FORMATION OF THE ENTREPRENEURIAL SPIRIT OF PROSPECTIVE TEACHERS THROUGH PROJECT-BASED LEARNING

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Abstract
This research aims to find out whether the entrepreneurial spirit of prospective Madrasah Ibtidaiyah teachers can be formed with the application of project-based learning models. The type of research used in this study is descriptive quantitative research with sampling techniques in purposive sampling techniques. The sample population selected was Madrasah Ibtidaiyah Teacher Education UIN Walisongo Semarang semester IV class 2018/2019. The research sample used was class IV A, with 40 students. The free variable in this study is a project-based learning model as aloe vera hand sanitizer, young coconut rotary ice cream, jelly candy, dab soap, character’s light sleeper, rainbow ice lolly, making salted eggs with onion flavor and rendang flavor, mosquito repellent candles, making BioLim, and manufacture of pandan-scented candle nut hair oil. In contrast, the tied variable is the student’s entrepreneurial spirit. The conclusions showed the entrepreneurial spirit of prospective teachers through a project-based learning model in a suitable category with an average score of 14.1. The biserial correlation formula obtained a value of RB 0.54 and KD of 29.24%. The figure means that the project-based learning model is good enough to contribute to the formation of the entrepreneurial spirit of prospective teachers by 29.24%. Student response to the application of project-based learning models to foster the entrepreneurial spirit of future teachers gives a positive reaction with agreed categories. The average score is 3.6.

Keywords: Entrepreneurial Spirit, Project-Based Learning Model, Students.

INTRODUCTION
As the highest educational institution, higher education is expected to produce graduates who can compete globally. Therefore, learning activities are needed to empower all
students’ potential so that they are expected to produce quality graduates. Ready to continue to a higher level or prepared to enter the world of work independently as an entrepreneur.

The Central Bureau of Statistics released the latest data regarding the unemployment decline in February 2019. This news is very encouraging for economic progress in Indonesia. However, this is not the case for college graduates. The education level of diploma and university graduates experienced an increase in the unemployment rate. The latest data for the last year from February 2018 to February 2019 shows the following results: 1) Elementary school graduates and below experienced a decline of 25%, from 3.5% to 2.7%. 2) Middle school graduates decreased by 6%, from 5.4% to 5%. 3) High school graduates experienced a decrease of 3.6%, from 7% to 6.8%. 4) Diploma I/II/III graduates increased by 8.5%, from 6.4% to 6.9%. 5) University graduates experienced a significant increase of 25%, from 5% to 6.2% (Pusparisa, 2019). Likewise, according to the Ministry of Research, Technology and Higher Education, 630 thousand or about 8.8% of the 7 million total unemployed in Indonesia, are university graduates (Gewati, 2018). From the number of unemployed, universities must commit to producing graduates to be more independent and creative, prepared to work and prepare and open new jobs. The reality that has happened so far is that people are educated to become job seekers. Job seekers are increasing every year while the available job opportunities are insufficient or the skills do not match the needs. As a result, every year the number of unemployed continues to increase. Afriadi also stated that most university graduates are more job seekers than job creators. This is due to the current learning system applied in various universities, which is generally more focused on the accuracy of graduation and the speed of getting a job (Afriadi & Yuni, 2018).

The criteria for the demand for the world of work for prospective workers are getting higher. Future workers, in addition to having the ability to master qualified knowledge, in this case often referred to as hard skills, prospective job seekers must also have soft skills, namely the ability to socialize. Based on research conducted by Isnaini and Lestari, the number of university graduates who are still unemployed is caused by several things, including low soft skills, relationships, and parents’ economic level (Isnaini & Lestari, 2016). From this research, Soft skills are still a skill that many have not mastered. For this reason, universities as the highest educational institutions are expected to produce graduates who can master these two skills.

Researchers conducted initial observations by distributing questionnaires to 29 students to find out soft skills are in the form of interest or not for entrepreneurship. The indicators of interest in entrepreneurship include not depending on others, helping the social environment and feeling happy to be an entrepreneur. The three indicators refer to Winkel (Winkel, 2004). The questionnaire results obtained from 29 students were 20 students stated that they were very interested in becoming entrepreneurs. Seven students expressed interest, and only two students indicated that they were pretty
interested in becoming entrepreneurs. From the initial observation questionnaire results, the interest in entrepreneurship in students is relatively high, but its implementation has not been maximized. Therefore, the researchers tried to accommodate students’ interest in becoming entrepreneurs, preceded by forming an entrepreneurial spirit in one of the courses.

The Natural Sciences Practicum course is the choice of researchers to realize the formation of an entrepreneurial spirit in students. The Natural Sciences Practicum, which has been taught in the Madrasah Ibtdaiyah Teacher Education department of UIN Walisongo, is still oriented to cognitive (concept mastery) and psychomotor (practice) results but has not implemented learning that leads to the development of student potential in the affective domain such as the entrepreneurial spirit. Syaifuddin and Kalim stated that the entrepreneurial spirit is part of the affective domain that needs to be instilled in students as a provision later when they enter the community (Syaifuddin & Kalim, 2017). One way to foster students’ entrepreneurial spirit is by improving the quality of education. Alfian stated that the quality of education includes quality in terms of processes and products. The quality of the process can be achieved through an effective learning process, and learners can undergo the learning process meaningfully and be able to live it. Product quality can be achieved if students show a high level of mastery of learning tasks that follow students' needs and the demands of the world of work (Erwinsyah, 2017).

