



## The Effectiveness of Islamic Religious Education in the Universities: The Effects on the Students' Characters in the Era of Industry 4.0

Chairul Anwar<sup>1\*</sup>, Antomi Saregar<sup>1</sup>, Uswatun Hasanah<sup>1</sup>, Widayanti<sup>2</sup>

<sup>1</sup>Faculty of Education and Teacher Training, Universitas Islam Negeri Raden Intan Lampung, Lampung

<sup>2</sup>Postgraduate Program, Universitas Lampung, Lampung

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### \*Correspondence Address:

[chairul.anwar@radenintan.ac.id](mailto:chairul.anwar@radenintan.ac.id)

**Abstract:** The fourth industrial revolution (Industry 4.0) has become a major topic worldwide. The era of Industry 4.0 stimulates the advancement of science and technology through the Internet of Things (IoT), the Internet of Services (IoS), the Internet of Data (IoD) and Cyber-Physical Systems (CPS) which resulting in the creation of smart machines or autonomous robots. The era of Industry 4.0 gets rapid response worldwide, Indonesia is no exception. The Indonesian government appeals to the nation of Indonesia technology literacy in all aspects, especially on the aspect of education. Higher education is the driving force for change. One of the efforts undertaken by universities to prepare for the fourth industrial revolution can be done by character strengthening, so that science is not value-free and there is no statement that human as a robot with no conscience. Islamic religious education plays an important role in controlling the power of Industry 4.0 through character education. The result of this research is that character building is not only done in a formal education (educational institution), but non-formal education (parents, friends, and organization) also gives a big impact to the students. In facing the era of Industry 4.0, the character building from parents, educational institutions and government are needed.

## INTRODUCTION

Recently, the world is facing the fourth industrial revolution (Industry 4.0) in various fields (Yahya Muhammad, 2018), especially in education. The Industry 4.0 stimulates the advancement of science and technology (Janíková & Kowalíková, 2017), where the Internet of Things (IoT), the Internet of Services (IoS), the Internet of Data (IoD) and its supporting technologies serve as the backbone for Cyber-Physical Systems (CPS) and smart machines are used as promoters to optimize the production chain (Agolla, 2018; Crnjac, Veža, &

Banduka, 2017; Dittrich, 2016; Liao, Deschamps, Loures, & Ramos, 2017; Liao, Loures, Deschamps, Brezinski, & Venâncio, 2018). The existence of Industry 4.0 makes information technology as a base in unlimited human life and data (Gleason, 2018; Xing & Marwala, 2017). The fourth industrial revolution has characteristics (1) interconnection; (2) data; (3) integration; (4) innovation; and (5) transition. The components include: (1) big data; (2) autonomous robots; (3) simulation; (4) universal system integration; (5) industrial IoT; (6) cybersecurity; (7) cloud

computing; (8) additive manufacturing; and (9) augmented reality (Lavanya, S, & S, 2017; Motyl, Baronio, Uberti, Speranza, & Filippi, 2017). The fourth industrial revolution gives people freedom in accessing information without the barrier of space and time (Buer, Strandhagen, & Chan, 2018; Morrar, Arman, & Mousa, 2017; Thai, Thi, & Anh, 2017).

Every citizen needs to have the ability of digital literacy to be digital literate (Motyl et al., 2017). Indonesia must be able to respond quickly and adaptively to be able to compete with other developed countries (Prasetyo & Sutopo, 2018). Education plays an important role in the rapid development of technology, technological developments always have a positive and negative impact (Husaini, 2014). The impact is necessary to strengthen the character, so that science is not value-free and there is no statement that human as a robot with no conscience (Dalyono & Lestariningsih, 2017). This is in line with the goal of education which not only to transfer knowledge but also to form a noble person, and to form a strong character (Anwar, 2017; Saregar, Diani, & Kholid, 2017).

