



Multiple Intelligences Theory: Intelligence Formed in Economic Subjects

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ABSTRACT

Each discipline has different characteristics and requires different bits of intelligence. Each discipline must have one or more intelligence that has the potential to be developed based on the characteristics of the discipline. In this study, the discipline that will be taken is economics. This article is a study that aims to find out what types of intelligence will develop in economics learning according to the characteristics of economics learning. This research is a qualitative type of research that is a literature study whose primary object is obtained from the existing literature. Systematic, clear, logical, and factual information is needed in qualitative research. In the study, it was found that learning economics which has analytical characteristics that generally use problem-solving methods has the potential to highlight multiple intelligences in students who are trained based on the character of the economics subject itself. This intelligence includes linguistic, logical-mathematical, spatial, interpersonal, personal, and naturalist intelligence.

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1. INTRODUCTION

Education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have religious-spiritual strength, self-control, personality, intelligence, noble character, and skills needed by themselves, society, nation, and state. described in the Law of the Republic of Indonesia Number 20 of 2003 concerning the National Education System. Modern education today does not only create humans who have good cognitive abilities. Modern education must be able to create humans who have skills or intelligence according to their potential. Modern education today can not be separated from conflicts and problems of an unbalanced human mindset (Gacel-Ávila, J.,2005; Momanu, 2012). Therefore, solving social problems and the nature of life is in the spotlight to clarify the current complexities and uncertain future (Defianti, 2020).

Indonesia as one of the developing countries in the world must be able to compete with other developed countries by preparing generations who are intelligent, capable, creative, faithful, and have noble character. Rapid changes in the times are also a spice if Indonesia is forced to prepare highly competitive human resources. Highly competitive humans are humans who can solve various problems through critical and creative thinking processes. To achieve all this requires an important tool that is education.

The education system in Indonesia is often changing and is still considered too burdensome for students. This is due to the large number of subjects that must be taught by students ranging from basic education to senior secondary education. This causes students in Indonesia to come to school only to compete for the best (cognitive) grades without paying attention to the development of skills or intelligence that each student has the potential to be developed (Khoiri, 2016). Good cognitive values will not be useful if it is not accompanied by good skills. This is a form of dynamic world change where the current world of work no longer requires prospective workers who are good in terms of cognitive only but must also be balanced with good skills, especially in work practices. Finland, which is a country with the best education system, began to eliminate all subjects in the education system. The application of the education system in Finland by applying more contextual lessons is considered appropriate because logically, for example, if a student has aspirations to be an astronaut in mathematics and physics, it will be important but for those who aspire to become entrepreneurs in mathematics, they do not need to require mathematical calculations that are up to too deep or complex (Zakiah, et al., 2019). The author also assumes that the number of subjects that are assessed too much is like the number of foods served in a buffet restaurant but the many types of food available are not all bought and eaten by visitors and that causes some foods to not sell and eventually have to be thrown away. This is considered an ineffectiveness of the subjects presented were the subjects presented should be understood by all but can only be understood by only a few and the knowledge is not useful for the life of the country later.

Indeed, we as a society have the right to give criticism and suggestions to the education system in our country. However, we must be optimistic that the government's policy in our country for the world of education will give brilliant results and be able to create future generations who can compete. This is also supported by the implementation of the 2013 curriculum, which is a curriculum that can produce Indonesian people who are productive, creative, innovative, effective through strengthening integrated attitudes, skills, and knowledge. The implementation of the 2013 curriculum will make students get the right according to Law no. 20 of 2003, namely getting education services according to their talents, interests, and abilities. In addition, the current government is also committed to improving

the competence of teachers so that later they can provide learning using various learning models so that they can help develop the potential skills possessed by students.

From the explanation above, the author wants to raise a topic that discusses what skills or intelligence will indirectly be formed behind the many subjects presented to students who have different characteristics for each subject, especially in economics.

2. LITERATURE REVIEW

2.1 Economics Subjects

Economics subjects are sciences that study human behavior and actions to meet the needs of life which are constantly changing and increasing with limited resources by carrying out economic activities. This understanding is explained in the 2013 curriculum economics teacher manual. social science is divided into several fields which include the field of bookkeeping which is usually called accounting, the field of organizational governance or commonly called management, and the field of economics concepts that discusses the country's economic problems known as development economics.