The formation of the entrepreneurial spirit can be developed through several exciting activities, such as practical activities, compared to only providing classical material. One of the learning models that can support an entrepreneurial spirit is a project-based learning model (Project-Based Learning). Project-based learning has enormous potential to make learning experiences more exciting and meaningful for adult learners to build job skills. This is because the project-based learning model is developed to produce a product. Students or learners practice directly to make a product, and students are also trained to be able to find the link between the theories that have been studied and the products they make. According to Sofyan and Komariyah, the products produced must also be innovative, unique and focused on solving problems related to the lives of learners or community needs and carried out collaboratively (Sofyan & Komariah, 2016). In this study, the focus of problem-solving is unemployment.

Natural Science is very closely related to everyday life. Some home products such as soap, shampoo, jelly, ice cream and so on are examples of applying the concept of Natural Science in everyday life. There is nothing wrong with some of the product examples above if our students are directed to make their products. Students are given project assignments to produce products to explore all abilities possessed by students so that learning will be more exciting and meaningful.

Research on entrepreneurship related to Project-Based Learning Models has been carried out, including
Farida in her research which focuses on the preparation of a project-based entrepreneurship learning model and at the same time testing the effectiveness of this learning model to foster the entrepreneurial spirit of students in the economic education study program (Farida, 2015). The study's final results showing the effectiveness of project-based entrepreneurship learning are proven to grow the entrepreneurial spirit of students very well. In the same year, Sulasari continued the research results using the Project-Based Learning approach, which focused more on improving the entrepreneurial character of students with the research subjects of Malang State Polytechnic students (Sulasari, 2016). The report shows that this project-based learning provides a good foundation for improving student character towards entrepreneurial development, shown through research variables. Leadership is quite good even though courage in taking risks is still low. The persistence and discipline of students are quite good.

Likewise, the research results from Moerdijanto that entrepreneurship education using the Project-Based Learning model can work well, shown by having succeeded in forming independent business groups that have generated income for out-of-school teenagers, especially in the broiler business and motorcycle repair shops (Moerdijanto, 2012). From the results of these efforts, he has created jobs for himself and others to help government programs alleviate poverty. The Project-Based Learning model was also able to improve students' critical thinking skills with the results of the normalized N-gain calculation that the average increase in learning outcomes of 20 students was 0.45. This value indicates that the increase in learning outcomes in the medium category with an average posttest score (81.44) is higher than the pretest score (61.41) (Pratama & Prastyaningrum, 2016).

The project-based learning model for students at Duta Bangsa University Surakarta is good to apply. These students' physical, mental and mental involvement can encourage learning motivation, decision-making skills and train critical thinking and innovative work in solving various business pioneering problems they face. The entrepreneurial spirit will be formed through creative and innovative thinking patterns, discipline, and social confidence. The colonial nature here is in line with the indicators of the entrepreneurial spirit, especially human-oriented (Hastuti & Utami, 2020).

The results showed that the factors causing the low interest of students in entrepreneurship include 1). Prestige 2). Not confident 3). Feeling unable to attract buyers (lazy) 4). Lack of capital 5). Difficulty to divide the time 6). Fear of failing to see from the experiences of others. This journal aligns with our research that the confidence indicator is still low for the entrepreneurial spirit (Mardatilah & Hermanzoni, 2020).

Overall, students' perceptions of the project-based learning model are good (30% very good and 70% good). Students assess that learning with the Project-Based Learning Model inspires students to choose and make a product or work. In line with our research, student responses agree if project learning is applied in education (Adinugraha, 2018).
Judging from the difference in the effectiveness of the learning model applied in the control class and the learning model applied in the experimental class using Manova, it can be concluded that the learning model applied in the practical course is more effective in improving entrepreneurial attitudes, interest in entrepreneurship, and learning achievement. The project-based model effectively increases entrepreneurial attitudes (Mulyani, 2014) in line with our research.

This study aims to determine the contribution of project-based learning to students' entrepreneurial spirit. The research sample was taken using the cluster random sampling technique, and two classes were taken from 5 categories. In the experimental class project-based learning is applied, while the practical course II used lecture learning. The results of qualitative analysis of the entrepreneurial spirit questionnaire data in the experimental class are in the very good category, while practical class II is in a good variety. Based on the study results, it can be concluded that project-based learning contributes to students' entrepreneurial spirit. In line with our research, project-based models influence students' entrepreneurial spirit (Rohayati, Sumarni, & Wijayati, 2015).

This study found that students who followed the conventional learning model had creativity in the medium to the very high category, while for students who followed the project-based learning model, all were in the very high sort. Rhodes stated that creativity in terms of "personal" (person) shows the potential creative power that exists in each person. Creativity as a "process" can be formulated as a form of thinking in which individuals try to find new relationships, get answers, new methods, or ways to deal with problems. Creativity is a "push" (press) that comes from oneself in the form of a strong desire and creativity to be creative. Creativity in terms of "product" is everything that a person creates due to his uniqueness in interaction with his environment. The product exhibition shows the highest category in the project-based learning stage in line with our research. The product exhibition here contains indicators that the products produced are uniquely shaped and packaged attractively (Rati, Kusmaryatni, & Rediani, 2017).

From the review of relevant research above, it shows that research is still focusing on the results of the effect of Project-Based Learning on aspects of personality, limited to the extent of its effectiveness and influence in the context of increasing interest and enthusiasm for entrepreneurship as well as in mastering the concept of learning. Meanwhile, the significance of this research lies in the relation of the three keywords of natural science practicum learning, project-based learning models, and orientation to the real results of entrepreneurship activities. Emphasis on the product or result orientation is a general characteristic used as a benchmark for forming an entrepreneurial spirit. And the absolute product orientation of entrepreneurial activity is theoretically an indicator of the success of entrepreneurial learning, which emphasizes the achievement of personal skills. Furthermore, the hope of this research is the value of the
benefits of complete learning, which includes assembling a continuous process from theoretical learning to practice and continuing to hone skills to produce business products.

