 from the field of al-Qur’an and Hadith), 4 religious lecturers (kyai) in the Ma’had, Rector of UIN Malang and the Vice Rector of Academic and Curriculum Affairs. They were chosen as research subjects because they are the initiators and implementers of SR integration in UIN Malang. They have different knowledge backgrounds and positions so the researcher can get comprehensive data. The main aims of this research are to determine the extent to which SR is implemented in UIN campus and to determine the methods of SR implementation at UIN Malang.

Data was collected through interviews, observations and document study. Data analysis was performed through processes that included data collection, reduction, display and conclusion verification. A data validity check was conducted by triangulation and member check.

Research Results and Discussion

Integrating Religion from the Whole Perspective – Curricula or otherwise

The mission of UIN Malang is to produce quality graduates, those with moral grandeur, spiritual depth, scientific breadth and professional maturity (UIN Malang, 2016). Al-Qur’an contains teachings related to theology, law (shari’a), ethics (morals), natural sciences, social sciences and humanities. This means there will not be any problems with integration. The integration of religion within the curriculum is carried out by incorporating elements of values, character and monotheism based on al-Qur’an and Hadith within the curriculum and teaching materials.

The interviews involving the Rector and the Vice Rector of Academic and Curriculum Affairs revealed that the integration of SR involved decision-making and direction at the highest level, meaning both the Rector and Vice Rector were involved directly. Each study program develops the curriculum, syllabus, and integrative lesson plans through workshop activities before the implementation of new policy. All lecturers were instructed to attend these compulsory workshops twice a year. The outcome of this activity is that each lecturer prepares the syllabus and lesson plans by including elements of religious values, character and tawhid in the course material. Besides that, the course assignments are developed to ensure that religious values and
development of noble character are included in the tasks. This shows that awareness of SR integration must be present and must be obvious and reflected in writing.

Interviews involving the lecturers revealed that the integration of religion within the curriculum demands that scientific papers written by students (which include those in post graduate programmes like thesis or dissertation) and lecturers' scientific works (such as textbooks and research papers) must incorporate elements of religious values and be supported by verses from al-Qur’an and Hadith.

Furthermore, SR was also integrated in comprehensive examinations for undergraduate and graduate students. Students who will take the exam must also learn the verses of al-Qur’an and Hadith which are related to the exam materials. Religious integration activities at Ma’had UIN are carried out through the Taklim Afkar program, an integrative religious study activity that must be attended by all new students. The material is adjusted to the curriculum of each study program. The task of Ma’had al-Jamiah is to instil spiritual depth, while the scientific breadth and professional maturity are developed through activities in the faculty (UIN Malang, 2016). Sumbulah (2017) states that “the UA personality developed through the syllabi of each course can help students gain the knowledge of the teaching and information about Islam, unity, honesty, empathy, and inter-religious harmony.”

This study confirms that there are two major ways in which UIN Malang implements SR integration. The first is through the hidden curriculum, a covert way in which integration is implemented, and the second way is via systematic inclusion into the official curriculum.

**Integrating Religion within the Hidden Curriculum**

While responses were obtained from all of the lecturers and the university administrators (Rector and Vice Rector), most of the data with regard to the hidden curriculum was collected from 4 religious lecturers (kyai) in the Ma’had. All four admitted that they had a strong presence in these activities, and they were assigned by the university administration to be actively involved. All of the interviewees mentioned that there is a hidden curriculum and it was a type of informal education.

The hidden curriculum consists of all activities outside the formal curriculum that can be utilised by lecturers to achieve the goals of the institution. Data from the interviews revealed that there are 4 main approaches emphasised in the hidden curriculum. The curriculum is aimed at creating an academic and religious campus culture which includes (1) arranging scheduled delivery of seven-minute sermons (*kultum*) after *zuhr* prayer in the campus mosque. Usually a politician, scientist, religious figure, or bureaucrat visiting UIN is given the honour of delivering *kultum* after performing *salat* in congregation at the mosque; (2) instilling the habit
of fasting on Mondays and Thursdays and implementing \textit{khatmil qur’an} in each unit, faculty office and student affairs office; (3) invitation from UIN leaders to orphans in Malang city, and to participate in religious studies as well as to pay \textit{sadaqah} under the coordination of the \textit{zakat, infaq, sadaqah}, and \textit{waqf} institution (Elzawa) of UIN. This is done on Friday morning at 7 am; (4) deployment of students and lecturers in social activities for communities living around the mosques in the greater Malang area under the mosque-based student internship program. The purpose of this program is to provide academic, social, and religious services to communities in the Malang area (UIN Malang, 2018). All these activities were observed. Evidence was retrieved from official documents and confirmed with data from interviews.