The objectives of economics subjects described in the 2013 curriculum economics teacher guide include (1) Understanding economic concepts used to relate economic events and problems in everyday life both in the personal, household, community, and state environment (2) Showing curiosity know the economic concepts used to deepen economics (3) Form a wise, rational, and responsible attitude through understanding knowledge, skills, management, and accounting that are beneficial for individuals, households, communities, and the state (4) create responsible decisions about socio-economic values in society at large.

According to the 2013 curriculum economics teacher manual, economics subjects also have characteristics that are different from other subjects. The characteristics of economic subjects include (1) Starting from real events or visible economic problems, (2) Developing theories so that they can explain facts with rational thinking, (3) Conducting analyzes that generally use problem-solving models, (4) Looking for the best solution in a problem, (5) Born due to limited resources.

As explained earlier, the subject is thick with problem-solving methods. In learning, this method is commonly referred to as Problem Based Learning (PBL). PBL is a learning approach that forms part of a broad scope. PBL is about how we can identify unknown keys and is an appropriate way to solve a problem. PBL does not require someone to master basic knowledge before solving a problem but allows for the creation of different understandings and abilities. PBL has the advantage of creating motivation, engagement, and student workability (Chartlon-Perez, 2013). Many say that PBL can encourage students to learn better and can cultivate memory and learning skills that can later be transferred into life practice. PBL is said to be very flexible in the sense that it can be used in various ways and any context can also be a link between cognitive, practice, and knowledge development (Salari et al., 2018). The learning process of Problem Based Learning (PBL) has several processes in its application. The PBL model consists of seven steps which include clarification of terms and concepts, formulation of problem statements, the conceptualization of ideas, categorization and structuring of ideas, formulation of learning objectives, decision making through independent study, and conclusions with peer evaluation (Sari, 2020). By paying attention to the seven steps of the PBL process, students in learning spend a lot of time discussing problems, formulating initial assumptions about a problem, determining relevant facts, seeking related information, and determining the definition of the content of their learning (Laili, 2016). Some of the benefits of PBL learning include the creation of togetherness

between groups, the courage to express opinions, activeness will appear in learning, improve communication skills and improve critical thinking skills (Asni and Hamidy, 2017). In previous research (Pitriani, 2019) it was found that PBL contributes to the emotional intelligence of students and can create an interactive atmosphere so that learning is far from boring and uncomfortable.

Several methods can be used in economic learning that lead to a problem-solving process such as the inquiry approach method, Discovery learning, and Project-Based Learning (PjBL). The determination of the use of learning methods must be adjusted to the results of the analysis of the competency demands to be achieved and the assessment (Ministry of National Education, 2013). In this case, it can be interpreted that every teacher must understand well the characteristics of the material before determining the learning method to be used.

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Inquiry Approach (Inquiry) is an approach that involves the active participation of students to research a problem collaboratively which is then linked to the knowledge previously possessed so that meaningful learning will be created (Octavany, et al., 2018). Inquiry learning also positions students more as learners in the sense that students are more dominant in learning on their own and developing problem-solving creativity through the process of asking questions and finding solutions to existing problems (Tjiptiany, et al. 2016). Through inquiry learning, students not only learn about scientific facts from a predetermined knowledge but learn to think like scientists through exploring ideas, studying language, and practice (Hollingworth and Vandermaas-Peeler, 2017). This allows students to combine language, words, mathematics, and experience with knowledge so that they can develop linguistic abilities as adults. In inquiry, the teacher's role is to facilitate students' questions through understanding concepts, the research process, and the process of knowing scientific understanding and how to communicate knowledge (Van Uum, et al. 2017).