Character education is a national educational spirit. The character values contained in Pancasila include: (1) religious; (2) honest; (3) tolerant; (4) discipline; (5) work hard; (6) creative; (7) independent; (8) democratic; (9) curiosity; (10) the spirit of nationality; (11) love the homeland; (12) appreciate achievement; (13) communicative; (14) love of peace; (15) likes to read; (16) care about the environment; (17) social concerns; and (18) are responsible (Presiden Republik Indonesia, 2017). One of the guidance of strengthening the character is by providing Islamic religious education. Indonesia requires teaching Islamic religious education in every type and level of education (Kebudayaan, 2003).

At the level of higher education, Islamic religion course is in the cluster of personality courses that must be taken by all students (Surat Keputusan Dirjen Dikti Depdiknas Republik Indonesia, 2006). Implementation of higher education in Indonesia is not only managed by a single ministry but spread across several ministries including Ministry of Religious Affairs (STAIN, IAIN, UIN); Ministry of Higher Education (PTN and PTS); and ministries with ties to the STAN and IPDN services. At public universities, Islamic religious education only has 3 credit points, while at Islamic universities; it has 24 credit points or 19% of the number of credits taken.

Based on the description above, there are some considerations for why research on Islamic religious education and character education should be conducted: (1) the role of religious education and character education became the main topic of thought speculation; (2) religious education and character education will be able to fulfill a very important function in the era of Industry 4.0 (Faud, 2014). The importance of religious education and the strengthening of character need to be studied further. This study does not compare which institution is the best after implementing Islamic religious education, but it would like to describe the importance of strengthening the character through the development of Islamic religious education in an institution. This research is different with other previous researchers in terms that this research reviews the character building in the era of Industry 4.0 through Islamic religious education in two institutions, while the other previous research only on one institution.

## **METHOD**

This research used a qualitative descriptive method (Taquette & Minayo, 2017). The qualitative descriptive method

is intended to sharpen the data obtained to obtain objective and rational generalization to decide what appropriate strategic steps to describe the impact of Islamic religious education on the universities students' character in Lampung. The subject of this research was the sixth-semester students of Physics

Study Program in Islamic university (Universitas Islam Negeri Raden Intan Lampung) and non-Islamic university (Universitas Lampung).

Sources of data used in this study were: a survey, interview, and literature study. The following is the frame of thinking used by the researchers.