SR integration in Islamic universities can be achieved through four stages: (1) conceptual; (2) institutional; (3) operational; and (4) architectural (Bagir et al., 2005). In the first stage, the goals of teaching-learning, research, and community service of a higher education institution must be reformulated into an Islamic context. In the second stage, faculties of natural sciences, humanities and religious sciences should be integrated in one campus. In the third stage, fundamental concepts in religious sciences should be incorporated into the curricula as a compulsory course at an introductory level in all campuses. The syllabi and textbooks used by all faculties must include Qur’anic verses relevant to the discipline, and students must pray together at the opening and closing of every learning activity in the classroom or at every practicum.

The interview sessions involving the subjects revealed that the management also adopted measures to implement SR in other contexts, including measures undertaken in other countries which involved promoting balanced growth of learners. Mahmud and Yusof (2018) assert that religious values could control behaviour and they affect people at work. Therefore, the formation of a personality based on the values of religion becomes a necessity. This can be done by developing contents in the curriculum syllabus. Sumbulah (2017) states that personality can be developed through the syllabi and routine activities at the Ma’had and in student bodies.

In general, the SR integration activities have a function to improve welfare and meet the development needs of the community.

General sciences are sourced from \textit{verses of kauniyyah}. The approach used is observational, experimental and logical reasoning because most of the research objects are facts and are operational, while religious knowledge comes from \textit{naqliyyah} verses (Al-Qur’an and Hadith). They, as objects of study, are more universal. For this reason, this university maintains that science and religion are integral to each other as described under the \textit{Tree of Knowledge} (ToK) metaphor. This metaphor has been embraced by the entire UIN population and, according to the subjects of this study, it has united everyone into pursuing the quest of total SR integration.
ToK is a metaphor for the balance development of science in UIN Malang. ToK symbolises one with strong roots, sturdy branches, durable small branches, shady leaves, as well as fresh and healthy fruits. Each part has a meaning. The root pictures the skill of Arabic and English, logic and philosophy, natural and social sciences. On the other hand, the branches describe sciences which come from al-Qur’an and Hadith, i.e., Study of al-Qur’an, Study of Hadith, Islamic thoughts, and the Prophet’s history. The small branches illustrate new fields of knowledge chosen by the academic community, such as medical science, philosophy, psychology, economics, sociology, and technical knowledge. The fruit of ToK refers to science, faith, righteous behaviour, and noble character. The concept of this ToK explains that studying what is within al-Qur’an and Hadith (root and branch) is fardh ‘ain, meanwhile learning the knowledge from human endeavours (small branches) is fardh kifâyah (UIN Malang, 2016).

The core of scientific studies in Islamic universities is al-Qur’an and Hadith. The variety of approaches, strategies and methodologies applied to underlie and inspire subsequent derivative sciences should be done in an integrated method involving the integration of classical Islamic sciences, natural and social sciences, humanities, and other contemporary sciences (Riyanto, 2012).

**The Methods of Integrating Religion in the Curriculum**

Data for this part was collected from observations, interviews and document analysis. It was found that in integrating SR within the curriculum, UIN Malang employs three methods, (1) internalisation method, namely internalisation of Islamic values (the Qur’an and the Hadith); (2) labelisation method, namely labelisation of science with Qur’anic verses and the Hadith; and (3) deductive method, i.e. use of al-Qur’an as a supreme means of deduction. The purpose of the methods is based on the SR integration at this university which is oriented toward the shaping of graduates with the four powers, namely “spiritual depth, moral nobleness, knowledge breadth and professional maturity”, so that they will have not only excellent and vast academic competencies but also meritorious personality and a noble character, referred to as "fikr, dhikr, and amāl saleh”.