As a researcher and a teacher, it is necessary to apply this model to the MI/SD II Natural Sciences practicum (Physics-Chemistry). Natural Sciences II practicum learning is a continuation of the previous training. Students of Madrasah Ibtidaiyah Teacher Education as prospective MI teachers are trained to create a marketable product through independent assignments given to each group when doing Natural Science practicums to foster an entrepreneurial spirit.

**METHODS**

The type of research used is descriptive quantitative research. The study was conducted in the Department of Teacher Education at the Islamic State Islamic University Walisongo Semarang in the 2018/2019 Natural Sciences II MI (Physics and Chemistry) practicum courses in March-June 2019. The population in this study were all fourth-semester students majoring in Teacher Education at Madrasah Ibtidaiyah UIN Walisongo Semarang consists of 3 classes, namely classes 4A, 4B and 4C. The research sample used was class IV A, with 40 students. The independent variable in this study is a project-based learning model, while the dependent variable is students' entrepreneurial spirit. This study aims to determine whether the entrepreneurial spirit of prospective MI teacher students can be formed by applying the Project-Based Learning model in the MI/SD II Natural Sciences practicum course (Physics-Chemistry).

In this study, researchers used two data sources: primary and secondary data sources. The primary data sources in this study were students. The data include the results of the entrepreneurial spirit questionnaire and the results of the observation of 40 students' project assignments for the Madrasah Ibtidaiyah teacher education class 4A. Both data were obtained from the effects of self-assessment, colleagues and assessments from lecturers. The secondary data is in the form of a questionnaire on the entrepreneurship interest of FITK UIN Walisongo Semarang students as many as 29 students at the initial observation. The data collection method used in this research is the Questionnaire Method and the Observation Method. This study's data collection instruments were questionnaires and observations of the entrepreneurial spirit, student response questionnaires, and project assignment assessment observation sheets.

How to make it, first wash and peel three aloe vera sticks, then cut into small pieces and blend until smooth and add a little water. Strain the aloe that has been blended then mix five tablespoons of 70% alcohol and five tablespoons of lime juice as a natural fragrance considering the fresh smell, stir slowly and pour in a small bottle. Aloe vera hand sanitizer is ready to use.

Aloe vera hand sanitizer became the project of choice for the first group. Hand sanitizers that are made tend to be safe because they are made from mostly natural ingredients, such as aloe vera. Aloe vera contains many benefits for humans, including as much as 95% water, other active ingredients such as essential oils, amino acids, minerals, vitamins, and enzymes. Aloe vera also
contains saponins to kill germs and 70% alcohol which also functions as an antibiotic. Ethanol kills bacteria through two processes, namely protein denaturation and lipid membrane dissolution. Ethanol can easily dissolve in water by forming very strong bonds that are more robust than the bonds between the ethanol molecules. The work of ethanol to kill bacteria will be more effective if there is water in it by damaging bacterial cells or denaturing proteins. So it is very appropriate if the addition of water to aloe vera and alcohol is done in the manufacturing process. The fragrance used also comes from natural ingredients, namely using fresh-scented lime to remove the smell of aloe vera. This hand sanitizer is easy to use and doesn't stick to your hands.

The second project is in the form of Young Coconut Rotary Ice Cream. The method of making it is to prepare a used can of bread that is still clean and then fill it with young coconut, young coconut water, water syrup, salt and sugar. After that, stir until the mixture is evenly distributed in the can and close the can tightly. Place the can containing the young coconut mixture in a basin that already contains a mixture of ice cubes and krosok salt. Rotate the can for a few minutes. Occasionally open the lid of the can and stir the dough again. Cover again and turn until the ice cream freezes like normal ice cream. In the last step, put the ice cream into a cup and fill it with toppings according to taste. Turning the can must be done continuously until the desired texture of ice cream is found. If the ice has melted in the basin, the water must be removed immediately to maintain the temperature of the ice rim mixture in the can and immediately replace it with new ice cubes and salt. In the process of turning the can, the dough begins to freeze. This happens because of the heat transfer process from the ice cream dough in the can with the ice cubes and krosok salt in the basin. The average temperature of the ice mixture is 0°C.

In contrast, the temperature required to freeze the ice cream dough is lower, ranging from -30°C. To reach this temperature, it is necessary to add substances or materials to lower the solution's freezing point. The ingredient is krosok salt. The purpose of continuously rotating cans is to reduce the size of the ice crystals so that the ice cream becomes smoother and softer.

The third project is Jelly Candy. The method of making it is mixing agar powder, jelly powder, sugar and water. These ingredients are boiled and then stirred until boiling. Then pour the mixture on the baking sheet and stand until the dough solidifies. Cut into small pieces according to taste and dry in the sun until crystallized if the dough has solidified. The principle of jelly candy formation is in constructing gels and heating the solution. Gel formation is an incorporation or crosslinking of polymer chains to connect.

Furthermore, this bond can catch water and form a solid and rigid structure. Gels have solid-like properties, particularly elasticity and stiffness. During the heating process, the caramelization process occurs and helps the formation of the gel work well. The heating process at a temperature higher than the gelling temperature will result in the carrageenan polymer in the solution forming a random structure. When the temperature is lowered, the polymer
will form a double-stranded structure. If the temperature decreases, these polymers will be cross-linked strongly, increasing the double helix shape to create a firm gel. If continued, it will result in syneresis, i.e., the gel will shrink while releasing water. The next step is the drying process by utilizing solar radiation, and the gel shrinks little by releasing water slowly and then the sugar crystallization process occurs.