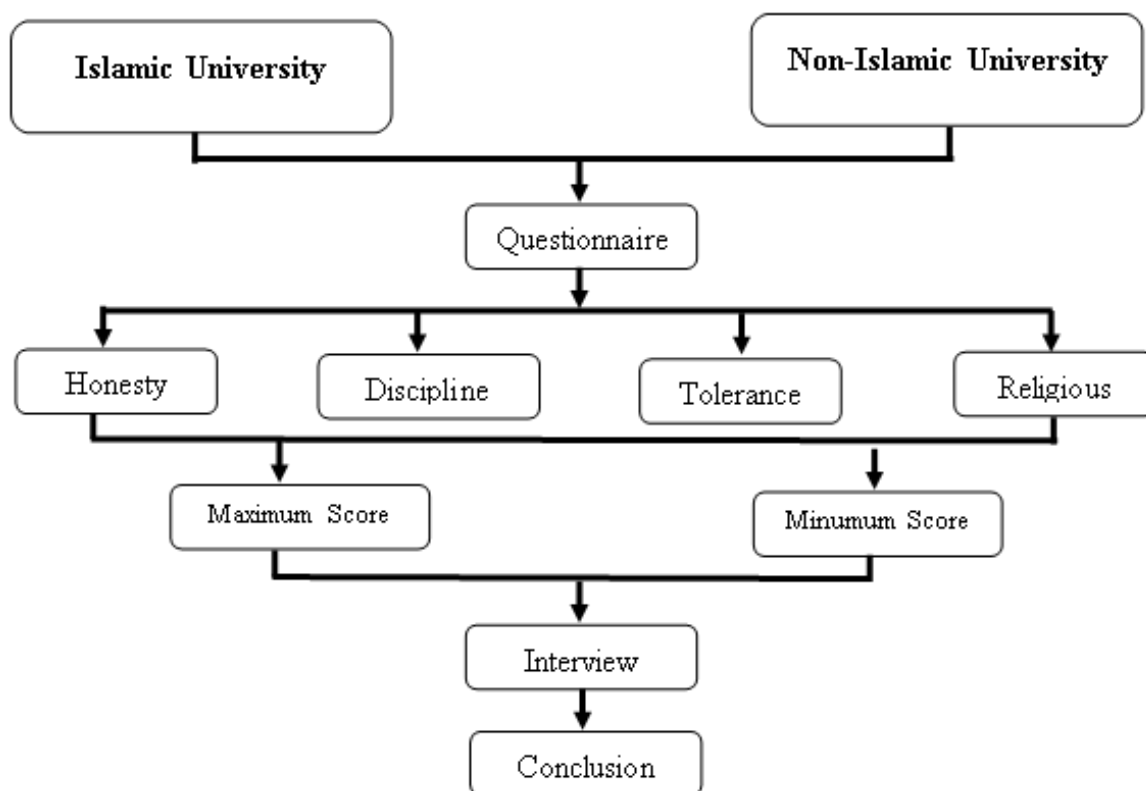


Figure 1. The frame of Thinking the Research

## RESULT AND DISCUSSION

Based on Presidential Regulation No. 87 of article 3 of 2017 on Character Strengthening Education (KDP) implemented by applying 18 characters education (Presiden Republik Indonesia, 2017), but this research focused on only four characters through Islamic religious education in the era of Industry 4.0, namely honesty, discipline, tolerance, and religious. The stages took by the researchers in collecting the research data as described in figure 1 by giving questionnaires to 22 students of Physics Study Program of Universitas Lampung

(University of Lampung) and 20 students of Universitas Islam Negeri Raden Intan Lampung (Raden Intan State Islamic University of Lampung).

Based on the questionnaire, the researchers then analyzed each character (honesty, discipline, tolerance, and religious) to determine which one is the highest and the lowest to obtain more detailed information, the students who got the highest and lowest score on each character in the interview by the researcher.

## **A. Honesty**

### **1. Non-Islamic University**

Based on interviews with students who got the highest honesty character score in Universitas Lampung, that there were 3 credits of religious subject taken during the undergraduate study: (1) the students once cheated because they were unsure of the answers, the impact of dishonesty was fear; (2) the students attended several student organizations where their honesty was trained and sharpened; (3) classroom learning by lecturers emphasized on honesty, but the assessment was subjective; (4) the factors that hinder honesty were circumstances, and the factor that supports students' honesty was fear of God.

Based on the results of interviews with the students who got the lowest honesty character score in Universitas Lampung, that there were 3 credits of religious subject taken during undergraduate study: (1) the students once cheated because they did not know the answers, the impact of dishonesty was not calm and felt guilty; (2) the students attended several student organizations where their honesty was trained and sharpened; (3) the lecturers' teaching was emphasized on honesty, but sometimes the assessment was still subjective; (4) the factors that hinder honesty were the circumstances, and the factor that supports students' honesty was fear of God.

Analysis of the two interviews results show that 3 credits of Islamic religious subject have an impact on the students' honesty, but dominantly the students' honesty is influenced by the environment such as student organization, lecturer, and fear of God.

### **2. Islamic University**

Based on the results of interviews on students with the highest honesty character score in Universitas Islam Negeri Raden Intan Lampung, that there

were 24 credits of religious subjects taken during the undergraduate study: (1) the students cheated because they did not know the answers and there was a chance to do it. The impact of dishonesty lies in lies and disputes with friends; (2) the students attended some student organization where their honesty was trained and sharpened; (3) lecturers emphasized on honesty, but sometimes the assessment was subjective; (4) the factors that hinder honesty were circumstances, and the factors that support student honesty were confidence and fear to lie.

