

ENHANCING LIFE SKILL AT ISLAMIC BOARDING SCHOOL: A REVIEW OF HYDROPONIC IMPLEMENTATION

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ABSTRACT

Santri or Islamic boarding school (pesantren) students must be guided so they have life skills. One of the efforts that can improve personal skills is farming activities. However, the student's interest in farming is still low due to the student's perception of being dirty and time-consuming. Therefore, it is necessary to study hydroponics as a soilless planting system to increase student interest in farming. This literature study aimed to know the students of Islamic boarding schools' interest in using hydroponic technology. It was a qualitative descriptive research design with a literature review approach. The databases used in this literature study were Pro-quest, Scencedirect, Researchgate, and Google Scholar. Five out of 218 articles were found in the database. After the analysis of identification, screening, and eligibility processes, based on inclusion and exclusion criteria and the research objective, it can conclude that hydroponic technology increased the interest in farming of Islamic boarding school students. The student's interest indicators are: a feeling of pleasure, attention, involvement, and interest in hydroponic farming.

Keywords: Hydroponics; Islamic boarding school students; life skills

1. INTRODUCTION

Islamic boarding schools must prepare their students to live in a global world. They are also required to improve their quality and provide education in line with the times (Koswara, 2014). Santri are mentored according to their talents to have expertise and abilities in *life skills* (Abidin, 2014). The implementation of life skills-based Islamic education in various forms of activities, such as courses, training, and providing a place to apply the skills and expertise of the students (Ahmad & Mukamilah, 2020). Through the provision of personal independence, students will be more productive and competitive in an increasingly complex future (Prayoga A. et al, 2019).

One of the efforts to support life skills learning is through farming activities in the pesantren area or on land provided by the pesantren. However, not all students like farming activities (Mukholisah. N., 2018). As Indah said, students' perceptions of farming activities are still unfavorable, which results in little interest in farming (Indah, 2014). The phenomenon of low interest in farming is due to the perception that farming is synonymous with being dirty and tiring. So, it is considered less prestigious. This activity is tiring because one has to work in an open space and have direct contact with the weather, rain or shine (Maghfiroh & Hidayatullah, 2018; Werembinan et al., 2018). Within the scope of school education, farming activities are generally not supported by the availability of adequate facilities, a large land area, or an interesting learning system (Kadek et al., 2019). Thus, alternative efforts are needed to support *life skills* through farming activities. One alternative way to grow crops without using soil is to use a hydroponic system as part of modern farming.

Hydroponics is soil culture that uses water that is enriched with nutrients that plants require (Naik et al., 2015). Soil is not the only basic material used as a plant medium. What is contained in the soil and then absorbed by the roots is what plants need. It means that without soil, a plant will grow if there is enough water and nutrients.

Numerous studies have shown that using hydroponics can increase students' interest in farming. As in research Priyono (2017) who conducted research at three different Islamic boarding schools and got the same results, namely the high enthusiasm of the students in horticultural cultivation with a hydroponic system. Muis et al., (2018) his research at the Al-Qur'an Islamic boarding school Babussalam Foundation resulted in the high interest of the students to be active in vegetable cultivation activities with the hydroponic system, both individually and in groups. In the study, there are advantages to hydroponic farming, that it does not require large areas, and that it is expected to continue.

Hydroponics is an interesting applicable skill, because, apart from having high aesthetics, it also requires tenacity in its cultivation (Zulpikar & Syamsi, 2018) Because the medium used is water with adjustable nutrient levels, hydroponics may be the best option for increasing food security through straightforward techniques in small areas. In addition, hydroponics can teach and train people to practice modern agriculture without affecting the environment. According to the needs (Tallei et al., 2017)

According to Suryani (2015), hydroponic technology is thought to be a solution for attracting the millennial generation's interest. Interest is a preference, a sense of interest, and attention (Slameto, 2010). According to Renninger (2000), interest influences three important aspects of one's knowledge: attention, goals, and level of learning. In addition to being a driving force for knowledge, interest also influences attitudes and is influenced by motivation, environment, and personality (Agus Kurniawan, Muhammad Khafid, 2016). It is very important to provide students with relevant skills that work according to their daily needs (Wahab, 2012).