The fourth project is in dab soap, which puts soda ASH, STTP and NaOH in container I. Next, mix the mixture and add three cups of water. Also, provide CMC and ABS, then put them in container II. The next step is to put solution I into solution II and stir until evenly distributed. Enter the coloring and perfume according to taste into the mixture and mix until evenly distributed. Transfer the dab soap mixture into a small bowl, and it's ready to use. Dab soap is a soft soap commonly used for washing clothes, dishes, kitchen utensils, etc. Dab soap has a level of cleaning power that is not inferior to other washing soaps and tends to be more economical. In the manufacture of dab soap, several chemicals are added, such as soda ASH which functions to increase cleaning power, alkaline NaOH serves as a neutralizer of acidity and STTP functions to prevent dirt from returning to clothes and kill bacteria/fungi. Furthermore, other chemicals in ABS function as a cleaner, CMC as a thickener, and water as a solvent. From the available chemicals, it turns out that the dab soap uses two cleaning agents, namely soda ASH and ABS, so it is hoped that the dab soap made has higher cleaning power.

The fifth project task is the character's light sleeper. The manufacturing method includes three stages, namely 1) the stage of making lampshades, 2) the stage of assembling lamps, and 3) the stage of installing the head/lamp cover. The first step is to make the lamp cover by blowing the balloon to medium size, then coat the entire surface of the balloon with wood glue or fox glue. Wait until it dries a bit. Wrap the string around the balloon's surface until the balloon's surface is covered (leaving a hole at the bottom of the balloon). Repeat the process of winding the thread until the thickness of the lampshade is appropriate. Coat with fox glue/wood glue all over the surface of the balloon that has been wrapped in yarn. Then pop the balloon and decorate the lampshade with flannel according to taste. The second stage is to make a series of lamps by preparing lamps, vetting and jacks/plugs and cables. Assemble all the materials and make sure the lights can turn on. The third stage is the installation of the lampshade by installing the fitting on the wood and attaching the lampshade through the hole that was made earlier. In this project assignment, the concept of matter applied is in the form of the properties of light and electrical circuits in series. The visible nature of light from the making of this project task in the form of light can propagate in a straight line. Sunlight can penetrate the lampshade through the gaps in the lampshade made of thread. The existing electrical circuit is in the form of a series electric circuit by assembling all electrical components in a row and only through one path of electricity. This character sleep lamp produces dim light to provide several benefits, including sleeping.
soundly and with higher quality. Sleeping at night with dim light is good for the body because parts of the body in the pineal gland can produce the hormone melatonin. The hormone melatonin plays an essential role in the body, such as: preventing various diseases such as prostate cancer, breast cancer, overcoming stress, Boosting the immune system and reducing the risk of obesity.

The sixth project, making rainbow ice lolly. The way to make it is to first mix all the ingredients in nutrijel, cornstarch, sugar, sweetened condensed milk and water. Cook all the ingredients over low heat, constantly stirring until it boils. Divide the dough into four parts, place them in different places, and add food coloring to taste. Put each piece in a plastic triangle and tie the top. Cut the end of the triangular plastic rather wide, then put it in the plastic ice by diluting it. Insert alternately with other colours, then tie the ends with rubber. Do this until the dough runs out and freeze in the freezer.

The concept contained in the making of this project task is a change in the state of vaporized and frozen substances. The actual change of state is due to the transfer of heat or heat energy. When a substance receives or releases heat, it changes state. When water boils, evaporation occurs from a liquid to a gas. The substance receives heat so that there is an increase in temperature and will eventually undergo a change of state. Meanwhile, when a substance releases heat, the substance will experience a cooling and a state change. Changes in the state of a substance accompanied by heat release is a freezing event, just like ice lolly dough that is put in the freezer and turns frozen.

Making salted eggs with onion flavor and rendang flavor is the next project task. The way of working that can be done is to prepare quality duck eggs and wash them thoroughly. Peel the garlic and mash it using a fork. Next, bring the water to a boil on the stove and add the krosok salt and crushed garlic. Mix well. Pour the salt and onion solution into a jar and wait a few minutes for the answer to cool. The next step is to put the duck eggs into the mixture, make sure the eggs are completely submerged and cover the container with a napkin/cloth. Let stand the soaking for seven days or more, then boil and observe the results. Do the same to make salted egg rendang in the manufacture of salted eggs using the immersion method. Soaking here is done in a solution of salt and onion seasoning and rendang seasoning. The immersion technique here is osmosis. Where osmosis is the movement of solvents (salts and spices) through a selectively permeable membrane from a high solvent concentration to a low concentration so that the egg becomes salty. Krosok salt (NaCl) will enter the egg by seeping through the skin's pores, towards the white of the egg and then the yolk. In this case, the NaCl salt will first be converted into sodium ions (Na+) and chloride ions (Cl-). This chlorine ion functions as a preservative for eggs by inhibiting microbial growth in eggs. The longer the soaking and the more salt used, the more salt will seep into the eggs to be saltier and more durable.

The eighth project is the manufacture of mosquito repellent candles. To make it is to cut the wax, separate it from the wick, and then
place it in a mold container. Add a little mosquito repellent lotion for aroma and crayon coloring to make it look more attractive. Heat the water until it boils, then enter the mold container that already contains the wax in a team way. Put the axis back in the middle of the mold. Remove the wax when it is completely melted and let it sit for a while until the wax hardens again. The concept of Natural Science that can be seen from this project assignment is that wax is one type of object with a low melting point. Thus, if given heat will make it very easy to melt and change shape. Changes in the form of wax in the melting process occur in a physical change process. Physical changes are changes in the state of matter without the formation of new substances.

Making BioLim is the next project task. The way to make it is to pour water into a bucket and then add the urea, molasses and rice bran little by little. Then enter the lactobacillus bacteria obtained from the contents of the chicken gizzard and stir evenly. Put the mixture into a used bottle and close it tightly. Store for two weeks as the fermentation process. The manufacture of this product was inspired by the increasing price of chemical fertilizers and their dwindling availability, and the increasing abundance of livestock waste. Biolim is a fertilizer or animal feed supplement produced from an anaerobic process by lactobacillus protectus bacteria, converting organic compounds into methane. Biolim is an organic fertilizer rich in elements needed by plants, such as protein, cellulose, and lignin. Water is used as a solvent. Urea is used as a nitrogen generator to bind rhizobium bacteria which plays a very important role in plant growth. Sugarcane drops are used as a starter or balancer. Sugarcane drops can be replaced by sugar water and rice bran as carbohydrates. From these materials, biolim is very useful as fertilizer and animal feed.

