Correlation of Human Movement System Material in Salat Movement: Study of Integration of Science and Religion

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ABSTRACT
Learning science of the human movement system material level that must be achieved by students is knowledge, understanding, and application. Based on interviews conducted, to reach that level at Madrasah Tsanawiyah Negeri Lumajang using an integration method between the material of the human movement system and salat movements, even though it is only macro. The focus of the problem is: 1) the relationship between the material system of motion in humans and the movement of salat. 2) the impact of the material relationship of the motion system on the human movement of salat. The type of research used was descriptive qualitative with data analysis techniques using the Miles and Huberman method. The results of the study show that there is a relationship between the material of the motion system in humans and the movement of salat. Among them when takbiratul ihram is related to the upper arm movement system. Meanwhile, the impact of the material relationship between the human movement system and salat movements: 1) keep the muscles from being stiff, prevent bone disease and maximize the work of existing joints. 2) bring up religious character for students at MTsN 1 Lumajang.

Keywords:
Human movement system; Salat movement; Integration of science; Religion;

INTRODUCTION
Indonesia is a country that has the largest Muslim adherents in the world. Islam itself is a religion that contains revelation and contains monotheism or the oneness of God revealed by Allah SWT to the Prophet Muhammad SAW as the last messenger and applies to all humans, under any circumstances and conditions whose teachings cover all aspects of human daily life (Jamal, 2011). This is explained in the Qur’an Surah Al-Imran: 19 which means:

“Indeed, the religion (that is pleased) with Allah is only Islam. Those to whom the Scripture was given did not differ except after knowledge had come to them, out of envy among them. Whoever disbelieves in the verses of Allah, then indeed Allah is swift in reckoning.” (Kemenag RI, 2009)
However, many Muslims in Indonesia today do not carry out the recommended religious orders in full and even tend to abandon them. This is due to several underlying factors. One of them is that Muslims in Indonesia have embraced Islam since birth, not because of the wishes of the people themselves. In fact, if you look more deeply if you do what is commanded in the teachings of Islam, there are many lessons contained in it, especially in the face of the current era of globalization. Many people realize that globalization has a positive impact, including more sophisticated communication, faster transportation and others. However, without realizing it, globalization also has many negative impacts (Nurhaidah, 2015). Therefore, the government is thinking of ways to minimize the negative impacts of globalization through education. Education itself is one form of activity that is very useful in an effort to improve human resources through the transfer of knowledge, expertise and values contained in life in order to equip students to reach maturity and personal maturity (Muchlis, 2006). As for when viewed further, the functions of education in Indonesia include: as a developer of one's abilities and forming character and national differences that are more dignified in the context of educating the nation's life, and making people who believe and fear God Almighty, have noble character, are healthy, knowledgeable, capable, creative, independent and become a democratic and responsible citizen. From the description above, it can be concluded that education is very important to do.

There are several previous studies examining ways to reduce the negative impact of the globalization era. According to Rozi Azam in his research, he stated that the way to reduce the negative impact of globalization is to carry out character education through internalizing reading and salat movements. The results of his research are that students can instill characters in the form of piety, low self-esteem (Tawaddlu), and Al-Ukhwa (mutual brotherhood) (Azam, 2019). In addition to research conducted by Rozi Azam, there is also research conducted by Siti Nindoru Rohmah which reports that a good way to reduce the negatives of globalization is to implement the habit of praying in congregation for the formation of the character of students. The results of his research are that students raise characters in the form of traits: discipline, tolerance, patience, order, religion, honesty, independence, responsibility and courage (Rohmah, 2019). In line with that, there is also research conducted by Imam Suotomo who said that one way so that Muslims do not fall into the negative of globalization which is contrary to the teachings of Islam, it is necessary to carry out a program called character education, especially to improve morals first (Sutomo, 2014). Based on what previous researchers have done as stated above, this time the author also makes research on how to reduce the negative impact of globalization, namely by integrating science and religion with the title "Material Analysis of Human Movement Systems in the Salat Movement".