The application of the integration method is supported by nine elements of *arkan al-jamiah* of UIN Malang, namely (1) reliable human resources (lecturers, staff, and students), (2) mosque, (3) *ma’had* (student dormitory), (4) classroom, (5) library, (6) laboratory, (7) office complex, (8) centre for art and sports development, and (9) financial resources (UIN Malang, 2016). The nine components are managed in an integrative manner, immersed into religion and spirituality.
The Internalisation Method

The interviewees confirmed that this method is implemented in Ma’had al-Jamiah (MJ), office complex and classrooms. In Ma’had, students are required to study the Quran, tafsir (exegesis), the hadith (records of Islamic tradition), and other classical Islamic books (yellow books) following a prescribed schedule. The ability in this area is considered essential for students so that they can successfully integrate SR within learning environments. The materials included in the Islamic sciences curricula which are used at MJ are adjusted to the curriculum of the study program or department. If a student fails at a specific Islamic content (pre-requisite) at MJ, they will not be eligible to register online for courses which require them to do this prerequisite first. Academic assessment is conducted online in an integrated manner.

The themes and materials studied at MJ are adjusted to the curricula of respective departments. This activity is called Ta’lim Afkar. They also participate in religious practices, observe the obligatory five salat in congregation, perform non-obligatory fasting on Mondays and Thursdays, and on the fourth Friday night every month, attend khatmil qur’an 30 juz and thematic religious studies along with the entire academic community (leaders of the university and faculties, lecturers and staff, as well as students).

In the office environment, all staff stop working when adhan (a call to worship) signals the time for zuhr and asr prayers. They head to the campus' mosque together to observe prayer in congregation, after which they listen to a seven-minute sermon called kultum. If a call of adhan is heard during a lecture, lecturers pause their activity until the call ends and permit students to attend prayers at the mosque if they wish to. In this way, religious culture is created within the campus environment.

This internalisation method (IM) emphasises the practice of students' knowledge. It is impossible to own experience without implementing it in one's behaviour. In this context, Hadith plays an essential role. The importance of this aspect is also outlined by Khozin (2016) who states that learning Islam does not only rely on book reading in the library and research in the laboratory. Rather, it needs to be completed by real activities at the mosque and ma'had.

Khozin's opinion is in line with the views of all subjects in this study, both from religious studies and science. They agreed that the ma'had is the best student dormitory model today. In the ma’had, knowledge is not only taught, but also practiced in life. In other words, the IM developed by UIN Malang has advantages that are useful for the development of Islamic civilizations in the future.

The religious atmosphere will strengthen and support academic development, as well as increase religious activities. Norzaman et al. (2017) explained that the integration of the values
of Asmaul Husna in design work, for instance, could encourage the user of the design to perform religious activities, and the design becomes an excellent design. Reciting Asmaul Husna can bring someone closer to Allah. Excellent design is work consists of creativity of the designer, customers, and users' satisfaction as well as God's pleasure. Therefore, the implementation of SR integration in various fields of science becomes a necessity in this era of information technology and globalisation.

**Labelisation Method**

The method is applied in academic activities of all faculties. Thus, the syllabi and lesson plans prepared by all lecturers incorporate religion into the sciences. Included into the syllabus and lesson plans are elements of religious values, Hadith characters and monotheism based on al-Qur'an and Hadith. The final projects of undergraduate and graduate students (thesis and doctorate dissertations) contain the integration, supported by the incorporation of Qur'anic verses and the Hadith.

All interviewees claimed that there was an organised effort to prepare the integration, especially newly hired and young lecturers on the Hadith approach in education at UIN. All interviewees mentioned that the development of science integration is done through workshops. The university issued a policy requiring all new lecturers at UIN Malang to attend the SR integration workshops and later complete the tasks given during the seminar, that is to develop lecture materials in accordance to the respective fields of expertise. The work will be assessed by the instructor team and will determine if the candidate passes. It is crucial for these young lecturers to be aware of the importance of SR integration within their courses. Failure to do so will lead them to fail in the tasks set at the workshop. This will put obstacles in their career path.