Based on this description, researchers are interested in learning about the literature study on increasing interest in farming students using hydroponic technology through literature studies. The purpose of this literature study is to determine the interest in farming among Islamic boarding school students.

2) METHODS

Your methods tell readers how you conducted your study. It includes information about your informants (respondents), population, samples, methods and equipment. Typically, methods are written in past tense, and they use a lot of passive voice. Identification of research questions in the literature review using the PICO method (P = Population, I = Intervention, C = control, O = outcome) (Eriksen & Frandsen, 2018; Mamédio et al., 2007). The PICO in this article are as follows:

- P : Santri, santriawan, female students, Islamic boarding school students, Islamic boarding school students
- I : Hydroponic technology, hydroponic systems
- C : -
- O : Interest in hydroponic farming, interest in planting, interest in gardening, interest in vegetable cultivation, interest in plant cultivation

Based on this terminology, the research questions are based on "PICO". What is the interest in cultivating students using hydroponic technology?

The preparation of the review literature comes from searching for scientific research articles spanning 2015-2020 using the Pro-Quest, Scencedirect, Researchgate, Google Scholar databases. A search on the Pro-Quest database by entering the first keyword *hydroponics* "OR" *hydroponics* "OR" *hydroponics technology* "OR" *hydroponics system* found 5,503 articles. The second keyword is interest in

farming “OR” *interest in farming* “OR” *interest in vegetable cultivation* “OR” *interest in cultivation* “OR” *interest in plant cultivation* “OR” *interest in plant cultivation* found in 6,960 articles. entering the three keywords *boarding school* "OR" *boarding school* "OR" *boarding school students* "OR" *boarding students* "OR" *students* "AND" *students* found 4,798 articles. Combining keywords 1, 2 and 3 to get 2 articles.

Searching the Sciencedirect database for the first keyword *Hydroponics* “OR” *Technology Hydroponics* “OR” *hydroponics system* found 5,564 articles, the second keyword *interest hydroponics cultivation* “OR” *technology hydroponic farming* “OR” *interest in plant cultivation* found 1,856 articles, the third keyword was *pesantren* “OR ” *boarding school* “OR” *Islamic Boarding School students* “OR” *Islamic Boarding School* “OR” *Santri* “AND” *Santriwati* found 372 articles. Merging keywords 1, 2 and 3 obtained 97 articles.

Google Scholar database search for the first keyword *hydroponics* “OR” *Hydroponics* “OR” *Hydroponics technology* “OR” *Technology Hydroponics* “OR” *Hydroponics system* “OR” *hydroponics system* found 8,564 articles, second keyword *interest in farming* “OR” *interest hydroponics cultivation* “OR” *technology hydroponic farming* “OR” *interest in plant cultivation* found 5,143 articles. The three keywords of *Islamic boarding schools* “OR” *Islamic boarding schools* “OR” *Islamic Boarding Schools student* “OR” *Santri* “AND” *Santriwati* found 6,309 articles. Merging keyword 1, 2 and 3 obtained 109 articles.

Researchgate database search for the first keyword *hydroponics* “OR” *Hydroponics* “OR” *Hydroponic technology* “OR” *Technology Hydroponics* “OR” *Hydroponics system* “OR” *hydroponics system* found 4,961 articles. The second keyword *interest in farming* “OR” *interest hydroponics cultivation* “OR” *technology hydroponics farming* “OR” *interest in plant cultivation* found 1,985 articles. The third keyword was *pesantren* “OR” *Islamic boarding* “OR” *Santri* “AND” *Santriwati* found 3,452 articles. Merging keyword 1, 2 and 3 obtained 10 articles.