Based on the results of interviews with students who got the lowest honesty character score in Universitas Islam Negeri Raden Intan Lampung, there were 24 credits of religious subjects in the course of undergraduate study: (1) the student cheated because they did not know the answers and there was a chance to do it, the impact of dishonesty was not calm and felt guilty; (2) the student attended some student organizations where their honesty was sharpened; (3) lecturers emphasized on honesty; (4) the factors that hinder honesty were circumstances, and the factors that support student honesty were fear of God.

The analysis of the two interviews related to the impact of 24 credits of Islamic religious subject on the students' honesty character shows that the students' honesty is influenced by the environment such as intra-curricular activities, student organization, lecturer learning, and fear of God, but the opportunity to cheat make the fear of God to be lower, the chance to do the dishonesty continues.

Based on the analysis of the two institutions, the impact of the religious subject is not a major factor in the development of the honesty character, but there are other factors including student organizations, parents, peers, lecturers, even self-awareness. In the era of Industry

4.0, honesty is one of the foundations that must be planted in a person to reduce the level of collusion, corruption, nepotism, and fraud. Honesty that is cultivated in a person will give impact as a person who can be trusted so that later he could become a leader of honest and high integrity (Muhasim, 2017).

## **B. Discipline**

### **1. Non-Islamic University**

Based on the results of interviews with students who got the highest discipline character score in Universitas Lampung, that there were 3 credits of religious subjects in the course of undergraduate study: (1) the students violated the rules because there were other necessities at the same time; (2) the students did not schedule the activity because they preferred the tentative activity; (3) the student joined several organizations that emphasized discipline; (4) classroom learning by lecturers emphasized discipline; (5) the factor that hinders discipline was laziness and the factor that support discipline was self-awareness.

Based on the results of interviews with students who got the lowest discipline character score, there were 3 credits of religious subjects in the course of undergraduate study: (1) the student violated the rules by accident; (2) the students made schedules for activities; (3) the students joined several organizations that emphasized discipline; (4) lecturer emphasized on discipline; (5) the factor that hinders the discipline was laziness and the factors that support discipline were the parents and the effects of indiscipline.

Analysis of the two interviews results shows that 3 credits of Islamic religious subject had an impact on students' discipline, but dominantly, student's discipline was influenced by self-awareness and environment such as students' organization and the lecturer.

The sense of laziness possessed by students was greater than self-awareness, resulting in the continuing indiscipline.

### **2. Islamic University**

Based on the results of interviews with students who got the highest discipline character score in Universitas Islam Negeri Raden Intan Lampung, there were 24 credits of religious subjects in the course of undergraduate study: (1) the student violated the regulation due to lack of time management; (2) the students made schedules for activities in order to be more timely; (3) the students attended several organizations that emphasized discipline; (4) the lecturer's learning emphasized on discipline; (5) the inhibiting factors of discipline were laziness and procrastination, the factors that support discipline were parental awareness and motivation.

Based on the results of interviews with students who got the lowest discipline character score, there were 24 credits of religious subjects in the course of undergraduate study: (1) the students violated the rules because of the lack of time management; (2) the student made a schedule for activities in order to be timely and to achieve the target activities; (3) the student joined several organizations that emphasized discipline; (4) the learning by lecturers emphasized discipline; (5) factors that hinder the discipline were laziness and procrastination and factors that support discipline were parental awareness and the effects of indiscipline.

The analysis of the two interviews related to the impact of 24 credits of Islamic religious subject on the students' discipline character is that the student's discipline domain is influenced by the environment such as students' organization and lecturer's learning. The environment and laziness are the contributing factors for the students' indiscipline to be continued.

Based on the analysis of these two institutions, Islamic religious subject is not a major factor in disciplinary development, but there are other factors such as student organizations, parents, peers, lecturers, and laziness. In the era of Industry 4.0, discipline is one of the foundations that must be planted in a person to reduce the level of laziness and to improve timely manner. Discipline is planted in a person will give the impact for a person to be timely so that someday become someone who does not spend his time on things that are less useful (Huda, 2012).