The last project task was the manufacture of pandan-scented candlenut hair oil. The way of working that can be done is first to smooth the candlenut using a mortar. Roasted hazelnut that has been mashed until golden brown. Prepare water and put it in a saucepan, and bring it to a boil. Next to the pot, add the candlenut and pandan leaves. Take the oil that is above using a spoon little by little. Then the oil is deposited for one day and then re-boiled using a frying pan. Separate the oil from the hazelnut juice with a sieve. Cool and put in a bottle. This experiment uses the principle of separating mixtures based on differences in the density of substances through the extraction and filtration processes. The extraction method is carried out by smoothing the candlenut until it is smooth to make it easier for the oil in the candlenut seeds to be extracted by the solvent.

Furthermore, the hazelnut seeds are added with water to boil and filter. The filtering process or filtration is carried out to separate candlenut oil, water (filtrate) and hazelnut dregs (residue). Meanwhile, separating two filtrates with different densities can be done using the distillation technique. Oil has a smaller thickness, so it is in the top layer, and water is in the bottom layer. However, due to limited equipment, the distillation technique cannot be carried out, so that it can only be done by taking the oil slowly using a spoon and reheating it to obtain a clearer oil filtrate.

Zuanita Adryani & Muh Syauqi Malik
Formation of the Entrepreneurial Spirit of Prospective Teachers through Project-Based Learning
RESULTS AND DISCUSSIONS

The research titled "Formation of Entrepreneurial Spirit of Prospective Teacher Students Through Project-Based Learning" was carried out in March-July 2019 in the Department of Teacher Education at Madrasah Ibtedaiyah UIN Walisongo Semarang with research subjects in 1 class, namely class 4A. This research is quantitative research which is analyzed descriptively. The existing primary data was obtained through observation and distributing questionnaires.

Results of Initial Observation Data Analysis

The results of initial observations showed that based on the results of a questionnaire from 29 students of the Tarbiyah and Teacher Training Faculty (FITK) UIN Walisongo about the interest in entrepreneurship. Research indicators to determine student interest in entrepreneurship do not depend on others, helping the social environment and feeling happy to be an entrepreneur using a Likert scale score with a score range of 1-4 scales. A score of 1 is used for the lowest score (strongly disagree) and 4 for the highest score (strongly agree). The calculation is done descriptively regarding three indicators.

The questionnaire results obtained from 29 students were 20 students stated that they were very interested in becoming entrepreneurs. Seven students expressed interest, and only two students indicated that they were quite interested in becoming entrepreneurs. The details of the questionnaire results on the entrepreneurship interest of the students of the Tarbiyah and teacher training faculties can be seen in Table 1.

Table 1. Recapitulation of entrepreneurial interest of FITK UIN Walisongo

<table>
<thead>
<tr>
<th>Interval Score</th>
<th>Category</th>
<th>Number of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>43 - 52</td>
<td>Very Interested</td>
<td>20</td>
</tr>
<tr>
<td>33 - 42</td>
<td>Interested</td>
<td>7</td>
</tr>
<tr>
<td>23 - 32</td>
<td>Quite interested</td>
<td>2</td>
</tr>
<tr>
<td>13 - 22</td>
<td>Not Interested</td>
<td>0</td>
</tr>
</tbody>
</table>

Results of Project Task Data Analysis

The assessment of project assignments was observed by the lecturer assisted by two observers starting from the planning stage (A), investigating project implementation (B), preparing and showing authentic products (C) and presenting reports (D). Data analysis to assess project assignments carried out by students was also carried out descriptively using a Likert scale score with a score range of 1-4 scales. The project tasks carried out by each group are different. The project tasks include: 1) Hand Sanitizer Aloe vera, 2) Rotary ice cream, 3) Jelly candy, 4) Dab soap, 5) Character bed lamp, 6) Rainbow ice candle, 7) Onion-rendang flavored salted egg, 8) Aromatic Candles, 9) Biolim is rich in benefits, and 10) Pandan-scented candlenut hair oil.
The calculation results show that the average score for each project task indicates good and moderate criteria. The calculation results show that student project assignments through a project-based learning model based on observer I show good criteria with an average score of 12.4. The average score for each aspect of the project task indicates good and moderate criteria.

It was concluded that student project assignments through a project-based learning model based on observer II showed good criteria with an average score of 13.3. The average score for each aspect of the project task shows good standards. The average score for each element of the project task indicates reasonable and moderate criteria. Based on the three assessments above, namely the assessment of lecturer observations, observers I and II. The results of the three estimates were then averaged to get the final result or conclusion. From the above calculations, it can be concluded that the project assignments that have been carried out by students while using the project-based learning model show good criteria with an average score of 13.0.

The project-based learning model consists of several stages, including 1) planning stage, 2) project implementation stage, 3) product exhibition stage, 4) presentation stage. From each stage, observations were also made by the lecturer and assisted by two observers. From the data analysis above, it can be seen that the project task planning stage provides a good category with an average score of 3.3. At the planning stage, students in groups determine the project's title, arrange an implementation schedule, determine tools and materials and develop a design (work procedure).