The movement system itself is a material that is taught at certain school levels. When viewed from junior high school (SMP) or Madrasah Tsanawiyah (MTs). This material is taught in the eighth semester odd semester as stated in the Core Competencies and Basic Competencies in the K13 curriculum. As for it contains material on joints, types of bones, types of muscles, as well as disorders of the movement system and efforts to maintain a healthy movement system in humans. The level that must be achieved by this material by students is knowledge, understanding, and application. Based on interviews conducted by the author to reach the level that is in accordance with the above, Madrasah Tsanawiyah Negeri Lumajang tried to apply it in salat activities, however, they just did it and did not know the wisdom contained in it in depth. One example is the movement when the takbiratul ihram position is standing upright by raising both hands, at this time the shoulder muscles heat up so that the flow of oxygen-rich blood becomes smoother. In addition, when both hands are clasped on the front abdomen or lower chest, it can reduce the risk of joint disorders,
especially in the upper body. Based on the explanation above, when studied more deeply about the movement system in humans, it turns out that it has an interrelated relationship with salat movements.

Salat comes from Arabic which has the meaning of prayer, this means logically the utterances in salat mean prayer for goodness and praise. In essence, salat means hoping sincerely to Allah and fearing Him and giving rise to the majesty, greatness and perfection of Allah SWT. As for the syara’ side, salat has several meanings including: prayer is a series of words and deeds that begins with takbir and ends with greetings with which humans worship Allah, according to predetermined conditions, salat also means facing Allah with full fear and respect for His majesty and greatness and the perfection of His power (Zaitun, 2013). The position of salat in Islam as worship that occupies an important position that cannot be replaced by any worship. Salat is a pillar of religion in which prayer is generally divided into two types, namely: salat that are obligatory or obligatory to be performed and salat that are prescribed or may not be performed.

Salat has a lot of wisdom that can be taken from the form of posture, the rhythm of the body’s rhythmic movements when salat. Judging from the movement, the salat begins with takbir and ends with greeting, if the salat is done well, the movement certainly provides good health benefits for the body’s movement system and other internal organs. One example is the movement of prostration in salat can facilitate blood flow to the brain and there are many other examples. So this salat movement can be said to symbolize to humans that humans are not always easy and humans are not always victorious. However, to achieve this requires educators who have the ability to integrate religious subjects and general subjects such as science lessons. From the above background, the author informs whether there is a correlation between the human movement system in the salat movement.

Based on these problems, the focus of the problem is: 1) what is the relationship between the motion system material in class VIII humans with salat movements during the takbiratul ihram, bowing, prostration, sitting positions between the two prostrations and greetings? 2) What is the impact of the material relationship of the motion system on class VIII humans with salat movements during the takbiratul ihram position, bowing, prostration, sitting, between two prostrations and greetings? Meanwhile, the objectives are: 1) to describe the relationship of the motion system material in class VIII humans to the salat movements during the takbiratul ihram, bowing, prostration, sitting between two prostrations and greetings. 2) describe the impact of the material relationship of the motion system in class VIII humans with salat movements during the takbiratul ihram position, bowing, prostration, sitting between two prostrations and greetings. This research needs to be done considering it has great benefits. Among the benefits in question are increasing knowledge in the world of education, especially about the importance of integrating science and religion, namely the material for the human movement system for class VIII with salatr movements.

METHODS
The approach taken includes qualitative research. The type used is a qualitative descriptive. Research Locations at MTsN 1 Lumajang (the location was chosen due to the condition of the school that there is regular salat monitoring). Research subjects were selected based on purposive sampling technique. The considerations used in determining the subject are based on several things: 1) Class VIII students of MTsN 1 Lumajang have received material on the human movement system but do not know that in real life the human movement system is related to salat movements. 2) Natural Science teachers at MTsN 1 Lumajang MTsN 1 who teach in class VIII because they understand more about the material about the human movement system and know the cognitive abilities and character of class VIII students. 3) Deputy head of student affairs at MTsN 1 Lumajang because he understands
the condition of students when carrying out religious and general activities. And play a role in
the formation of programs that are in accordance with the vision and mission of MTsN 1
Lumajang. The data collection technique used:
1) Questionnaire given to students to find out the impact caused by the relationship between
the motion system material and the salat movement.
Questionnaires were distributed to 16 class VIII students who had followed the material on
the human movement system. The questionnaire consists of 25 questions that have been
adjusted to the desired indicator. The following is an explanation of how to evaluate the
questionnaire:

<table>
<thead>
<tr>
<th>Statement</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA: Strongly Agree</td>
<td>5</td>
</tr>
<tr>
<td>A: Agree</td>
<td>4</td>
</tr>
<tr>
<td>N: Neutral</td>
<td>3</td>
</tr>
<tr>
<td>D: Disagree</td>
<td>2</td>
</tr>
<tr>
<td>STS: Strongly Disagree</td>
<td>1</td>
</tr>
</tbody>
</table>

After determining the rubric for the assessment of the questionnaire, the scores obtained
by each student from the 25 questions are added up. The next step after knowing the total
score of the students is.
Continued to calculate the percentage value with the following formula:

\[
Mark = \frac{Total\ score}{score} \times 100\%
\]

2) Interviews addressed to: students, natural science subject teachers, deputy head of student
affairs.
3) Documentation, including: documentation of activities during the online salat monitoring
process, documentation of material delivery regarding the relationship between the human
movement system and salat movements, documentation of research activities.
The data analysis technique used the Miles and Huberman method which consisted of: 1) data
collection, 2) data condensation, condensation is a process: a. selecting, when conducting the
selecting, the author is really selective in determining more important information or data for
further analysis, b. focusing, this stage, the authors focus the data according to the focus of
the research, c. abstracting, at this stage, the author summarizes the data that has been
focused on the most important and most needed data, d. Simplifying and transforming At this
stage, the abstracted data will be simplified and transformed in various ways, namely through
a brief summary, classifying the data in a broader pattern, and so on. In this study, the authors
simplify and transform the data that has been abstracted. 3) data display. 4) drawing
Conclusions(Sugiono, 2017). Meanwhile, to see the truth of the data using triangulation
techniques and sources. Triangulation of techniques by checking the data that has been
obtained through several techniques, namely interviews, questionnaires (questionnaires), and
documentation. Source triangulation is carried out to test the credibility of the data by
checking the data that has been obtained through several sources.

RESULTS AND DISCUSSION
There are several things found in this study. The findings are:
1. There is a connection between the human movement system and the salat movement seen
   in terms of bones, muscles, and joints. The following is the explanation:
   a. Takbiratul Ihram
      The correct position of takbiratul ihram is to stand upright, then raise both
      hands to be parallel, then fold them in front of the abdomen or lower chest.
The movement of the position of takbiratul ihram when standing upright using all types of hard bones, namely: femur (femur), calf bone (fibula), knee bone (patella), dry bone (tibia), and the vertebrae accompanied by the toes (phalanges).

For standing movements this is included in the extension movement where the foot position is straightened. The benefit of this standing movement alone is to prevent cholesterol disease. In addition, according to the source, standing position means supporting the whole body on the soles of the feet, this can add uniqueness to the implementation of salat. Meanwhile, when lifting both hands in parallel, the part of the bone used is the upper arm bone (humerus), the radius (radius), the ulna, the wrist bone (carpal) and the palm bone (metacarpal). The types of bones mentioned include the types of hard bones. In addition to the bones in the movement of takbiratul ihram lifting both hands in parallel also using the joints. The joints in question are: hinge joints and swivel joints. A hinge joint is a joint in which both ends of the bone are hinged and have a single pore between the bones so that it can be moved in two directions. The hinge joint when performing the takbiratul ihram movement that is detected is the part of the joint between the forearm bone and the shaft bone. While the rotary joint in biology is a joint in which the end of the bone is able to rotate the end of the bone with the end of the other bone so that it is possible to be moved in a rotational motion with one shaft and its movement in all directions. The joints rotate when performing the takbiratul ihram movement that is used between the shaft bone and the pelvic bone. In addition, during the lifting movement of the hand is also associated with the triceps and biceps muscles. The condition when raising the hand, the triceps muscle relaxes while the biceps muscle contracts.