The Identification result of the four literature search database found 218 articles. Then a screening process was carried out with articles criteria that Identified students’ interest in farming, So 42 articles were obtained. Finally, the eligibility process was carried out with the standard range of 2015-2020, full text Indonesian and English, 5 articles were found matched the literature study that met the requirements. The research literature selection table has the following inclusion and exclusion criteria :

Tabel 1. Inclusion and Exclusion Criteria in Research Articles

Indikator	Inclusion Criteria	Exclusion Criteria
Population	Islamic boarding school student	High school student community hydroponic entrepreneurs
Intervention	Hydroponic Technology	Conventional farming
Outcome	Hydroponic technology as an effort to increase interest in farming Islamic boarding school student	Literature study that describe the interest in farming with conventional methods
Publication type	Published nationally and internationally as well as full text	Unpublished and not in full text articles form
Year of Publication	Published research from 2015-2020	Under 2015
language	Articles written in Indonesian and English	Artikel yang berbahasa selain bahasa Indonesia dan bahasa Inggris Articles in languages other than Indonesian and English

Based on the table of inclusion and exclusion criteria for articles that did not identify the application of hydroponic student at Islamic boarding schools, there were other interventions as many as 49 articles were exclusion from the inclusion table. Then a literature study that did not explain Interest in farming as many as 32 were excluded from the search table. And articles that were not published, and not in full text from many as 29 articles were literature selection flow. Articles published under 2011, not in Indonesian and English as many as 12 were also excluded from the literature search flow. In order to obtain as many 5 main articles that meet the requirements for conducting a literature review study.

3) RESULTS AND DISCUSSION

Contains the result of research and discussion. The format of research result and discussion is not separated. Research result can be presented with the support of tables, graphs of picture as needed, to clarify the presentation of the result verbally. Caption for picture/graphics are placed below the figures/graphics, while table titles are placed above them. If the table size is wide then the layout is mode in I columns (Table 2). If the size of the table is small the layout can be made in 2 columns (Table 1).