The second stage of the project-based learning model is the investigation of project implementation. Students jointly prepare tools and materials, perform project tasks following predetermined work procedures at the planning stage, cooperate to complete project tasks by paying attention to the deadline for implementing project assignments. The investigation phase of the implementation of project tasks is also carried out by observing. The data analysis shows that the project task implementation stage provides a good category with an average score of 3.1. Furthermore, the third stage is the product exhibition and analysis is also carried out. Analysis of the product exhibition stage can be seen in the table. Students in groups exhibit their products in front of the class with assessment criteria seen from their physical form, whether they are unique, attractive, have defects or not. Is it safe to use smelly ingredients, easy to get the usefulness of the resulting product and how to prepare the report.
From the data analysis above, it can be seen that the implementation phase of the project tasks gave a good category with an average score of 3.1. Next is the final stage, namely the presentation of the report. The criteria observed in this stage are the language used, mastery of the presentation material, and whether or not they can answer questions from the lecturer or other groups regarding the presentation material. It can be concluded that the report presentation stage provides a medium category with an average score of 3.0.

<table>
<thead>
<tr>
<th>Interval Score</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-1.6</td>
<td>Very less</td>
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<tr>
<td>1.7-2.3</td>
<td>less</td>
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<tr>
<td>2.4-3.0</td>
<td>moderate</td>
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<tr>
<td>3.1-3.6</td>
<td>good</td>
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<tr>
<td>3.7-4.3</td>
<td>very good</td>
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</tbody>
</table>

Results of Entrepreneurial Spirit Data Analysis

Data analysis of the entrepreneurial spirit was carried out on 40 students majoring in Teacher Education at Islamic State Islamic University Walisongo. The indicators of entrepreneurial spirit measured are self-confidence, achievement motive, human-oriented and leadership spirit using a Likert scale score with a score range of 1-4 scales.

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Question Number</th>
<th>Number of Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confident (A)</td>
<td>1 to 9</td>
<td>9</td>
</tr>
<tr>
<td>Achievement motive (B)</td>
<td>10 to 17</td>
<td>8</td>
</tr>
<tr>
<td>Human-Oriented (C)</td>
<td>18 to 21</td>
<td>4</td>
</tr>
<tr>
<td>Leadership Soul (D)</td>
<td>22 to 29</td>
<td>8</td>
</tr>
<tr>
<td>Quantity</td>
<td></td>
<td>29</td>
</tr>
</tbody>
</table>

The Entrepreneurial Spirit Assessment was carried out three times, namely self-assessment, peer assessment, and assessment of lecturer observations. The results of the three estimates were then averaged to get the final result or conclusion.

From the above calculations, it can be concluded that the entrepreneurial spirit of students after applying the project-based learning model based on self-assessment shows good criteria with an average score of 13.9. It can be supposed that students' entrepreneurial spirit after applying the project-based learning model based on the lecturer's assessment shows excellent criteria with an average score of 14.6. The entrepreneurial spirit of students after applying the project-based learning model based on self-assessment shows good criteria with an average score of 13.9.

Based on three assessments, namely self-assessment, assessment of lecturer observations, and assessment...
of peers. The results of the three assessments were then averaged to get the final result or conclusion. It can be concluded that students' entrepreneurial spirit after applying the project-based learning model based on the three assessments shows good criteria with an average score of 14.1. Assessment of each indicator of students' entrepreneurial spirit is also carried out to determine which indicators have been well-formed or need follow-up. The assessment of the confidence indicator can be seen in the table. It can be concluded that the arrow of students' entrepreneurial spirit gives a good category with an average score of 3.4. The indicator of the entrepreneurial spirit of student achievement motives also provides a good category with an average score of 3.5. The indicator of the entrepreneurial spirit of human orientation gives a very good category with an average score of 3.7. The indicator of the entrepreneurial spirit of student leadership also gives a good category with an average score of 3.4. The indicators of entrepreneurial spirit in this study provide good and very good categories through three assessments: yourself, lecturer observations and assessments from colleagues.

**Results of the analysis of the influence between variables**

The independent variable in this study is the project-based learning model and the entrepreneurial spirit as the dependent variable. Based on data analysis through Microsoft Excel, the biserial correlation value (RB) is 0.54, so it can be interpreted that the project-based learning model has quite an influence on the formation of the entrepreneurial spirit of prospective teacher students. Furthermore, to determine the magnitude of the contribution of the two variables, the coefficient of determination can be used with the results obtained are 29.24%. So the assistance of the learning model to the formation of the entrepreneurial spirit of students is 29.24%.

**Student Response to the Implementation of Project-Based Learning Model**

The results of the student response questionnaire were analyzed descriptively to determine student responses to the implementation of the project-based learning model. Aspects of student response measured in this study were student seriousness (A), material mastery (B), interest in the implementation of the Project-Based Learning (C) model and the efforts of the Project-Based Learning model in the formation of an entrepreneurial spirit (D). Each aspect of the student's response was also analyzed. In the assessment of student responses, the following answer choices were used: (4) strongly agree; (3) agree; (2) disagree; (1) strongly disagree. As for the results of the analysis of student response data, it can be concluded that the students agreed with implementing the project-based learning model to form the entrepreneurial spirit of students. From the calculation results, it can be concluded that the student response to executing the project-based learning model shows the criteria for agreeing to be applied as one of the models that can foster the entrepreneurial spirit of prospective teacher students with an average score of 3.6.

Zuanita Adriyani & Muh Syauqi Malik
Formation of the Entrepreneurial Spirit of Prospective Teachers through Project-Based Learning
Entrepreneurship in Indonesian was initially known as the meaning of standing on one's strength or someone who can start a business. Entrepreneurship is defined as closely related to talent from birth, so that entrepreneurship cannot be taught and learned. But the paradigm of entrepreneurship has turned into a discipline that can be learned and taught to everyone. This follows Subroto's statement that entrepreneurship is a discipline that studies the values, abilities, and behavior of a person facing life's challenges and how to obtain opportunities with various risks that they may face. As a scientific discipline, entrepreneurship can be learned and taught. Every individual has the opportunity to become an entrepreneur. Having talent alone is not enough to become a successful entrepreneur, but you must also know all aspects of the business you are engaged in. Most entrepreneurs are motivated by a desire for self-determination. Two needs underlie a person's motivation to become an entrepreneur: 1) need for achievement. There is a willingness to learn and bring and implement ideas to the community through goal setting, planning and information gathering. 2). Need for independence. The need to produce products that are different from others and more daring to make their own decisions (Subroto, 2015).