## **C. Tolerance**

### **1. Non-Islamic University**

Based on the results of interviews with students who had the highest tolerance character score in Universitas Lampung, there were 3 credits of religious subjects in the course of undergraduate study: (1) the students had peers of different religions, tribes, and cultures; (2) students tolerated peers of different religions, tribes, and cultures with respect and did not interfere with their worship; (3) the students could respect human rights because by respecting it they will also be respected; (4) the students joined an extracurricular organization that emphasized on tolerance; (5) the lecturers emphasized tolerance; (6) the inhibiting factor was tolerance and the supporting factor was having the same goal among the students.

Based on the results of interviews with students who got the lowest tolerance character score, there were 3 credits of religious subjects in the course of undergraduate study: (1) the students had peers of different religions, tribes, and cultures; (2) the student tolerated peers of different religions, tribes, and cultures with respect and did not interfere with their worship; (3) the student could respect human rights because by respecting it they will also be respected;

(4) the student joined student organizations that was emphasized on tolerance; (5) the lecturers emphasized tolerance; (6) the factor that inhibits tolerance was selfishness and the factors that support tolerance were peers and the environment.

Analysis of the two interviews results show that 3 credits of Islamic religious subject have an impact on student's tolerance character, but predominantly students' tolerance is influenced by the environment such as organization and learning activity from the lecturer.

### **2. Islamic University**

Based on the results of interviews on the students with the highest tolerance score in Universitas Islam Negeri Raden Intan Lampung, there were 24 credits of religious subjects in the course of undergraduate study: (1) the students had peers of different tribes and cultures; (2) students tolerated peers of different tribes and cultures by respecting them; (3) students can respect human rights as social beings; (4) students joined intra-student organizations that emphasized tolerance; (5) lecturer's learning emphasized on tolerance; (6) factors that inhibit tolerance were selfishness and different goals among peers and the factors that support tolerance were parents, peers, and the environment.

Based on the results of interviews to the students who got the lowest tolerance character score, that there were 24 credits of religious subjects in the course during undergraduate study: (1) the student had peers of different tribes and cultures; (2) students tolerated peers of different tribes and cultures with respect; (3) the students could respect human rights as social beings; (4) the students did not join any student organizations; (5) the lecturer emphasized tolerance; (6) factors that inhibit tolerance were selfishness and intentional goals and the factors that

support tolerance were parents, peers, and the environment.

The analysis of the two interviews related to the impact of 24 credits of Islamic religious subject on the tolerance character shows that the students' tolerance is influenced by the environment such as intra-curricular student organization, lecturer, and parents.

Based on the analysis of the two institutions, Islamic religious subject is not the main factor in shaping the tolerance character, but there are other factors such as extracurricular and extracurricular organization, parents, friends, lecturers, even in themselves. In the era of Industry 4.0, tolerance is one of the foundations that must be planted in a person to reduce the level of selfishness. The tolerance planted in a person will have an impact as a person with a high social spirit and democratic in all public decisions (Samho, 2014).

## **D. Religious**

### **1. Non-Islamic University**

Based on interviews with the students with the highest religious character score in Universitas Lampung, there were 3 credits of religious subjects in the course of undergraduate study; (1) Islamic religious subject affected religiousness; (2) the student applied religious values (fasting, prayer, and Sunna prayers); (3) the student joined intra-curricular student organizations that emphasized religion through science and association; (4) the impact of the organization was the better students' attitude; (5) the student kept promises because the promise is considered debt or responsibility; (6) the inhibiting factor were laziness, procrastination, and too many tasks and the factors that support the religiousness were seeking the blessings of God, peers, and parents.

Based on the results of interviews with students with the lowest religious character score, there were 3 credits of religious subjects that were in the course of undergraduate study: (1) the Islamic religious subject was less influential because it only discussed religious knowledge globally; (2) the students applied religious values (fasting, prayer, *halaqah* and Sunna prayers); (3) the students joined intra-curricular student organizations that was emphasized on religion through study and environmental factors; (4) the impact of the organization was the betterment of the students' attitude; (5) the students kept their promises because the promise is considered as an obligation; (6) the religious inhibiting factors were laziness, procrastination, and too many tasks and factors that support the religious were parents and peers.