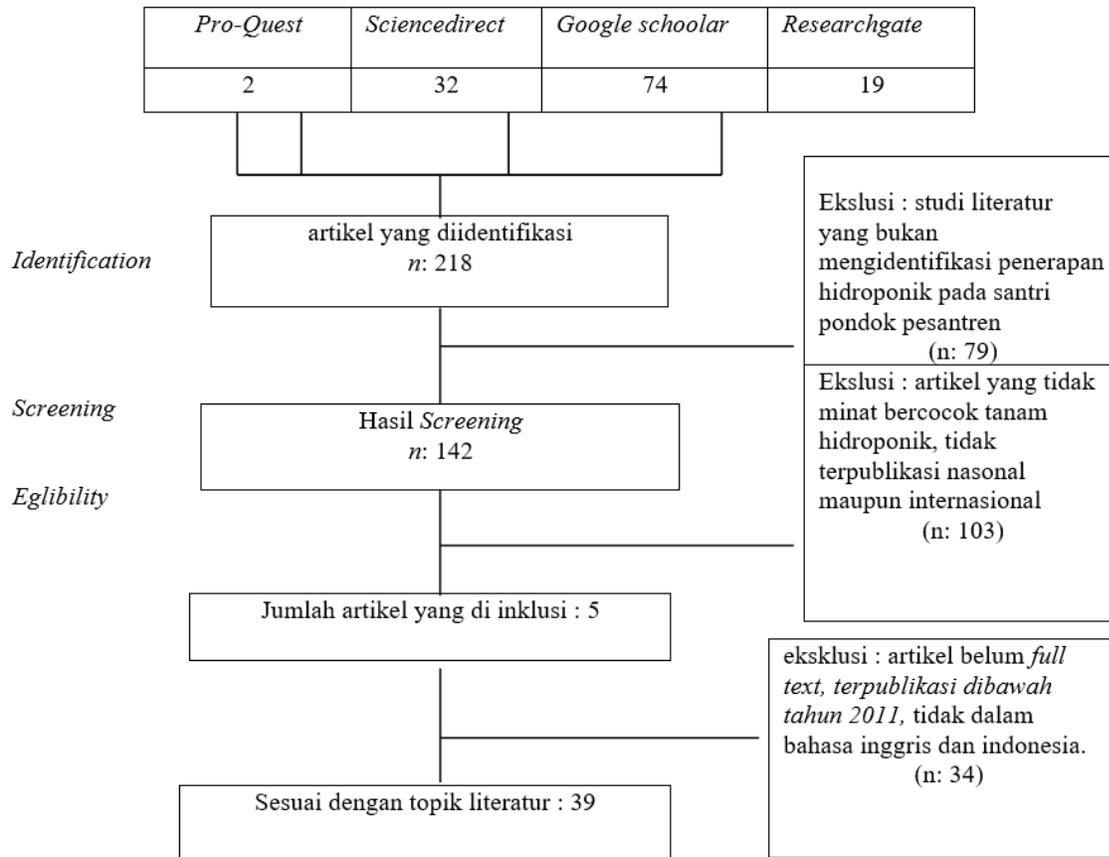


Figure 1. Research diagram flowchart from four databases

Based table 2, the result of a literature search resulted in 5 articles that met the inclusion criteria. The article identifies the use of hydroponics as an effort to increase student' interest in farming in various Islamic boarding schools. The result showed several indicators of student interest. Indicators of student interest that appear based on articles in literature studies are as follows :

Table 2. Matrix of data analysis on articles used in the literature

No	Name	Year	Research Title	Type/Research Methods	Emerging Interest Indicator	Result
1	Nurul Azizah, M Abror, dan Paramitha Amelia K	2019	PKM Santri Pondok Al-Hamdany, Buduran District, Siwalan Panji Village Sidoarjo Regency	Program evaluation Research	Attention Interest	The enthusiasm of the student in hydroponic planting is indicated by the presence of all the student and the ability of the students to continue cultivating plants with

						hydroponi
2	Tatiek Maisaroh	2019	Pioneering Islamic Boarding School Based Entrepreneurship Through Entrepreneurship Training and Assistance for Santri PP Ar-Risalah Mlangi Yogyakarta	Qualitative evaluation research using Participatory methods/approaches	Attention Interest	There is an increase in the ability and enthusiasm of students for entrepreneurship, this can be seen from the high enthusiasm of student in farming
3	Muis,A., Ismail., Palenari.,	2018	Cultivating Vegetable with a Hydroponic System for Groups of Teachers and student at the Al-Qur'an Islamic Boarding School Selayar Babussalam Foundation	Program evaluation research using Participatory Learning and Action (PLA) and Community Empowerment (CE) approaches.	• Engagement	Hydroponic technology is revealed to be able to accelerate the interest and participation of student as well as in increase in knowledge and skill in hydroponic plant cultivation techniques, which is marked by the active involvement of participants and strong motivation from teachers and students
4	Madusari, Astutik, Sutopo, & Handini,	2020	Initiation of Hydroponic Technology to Realize Food Security for Islamic Boarding School Communities	Program Evaluation Research	• Attention • Involvement	The interest and enthusiasm of the studentis is very large which is marked by the activeness and skills of the students in applying hydroponics.
5	Noor Farid, Suparto, & Agustono ,	2018	Darul Qur'an Santri Banyumas in Hydroponic Pakchoi Production Activities Hydroponics	Pre- Ekperimental design one group pretest-postest design	• Feeling happy involvement	It can be seen that there is an increase in the knowledge and enthusiasm of the Santri in planting activities to the harvesting process.

Based on table 3, it shows that that there are several indicators of interest that arise in hydroponic vegetable cultivation, namely the feeling of pleasure, the high attention of students, the interest of students and the involvement of students and the process of farming with hydroponic technology.

Table 3. Interest indicators based on articles in literature studies

No	Indicators	Attitude shown
1	Feeling pleasure	Marked by the enthusiasm of the students in hydroponic farming
2	Attention	Enthusiasm of students in farming
3	Interest	Ability of students to continue the cultivation of hydroponic plants
4	Involvement	Actively prepare plans and schedules of training activities Active in learning starting from the process of planning, implementing, monitoring and result Lots of questions and discussion ensued Active participation in farming activities