The entrepreneurial spirit, attitude, and behavior have the following characteristics: (1) full of confidence, with indicators full of confidence, optimism, discipline, commitment, and responsibility; (2) have the initiative, with indicators full of energy, elegant in action and active; (3) have achievement motives with results-oriented and forward-looking indicators; (4) have a leadership spirit with indicators of daring to be different, trustworthy and tough in acting; and (5) dare to take calculated risks (Chotimah, 2014).

The entrepreneurial spirit is an entrepreneurial trait that exists within a person and tends to be permanent. According to Pasrizal, the entrepreneurial spirit is the character, nature and behavior of a person with self-confidence (confident, optimistic, and full of commitment); initiative (energetic and confident); have an achievement motive (results-oriented and forward-looking); have a leadership spirit (dare to be different, trustworthy, tough to act) and dare to take risks with full consideration (Pasrizal, 2018). The entrepreneurial spirit grows driven by several factors, including the motivation of interests to survive and the urgent needs of life. So the first choice of entrepreneurs is because circumstances force them to meet economic needs. Entrepreneurial spirit, because they are interested in following and imitating business trends which are usually temporary and therefore this factor, is vulnerable to business risks. And a true entrepreneurial spirit that has an idea and essential inner capital, namely the desire to always be creative and innovate. From this innovative spirit, a person continues to think creatively and carefully to get business opportunities and develop them (Rimadani & Murniawaty, 2018).

Project-based learning is a learning model that focuses on the main concepts and principles of a discipline, involves students in problem-solving activities and other
meaningful tasks, provides opportunities for students to work autonomously in constructing their learning, and ultimately produces valuable and realistic products (Rati et al., 2017). Project-based learning has the characteristics of collaborative work in groups. Their learning process is related to the project they are working on, with the teacher as a supervisor. Through Project-Based Learning, students are encouraged to be more active in their learning. Students take the initiative, lecturers provide convenience and evaluate projects both their meaning and application to their daily lives.

**Project-Based Learning Activities at the Natural Sciences Practicum of Madrasah Ibtidaiyah II (Physics-Chemistry)**

Practicum Natural Sciences Madrasah Ibtidaiyah II is a compulsory subject in the Department of Teacher Education at UIN Walisongo Semarang. This course is available in the fourth semester and continues the previous courses, namely the basic concepts of Natural Sciences II (Physics-Chemistry). In this course, students are trained to practice and explain various concepts of Natural Sciences through various experiments. The Natural Sciences Practicum, taught at the Madrasah Ibtidaiyah Teacher Education department at UIN Walisongo, is still oriented towards cognitive (concept mastery) and psychomotor (practice) results. On this occasion, students are trained to dare to create a product through project-based learning. The project-based learning model is carried out to deepen the knowledge and skills acquired by making a product through project assignments related to teaching materials.

Project assessment consists of four aspects: physical form, innovation, raw materials, and product benefits. Each aspect was observed and determined the highest and lowest values and then analyzed descriptively. Students get the task of making a product as a project assignment that must be done. The products that can be made are closely related to our daily lives and have something to do with applying Natural Science materials such as making yogurt, jam, ice cream, soap, shampoo and so on. Students are given the freedom to determine the product to be made to train student creativity. The researcher also observed the implementation of this project from beginning to end, including the planning, implementation and reporting stages of student project results.

At the planning stage, students discuss in groups to determine the title of the project, arrange an implementation schedule, determine tools and materials and develop a project work plan or procedure to be carried out. In the Project Implementation Investigation Stage, each group of students prepares the tools and materials to be used. Each group must be skilled and understand the work steps to be carried out. Each group must cooperate and pay attention to work safety and the timeliness of implementation. As for the product exhibition stage, the assessment observed is physical appearance, the safety of raw materials, benefits of products made and how to compile project reports. The last stage of project-based learning activities is to present a report in front of the class to
let all students know the project results that each group has done. The assessment is carried out in the form of how students explain the presentation material, using easy-to-understand and coherent language and can answer questions related to the presentation material.

Observation of project assignments is carried out by the lecturer with the help of two observers. From the analysis of the data, it was found that at this planning stage, it met the good category with the detailed scores given by the lecturer, observer I and II, respectively 14.6 (very good); 15.2 (very good) and 14.1 (good). The student projects produced varied, and each group was given the freedom to determine the title of the project to grow creative ideas and innovate, which is one indicator of the entrepreneurial spirit. The title of the first project is the manufacture of Aloe vera Hand sanitizer.

The Influence of the Implementation of Project-Based Learning Models on the Formation of Entrepreneurial Spirits for Prospective Teacher Students

This study aims to determine whether the entrepreneurial spirit of prospective MI teachers can be formed after implementing the Project-Based Learning model in the Natural Sciences practicum course at Madrasah Ibtidaiyah II (Physics and Chemistry). In addition, the researcher wants to provide motivation and interest in entrepreneurship for prospective teacher students to become provisions when entering the community. Project-based learning consists of four stages: the project planning stage, project implementation, product exhibition, and report presentation. Observations on the performance of the learning model were carried out by the lecturer with the help of 2 observers. From the results of the analysis that has been carried out, the implementation of the Project-Based Learning model provides a good category with an average score of 13.0.