The position of rukuk is the position of the fingers. The hand is right on the knee and not on the thigh, or calf. As for the state of the body, the position of the back
must be flat (if water is placed in a glass on it, the water will not spill), the state of the head is not too up or up down, but must be straight. The position of the bow forms an angle of 90°.

The position of rukuk as described above for the bones that follow it, namely: spine, collarbone, arm bone (humerus), pelvic bone (radius), sternum (ulna), and pelvic bone. The way the muscles work when doing rukuk is antagonistic, that is, the opposite. The joint that is related to the position of this bow is a sliding joint, because when bowing the atar segment of the spine or spinal cord undergoes a shift. This bowing movement has the benefit of preventing kyphosis (spine that is too bent backwards) and lordosis (spine that is too bent forward). In addition, the bowing movement is also related to the sensory and motor nerves. Sensory nerve cells function to carry stimuli from the senses to the brain or spinal cord, while motor nerve cells function to carry stimuli from the brain or spinal cord to the muscles or glands of the body, commonly called driving nerve cells.

c. Prostrate

When prostrating, the position of the body is a package forehead together with the base of the nose, placed on the place of prostration. While the soles of the hind feet must be close and upright. For the thighs should not be bent, not adjacent to the calves or abdomen. The position of the hands is stretched, if possible, the hands are stretched from the hands that are parallel as well as the position of the fingers when takbiratul ihrom and the fingers are not close together, nor are they very stretched. The head is positioned between his palms. When prostrating, you must be strong and not lazy.

The forehead is a hard bone and belongs to the type of short bone. While the tip of the nose is one type of cartilage. On the forehead there is also a meeting of nerves that are between the eyes and the nasal bones. For the soles of the feet used during this prostration position consists of short bones. While the thighs themselves belong to the group of pipe bones. At the time of prostration is also related to the triceps and biceps muscles. While the joints associated with the prostration movement are: hinge joints connected between the joints between the toes. In addition, this position also uses a bullet joint between the pelvic floor and the femur. The prostrate movement when drawn the conclusion relates to the axial: the skull, spine, sternum and ribs. In addition axial movement of the bow also uses the appendicular, namely: collarbone, shoulder blade, collector and shaft and hands and feet. The nerves that are between the eyes and the nasal bones, when the prostration position is not thinking about anything and just focusing on hoping for God's grace then waking up from prostration will definitely be calmer. because the prostration position launches blood to the upper body. The more smoothly it certainly provides an adequate supply of oxygen for the heart and brain. So that brain cells can function better.

d. Sitting Between Two Prostrations

The condition of the body that needs to be considered when sitting between two prostrations is: the gaze is straight towards the place of prostration, the position of the body is sitting right on the left foot, the right foot is straight with the fingertips and right towards the Qibla, the right palm is positioned above the right thigh and the left palm is above the left thigh.

More use of the appendicular namely the hard bones of the legs. Such as femur, calf bones, and hamstrings. In addition, there is also a connection between the kneecap.
e. Greetings

This greeting movement should move his head to the right until the white on his cheeks is visible, then turn his head also to the left until the white on his cheeks is visible by the person behind him.

The part of the skeletal system that is affected by the salutation movement is axial. Especially the skull. In addition, this movement also has a relationship between sensory and motor nerves and is also related to the rotator cuff. A Rotary Joint is a type of joint in which the end of the bone can rotate the end of one bone with the end of another bone. The part in question is the joint between the neck bone and the atlas bone.