Analysis of the two interviews results shows that 3 credits of Islamic religious subject have an impact on the students' religious character, but the students are dominantly influenced by the environment such as intra-student organizations, lecturers, peers, and parents.

### **2. Islamic University**

Based on the results of interview with the students who got the highest religious character score in Universitas Islam Negeri Raden Intan Lampung, there were 24 credits of religious subjects in the course of undergraduate study: (1) Islamic religious subject affected their religiosity; (2) students applied religious values (fasting, praying, honesty, not arrogant and *Sunnah* prayers); (3) the student joined intra-curricular student organizations that were emphasized on religion through study and *liqo*; (4) the impact of the organization was the betterment of the student's attitude; (5) the students kept their promises because the promise is debt or responsibility; (6)

the inhibiting factors was the environment and the supporting factors were religious environment and parents.

Based on the results of interviews with the students who got the lowest religious character, there were 24 credits of religious subjects in the course of undergraduate study: (1) religious subjects affected religiousness through knowledge; (2) the student applied religious values (fasting, praying, honest, not arrogant and *Sunnah* prayers); (3) the students did not join any organization; (4) the impact of not joining any organization was low understanding of religious knowledge; (5) the students kept their promises because a promise is a responsibility; (6) the factors that inhibit the religious were the environment and laziness and the factors that support religiousness were environment and peers.

The analysis of the interview results related to the impact of 24 credits of Islamic religious subjects on the religious character is dominantly influenced by the environment such as intra-curricular student organizations, lecturers, peers, and parents.

Based on the analysis of the two institutions, Islamic religious subject is not a major factor in the development of religious character, but there are other factors including organization, parents, friends, lecturers, even in themselves. In the era of Industry 4.0, religious is one of the foundations that must be cultivated in a person to increase faith. Religiousness planted in a person will give impact as a person of faith and high morality so that later can filter the freedom in using social media (Meria, 2012).

The results and discussions describe that the Islamic religious subject in Islamic university consists of 24 credits and non-Islamic university is only 3 credits although both universities have significant differences in the credit points,

but after the research through survey and interviews were conducted, the students' character is not fully influenced by the learning of Islamic religious subject but there are many factors including, environmental factors that include organization, parents, colleagues, and boarding school environment. As we know that the students spend more time at home than in educational institutions, thus the character building is not entirely the responsibility of educational institution (formal education), but need teaching from non-formal education namely parents, friends, and organization. Because parents are the first source of education for students, it is necessary for them to do better character learning. This is in line with the research of Aziz, that state the Islamic religious subject is not the main factor affecting the character of students, but there are other factors which are extracurricular activities (Aziz, 2011) and Sulaiman states that the Islamic education subjects can be a source in strengthening the human resources (Sulaiman, 2015).

## CONCLUSION

Information and technology have become the basis of the unlimited data and human life in the era of Industry 4.0. These positive and negative impacts are necessary for strengthening the characters, so that science is not value-free and there is no statement that human as a robot with no conscience. Islamic religious education in public universities (non-Islamic university) and Islamic universities is not the only to foster the students' character development, but there are several factors that are also needed for character building, namely parents, friends, organization, and the environment.

Building the characters is not entirely the responsibility of educational institution (formal education), but need it also needs guidance from non-formal



education (parent, friend, and organization). Parents are the first educators for students, so they need to do a better character building by making sure that their children could get along and communicate with the positive environment.

Students spent more time communicating in non-formal education (parents, friends, organizations and the environment) than formal education (educational institutions). So this requires the non-formal education to provide better character development and it also needs special attention from all stakeholders who are authorized to strengthen the characters of the students in order to realize the function and purpose of national education in Indonesia.

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