Meanwhile, for each stage of implementation, the model provides excellent and moderate categories. The medium category is at the report presentation stage, while it provides a good category for the other stages. In the following, a diagram of each stage of the project-based learning model will be presented in Figure 1.

![Figure 1. Diagram of each stage of project-based learning model](image)

From Figure 1, it can be seen that the product exhibition stage gets the highest score compared to the other stages. This follows Agustiana's
opinion that the Project-Based Learning model emphasizes learning activities that are relatively long duration, holistic-interdisciplinary, student-centered, integrated with practice and focused on product development (Agustiana & Tika, 2013). However, in practice, the results obtained are slightly lower. In carrying out the practice, the division of tasks for each member is less clear, less evenly distributed because there are still some students who have not been maximally involved in the group. The presentation stage also gives a lower score. This is because students have not explained the presentation material in detail and cannot relate the products made to existing Natural Science concepts. For this reason, further research is needed to improve student's abilities at this stage.

There are four aspects of the entrepreneurial spirit observed, including parts of self-confidence, achievement motive, human-oriented and leadership spirit. All aspects were analyzed descriptively to determine the category of student entrepreneurial spirit, whether it is delicious, good, moderate, lacking or very poor. The data on students' entrepreneurial spirit obtained from the results of a questionnaire on the indicators of the entrepreneurial spirit provide good criteria with an average score of 14.1. The analysis of each hand of the entrepreneurial spirit gives good and very good categories. The very good criteria are owned by the human-oriented indicators, while the indicators for self-confidence, mastery of concepts and leadership qualities give a good category. In the following, a diagram of each indicator of the entrepreneurial spirit of prospective teacher students will be presented in Figure 2.

![Figure 2. Diagram of each indicator of student entrepreneurial spirit prospective teachers](image)

From the indicators of the entrepreneurial spirit observed by the researchers, it turns out that the human-oriented hand gives the highest point. Students in groups can respect each other's opinions, seen when in the preparation stage of determining the product to be worked on and determining the place of manufacture of the product. Students in groups help each other to complete the effect. However, there are still some students who seem silent and only follow the group's decisions. The research results from Munirohatin also stated that with the application of project-based learning models, students could work well in groups. Students cooperate well with each other starting from planning project activities, determining places
of observation, taking care of permits and compiling questions for interviews (Munirohatin, 2018).

To determine the size of the influence of the use of the Project-Based Learning learning model with the formation of the entrepreneurial spirit of prospective teacher students, the magnitude of the biserial correlation value must be determined. Arikunto guides the size of this correlation with the provisions of very high, high, sufficient, low, and very low (Arikunto, 2006). The biserial correlation value obtained is 0.54. The conclusion is that the level of relationship between the use of project-based learning models on the formation of the entrepreneurial spirit of prospective teacher-students is quite strong. From the results of the biserial correlation value, the price of the coefficient of determination can be determined to determine what percentage of the influence of the use of project-based learning models on the formation of the entrepreneurial spirit of prospective teacher students. The value of the coefficient of determination is obtained from $r^2 \times 100\%$. Based on the calculation, the KD price is 29.24%. It can be concluded that the use of project-based learning models contributes to the formation of the entrepreneurial spirit of prospective teacher students by 29.24%.

Teacher Candidate Student Responses to the Formation of Entrepreneurial Spirit through Project-Based Learning

Student responses in general to the use of Project-Based Learning Models can be used a student response questionnaire sheet which contains questions that cover four aspects, including the seriousness of students, mastery of the material, interest in the implementation of project-based learning models and the efforts of the Project-Based Learning model in shaping the soul. Entrepreneur. The assessment criteria for the questionnaire sheet include strongly agree, agree, disagree and strongly disagree.

Based on student questionnaires on applying project-based learning models to foster an entrepreneurial spirit, prospective teacher students gave positive responses in agreeing with an average score of 3.6. All aspects were analyzed descriptively to determine the average of each element. The assessment of each component of student responses to implementing the project-based learning model was also examined. The following will present a bar chart of each aspect of the reaction in Figure 3.

From the figure 3, it can be concluded that students gave the highest response to the seriousness aspect of students. At each stage of the project-based learning model, students are always present in class during the learning process. The element of mastery of the material gives the lowest score compared to other components. From the results obtained, it turns out that students have not been able to relate existing Natural Science concepts to the products produced. Students also agree with applying the Project-Based Learning model in shaping students' entrepreneurial spirit by showing that students can create unique, exciting and valuable products.
CONCLUSION

Project-based learning is carried out in several stages, including planning, project implementation, product exhibition, and report presentation. Each group carries out a different project task. The project tasks include: 1) Hand Sanitizer Aloe vera, 2) Rotary ice cream, 3) Jelly candy, 4) Dab soap, 5) Character bed lamp, 6) Rainbow ice candle, 7) Onion-rendang flavored salted egg, 8) Aromatic Candles, 9) Biolim rich in benefits, and 10) Pandan-scented candlenut hair oil.

The indicators of the entrepreneurial spirit measured in this study are self-confidence, achievement motive, human-oriented, and leadership confidence. The data on students' entrepreneurial spirit obtained from the results of a questionnaire on the indicators of the entrepreneurial spirit provide good criteria with an average score of 14.1. The analysis of each hand of the entrepreneurial spirit gives good and excellent categories.

The effect of the project-based learning model on the formation of the entrepreneurial spirit of prospective teacher students can be determined by calculating the value of the biserial correlation (RB) and the coefficient of determination. Using the biserial correlation formula, the RB value is 0.54, and the KD is 29.24%. This figure means that the project-based learning model is quite good at contributing to the formation of the entrepreneurial spirit of prospective teacher students by 29.24%. Student responses to the application of project-based learning models to foster the entrepreneurial spirit of future teacher students gave positive reactions with the category of agreeing. The average score is 3.6.

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