Based on research conducted by it can be seen that the enthusiasm of students is very high and there are no obstacles to the hydroponic farming process. In addition, students can also be active in preparing activities, practicing hydroponics, and the production (harvesting) process. Santri, who is interested in hydroponic training, will devote and focus the activities on hydroponic training. Similarly, Azizah (2019) found that students showed enthusiasm for learning and empowering hydroponic plants, as well as the Islamic boarding school community, in farming activities with hydroponics. According to Nurhasanah & Sobandi (2016), Students' enthusiastic feelings will override other things since they have the attention. So, for students who have taken hydroponics, their minds and souls will be focused on farming activities, which will affect their activeness in farming. Along with the emphasis, the pesantren community's understanding of agricultural methods using the hydroponic system has increased. This is supported by the community's high interest in hydroponic technology and shows that the students understand hydroponic farming techniques properly. They are aware of the importance of a livable environment so that students can practice well, and have the ability to continue cultivating hydroponic plants until they enjoy the results of hydroponic plants for daily consumption. According to interest is closely related to feelings of liking and disliking. Interest in something is a valuable resource for achieving or obtaining the desired goal.

According to attention is the focus or concentration of all one's activities on what he is doing. Students' excitement for focusing on hydroponic farming is what has drawn their attention to hydroponics. Interest in a product will increase awareness and motivation to keep empowering hydroponic plants without outside interference. Awareness is a prerequisite to recognizing objects that one feels have an attraction for them. Someone can be said to have an interest in something if they tend to achieve the goals they want or have the will to realize those goals.

Research by Muis et al., (2019), Using participatory learning and action (PLA) and community empowerment approaches, it was revealed that hydroponic vegetable cultivation shows positive results and can accelerate students' interest, which is indicated by high participation both individually and in groups. As is known, someone who has an interest in something will tend to be attracted to and compelled to like that thing/object.. Santri participation is supported by the approach given. This approach can be carried out by giving responsibility to students in the farming process. According to Maisaroh (2019), the participatory approach studies showed students' interest in and excitement for adopting farming practices. In addition, hydroponics can teach hard skills, assist the situation of Islamic boarding schools with little access to basic necessities, and provide a way to earn independent income. According to Willi Purwanti & Afrizal (2013), when someone judges that something will be useful, then they will be interested. This is also supported by the willingness and enthusiasm of the students to continue hydroponic cultivation.

According to Romlah (2010), a person's feelings are always subjective, meaning that they are more influenced by their situation, which is manifested in likes or dislikes and will determine the quality of one's feelings, resulting in pleasant feelings or vice versa. Students' enthusiasm for and willingness to pay attention to cultivating hydroponic plants is one sign that they are interested in the practice of hydroponic farming (Romlah, 2010). The pupils' strong responsiveness to outside stimuli may be extrapolated, which motivates them to participate actively in hydroponic training.

Based on research conducted by Noor Farid et al., (2018) found that the pre-test result of Darul Qur'an Al-Karim Banyumas students in hydroponic production activities was classified as the lowest since only 1.2% of students had good knowledge because the students had not experienced hydroponic activities. After being given practice, the results of the evaluation of the student's understanding were good (94.8%). There was also an increase in knowledge in production, packaging, and marketing, and the student showed a very good to good level of participation

(67.8%). There was a good level of student participation as a result of the students' growing sense of happiness. Students experience pleasure as they become interested in the task at hand. Their enthusiasm are seen in the numerous questions rising in discussions session. According to Firmansyah (2015), interest can be interpreted as a desire or need that arises from participation. Students participate in hydroponic activities because they are interested, and this is supported by feelings of joy and student interest in hydroponics.

According to Slameto (2010), "interest" is a feeling of preferring and having an interest in certain activities without being told. When someone is interested in something, they will exhibit their interest and get enthused, which causes them to be more attentive to the subject Afdal Zikri (2019). When someone has paid attention to an object, it will lead to an attitude of enthusiasm or concentration on what is noticed and override the others. Darul Qur'an Al-Karim Banyumas students have a feeling of pleasure and concern for hydroponic training. This happy feeling showed the students' enthusiasm and positive response to their curiosity about and desire to try new hydroponic farming experiences.

CONCLUSION

Based on the literature review that has been done, it can be concluded that hydroponic technology increased the interest in farming among Islamic boarding school students. Some performance indicators are a feeling of pleasure, attention, involvement, and interest in hydroponic farming. In addition, the results obtained from the study are expected to increase knowledge and understanding, and provide a description for educational institutions regarding the interest in farming students from Islamic boarding schools using hydroponic technology.

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