The labelisation method (LM) is actualised in several books written by lecturers of UIN Malang. Many books are composed from the awareness of this method. *Phenomenon of flora and fauna in the Qur'an* by Rasidy (2008), and *Mathematics in the Qur'an* by Abdusysyakir (2014) are some books which are written based on the awareness of the importance of LM in promoting SR integration.

According to the lecturers interviewed, LM has been unfairly criticised by researchers, some with strong scientific backgrounds. They seem to believe that LM merely attaches verses of al-Qur’an or Hadith and does not provide adequate analysis or critical discussion as to how the associations come about. They believe that the verses of al-Qur’an or Hadith should be studied more in-depth with observation, experimentation and scientific reasoning, and then be associated to the scientific studies. This method, they argue, should be the hallmark of SR integrative thinking.
LM applied in UIN Malang is a manifestation of the informative model. The models can be used in integrating science and religion: (i) the informative model which states that a certain discipline can be enriched with information from other disciplines to broaden their academic horizons, (ii) the confirmatory model which states that a certain discipline can be better if given confirmation and support from other disciplines, and (iii) the corrective model, which states that a certain general discipline requiring a dialogue with religious studies, or theories of religious science need discussion to make it more dynamic (Riyanto, 2012).

**Deductive Method**

The concept of integration in UIN Malang is based on tawhid (monotheism) which ends in tawhid. In other terms, it begins with basmalah and ends with hamdalah. Al-Qur'an as a revelation and Hadith are absolute truths that are believed by the entire UIN academic community so that they are deductive and that this will disseminate information to humans about natural phenomena. Therefore, al-Qur'an and Hadith are continuously studied so that new theories and scientific discoveries are produced, which are fundamentally sought from these revelations.

The deductive method (DM) is applied to research and community services. The Rector and Vice Rector emphasised in the interviews that research, community services and scientific books raising the theme of SR integration will be granted with financial aid by the university. To support and develop the second and third integration methods, UIN Malang established the Center for Religious and Scientific Studies. It is a body developed for implementing and developing SR integration. The programs run by this body are continually collaborating with the university's faculties, departments and other technical implementing units.

From the point of view of UIN Malang, al-Qur’an and Hadith provide knowledge for science development. There should not be a faculty of religious science to equate with such domains as ushuluddin, dakwah and adab. The university however, according to the Rector and Vice Rector, wishes that there must be faculties representing the sciences that use the integrative curriculum based on al-Qur’an and Hadith. Both sources are analysed through observation, experiment and logical thinking. This, according to the university management, makes the difference between the science faculties of UIN Malang with that of science faculties in other universities (Khozin, 2016).

Mudzhar et al. (2019) explained that integrating science in research needs to be done to inspire researchers as, methodologically, it can open and provide space for the application of the latest relevant approaches and interdisciplinary, multidisciplinary, and transdisciplinary methods. Therefore, research is directed at the development of religion, science, technology, arts and culture in an integrative way based on Islamic values. In the field of community service, the
implementation of science integration is directed at developing an understanding of diversity that is inclusive, tolerant and progressive in society. These activities can be carried out in collaboration with the government and NGOs. Sumbulah (2019) states that to reduce intolerance and radicalism in the community, preventive measures need to be taken within the family and community organisations so that they become loyal members of the family and not become members of radical groups. Zainuddin (2019, p. 2106) states that "one of the factors causing conflicts in religious life is shallow religious understanding. To achieve religious harmony, an integrated understanding of religion is required".

The three SR integration methods that are applied integratively offer higher education institutions a potential to develop the integration and produce graduates of great personality, who are professional and have ulama character (in other words, the creation of professional ulama).

**Conclusion**

The integration of SR within the curriculum (ISRC) is carried out by incorporating elements of values, character, and tawhid (monotheism) based on al-Qur’an and Hadith in each course and in the hidden curriculum. Each course and the relevant lesson plans contain elements of religious integration associated with the field of study. The ISRC at UIN Malang is done by using the internalisation method, the labelisation method and deductive methods. The integration employs an integrated curriculum and arkan al-jamiah. The three methods are applied to produce graduates with UA characters and to guide the development of science and technology in an integrated manner based on religious values and character.

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