2. There is an impact relationship between the movement system and salat movements seen in terms of bones, muscles, and joints (Jumini & Munawaroh, 2018). Here’s the explanation:

a. Impact on Health

1) Takbiratul Ihram

The position of takbiratul ihram in addition to relating to the human movement system can be for example with a 2-way vector that forms an angle or direction of 0 degrees. This position is claimed to have many benefits including: it has a positive impact on body organs, especially the lungs, chest cavity septum and lymph nodes and helps facilitate lymph blood flow and arm muscle strength (Jumini & Munawaroh, 2018). In addition, the attitude of standing upright with the attitude of the feet supporting the whole body weight. In this state, the body is in its anatomical position. So all muscles, bones and joints are in a passive position (not moving) causing relaxation (Ismail, 2016). The state of takbiratul ihram is recommended standing up because it is considered to have good benefits. This is in line with research conducted by Arief Hendrawan that the correct standing position can lead to increased flexibility of the hamstring muscles (back of the thigh muscles) (Arief Hendrawan, 2019).

2) Rukuk

The position of this ruku is like two perfectly perpendicular lines. Perfection is likened to an angle of 90 degrees. So for example a straight back is symbolized by the x-direction vector and straight legs up to the thigh are symbolized as y, while the buttocks where symbolized the meeting between the two straight lines of the thigh with a straight line of the back. The state of the 90 degree angle is often used by building architecture at the corner of doors and windows because this angle has a strong and sturdy character. Based on the results of interviews with Natural Science teachers at MTsN 1 Lumajang that the bowing position is directly related to the nervous system, this is in line with research conducted by Jumini and Munawaroh 2018. The movement when bowing is believed to help the health and work of the cerebellum because the brain is central nervous system. In addition, this position is useful for maintaining the perfect position and function of the spine (corpus vertebrae) so as to help avoid bone disorders such as scoliosis and lordosis.

3) Prostration

This position is prostration, namely: two palms, two knees, two legs, forehead and nose. Of course, this statement is in accordance with the research conducted by Sri Jumini and Munawaroh. In addition, his research also provides an understanding of the benefits of the prostration movement. The benefits in question are: The prostration position is useful for pumping lymph to the neck, facilitating oxygen-rich blood into the brain which makes the mind fresh,
increasing the endurance of blood vessels in the brain, can restore and maintain the abdominal organs in their place again. (fixation), for women can beautify the shape of the breast and improve the function of the mammary glands in it, and be healthy. In line with the research conducted by Sri Jumini and Munawaroh. Research conducted by Ismail also explains that this movement essentially has the benefit of causing a reflection and relaxation effect for the muscles and nerves of the body, so that the effect is a sense of surrender to Allah SWT (Ismail, 2016).

4) Sit Between Two Prostrations
The wisdom of sitting between the two prostrations if done correctly according to research conducted by Jumini and Munawaroh are: being able to improve the reproductive organs, especially in the perineal, sitting Tawaruk is very good for a man because the heel condition suppresses the flow of the bladder (urethra), male genital glands (prostate) and the vas deferens. This posture is also very good at preventing impotence. Variations in the position of the soles of the feet in iftirasy and Tawaruk make all the leg muscles stretch and then relax again. This harmonious motion and pressure can maintain the flexibility and strength of the human organs of motion.

5) Greetings
This greeting movement is the closing movement of the salat movement. However, this movement should never be underestimated because basically it has benefits that are no less extraordinary. According to the researcher's analysis, this movement has the benefit of being able to tighten the cheeks, it certainly agrees with the research conducted by Jumini and Munawaroh which revealed that the greeting movement maintains facial skin firmness while also explaining other benefits such as: the greeting movement relaxes the muscles in the area around the neck and head, improve blood flow to the head thereby reducing pain in the head and providing comfort to the muscles and neck bones. Because the neck has a lot of nervous system tissue and blood vessels whose function is to combine the head with the body.

b. Impact on the Improvement of Students' Religious Character
How to find out this impact, the author uses a questionnaire. The following is the result of the percentage value obtained using the formula listed on the previous page:

<table>
<thead>
<tr>
<th>No</th>
<th>Student Name</th>
<th>Percentage Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mohammad Hasbi Ishaqi</td>
<td>64%</td>
</tr>
<tr>
<td>2</td>
<td>Devina Rasty Az Zahra</td>
<td>75%</td>
</tr>
<tr>
<td>3</td>
<td>Muhammad Akbar Isman Maulana</td>
<td>80%</td>
</tr>
<tr>
<td>4</td>
<td>Muhammad Abu Dzar Al Ghifari</td>
<td>77%</td>
</tr>
<tr>
<td>5</td>
<td>Rayhanuun Aura Chantiqa</td>
<td>78%</td>
</tr>
<tr>
<td>6</td>
<td>Nanda Airita</td>
<td>70%</td>
</tr>
<tr>
<td>7</td>
<td>Muhammad Ibinurossi Chamdani</td>
<td>75%</td>
</tr>
<tr>
<td>8</td>
<td>Zahir Salman Putra Harianto</td>
<td>66%</td>
</tr>
<tr>
<td>9</td>
<td>Roikhatul Janah</td>
<td>82%</td>
</tr>
<tr>
<td>10</td>
<td>Rifka Khoirina Malik</td>
<td>78%</td>
</tr>
<tr>
<td>11</td>
<td>Lilia Alisia Fahtrin</td>
<td>74%</td>
</tr>
<tr>
<td>12</td>
<td>Myisa Shakirah Felishany</td>
<td>72%</td>
</tr>
<tr>
<td>13</td>
<td>Reytyas Meidita Salsabila</td>
<td>94%</td>
</tr>
<tr>
<td>14</td>
<td>Reva Cahya Feliya</td>
<td>77%</td>
</tr>
<tr>
<td>15</td>
<td>Faiza Nurul Ita</td>
<td>78%</td>
</tr>
<tr>
<td>16</td>
<td>Hijriyah Imani</td>
<td>73%</td>
</tr>
</tbody>
</table>
Because the percentage value data has been found, then the author relates it to the rubric for assessing religious attitudes that has been made previously. The following is an indicator of the range of values:

**Table 3. Rubric of Assessment of Religious Attitudes**

<table>
<thead>
<tr>
<th>Percent Value Scale</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>51-100</td>
<td>Learners have an understanding of the procedures for praying, students understand the material for the movement system, there are religious characters that appear</td>
</tr>
<tr>
<td>0-50</td>
<td>Students do not have an understanding of the procedures for praying, students don't understand the material of the motion system, there is no religious character that appears</td>
</tr>
</tbody>
</table>

Based on data from table 3, the percentage of existing religious attitude values, it can be seen that most students have a percentage above 50% this indicates that students on average have an understanding of salat procedures, students understand the motion system material, and the character emerging religion.

It turns out that based on the data that has been obtained, salat itself is very influential in the formation of the religious character of students. However, it is certainly not easy to instill the desired religious character. Because in instilling the character of students at the Madrasah Tsanawiyah level, they first use coercion which has long become a habit. At MTsN 1 Lumajang itself, the inculcation of religious character starts from the congregational Duha salat to the congregational Duhur salat. This statement is in line with research conducted by (Renawati, 2020) which reveals that salat is a form of worship that can increase the religious character of students apart from other worship such as alms, dhikr and others.

**CONCLUSION**

The conclusion of this article is as follows: There is a positive relationship between the material system of motion in humans with salat movements during takbiratul ihram, bowing, prostration, sitting between two prostrations and greetings. For example, when doing takbiratul ihram, the affected part of the movement system is the axial namely the upper arm and the relationship with the triceps and biceps muscles. Meanwhile, the significant impact arising from the existence of a material relationship between the motion system in humans and salat movements during takbiratul ihram, bowing, prostration, sitting between two prostrations and greetings are: stiffness, preventing bone disease and maximizing the work of existing joints. Second, with the existence of this relationship, it turns out that it can also bring up religious character for students at MTsN 1 Lumajang, this is in accordance with the calculations that have been carried out with the final result above 50%, which means that students have an understanding of prayer procedures, students understand the motion system material, there is a religious character that appears.

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