Discovery Learning is a learning process where a concept is not presented in a semi-finished form or it can be said that it is still immature, with this students are asked to be able to organize concepts independently to become a mature concept (Muhamad, 2017). the principle of discovery learning is not much different from the inquiry. In discovery learning, problems are the result of teacher engineering, different from inquiry, where the problem is a real situation, so students must optimize their minds and skills to find findings in a problem through research. Several benefits will be obtained after doing discovery learning which includes increased motivation, involvement and creativity, independence, and the ability to organize an invention which will later be able to facilitate the transfer process to other students (Qodariyah and Hendriana, 2015). Discovery learning is a process of rediscovery of the principles of Science, Technology, Technical, and Mathematics (STEM) developed by Piaget which involves curiosity that arises from students through asking, discussing, and expressing an opinion based on the abilities possessed which then able to be organized and formed into action for various reasons. Several studies have shown the relationship between intelligence and discovery learning. Discovery learning can improve children's naturalist intelligence as long as the teacher can design learning with good planning (Batubara, 2020). In addition, discovery learning is also able to improve students' mathematical logic intelligence and can increase the active involvement of students.

Project-Based Learning (PjBL). PjBL is a learning model that motivates students to increase activeness in learning, where students are required to identify, collect data, and utilize the data as problem-solving materials (Fauzia & Kelana, 2020). PjBL has a special characteristic in the form of activities to design and run a project that aims to produce a product. This learning also provides direct learning experiences to students through project-based activities which eventually form a product (Ardianti, et al., 2017). Students who follow the PjBL learning method will have the support for the development of their potential. This is formed by the activities of designing and creating projects in PjBL learning practices. The Association for Supervision and Curriculum Development (ASCD) explains that PjBL is a form of authentic learning that focuses on the problems that surround us and the problems that exist in the real world. The role of the teacher in this learning is as a facilitator who guides students in finding solutions to problems and solution options from students are important elements of the learning process so teachers must always supervise decisions and always support students in carrying out the entire process (King and Smith, 2020). The purpose of PjBL itself is to facilitate the investigation of a problem involving student activity by always generating curiosity that naturally arises from students and sparking questions from students (Tsybulsky, et al., 2020). Authenticity and social interaction in PjBL are important components to gain in-depth knowledge of a material, topic, or any domain. Olkiunura (Young and Legister, 2018) states that PjBL must provide a solution to a problem, involve the active participation of students, produce a product (reports, documents, etc.), provide the possibility of continuous learning for a long time, and have an advisor in concluding. PjBL creates a social interaction through concepts, linking practice with a theory that helps minimize knowledge gaps and problems that students commonly encounter in real life. PjBL can create students' emotional intelligence that is better than the emotional intelligence of students who are taught using direct learning methods (Ilyas, 2017).

The variety of learning methods that exist in economic subjects that are dominant in the problem-solving process are essentially developed based on the principles of curriculum development. These principles include engaging, evolving, evocative, and existential principles (Ministry of National Education, 2013).

2.2 Multiple Intelligences

In this century intelligent people are people who can work according to orders and are always competent in their work wherever they are placed (Safri, 2019). Everyone has different strengths and intelligence. Gardner (Supriyanto, 2019) explains that intelligence has three definitions. First, intelligence is the ability to solve problems that occur in everyday life. Second, intelligence is the ability to create new problems that can later be solved. Third, intelligence is the ability to create or offer a service that creates value in one's culture.

Based on Gardner's theory of multiple intelligences (Safri, 2019) intelligence is divided into nine types of intelligence which include linguistic intelligence, logic-mathematical intelligence, spatial intelligence, bodily agility intelligence (kinesthetic), musical intelligence, interpersonal intelligence, personal intelligence, naturalist intelligence, and existential intelligence. In essence, a person's intelligence can still be developed according to the level of ability he has. The development of a person's intelligence is influenced by several factors including biological factors, life experiences, and environmental factors (Amini and Naimah, 2020).

Linguistic intelligence can be interpreted as the ability to process words effectively orally and in writing and usually, someone who has good linguistic intelligence has an advantage in the field of language studies. With linguistic intelligence, a person will be able to translate

problems with good words and language so that the process of finding solutions is easier to relate to mathematical concepts (Fitriani, et al., 2018).

Mathematical logical intelligence is an ability related to logic and numbers and is related to sensitivity in finding a pattern that will be used to calculate calculations, think abstractly, logically, and scientifically. Someone good in reasoning, sequencing, thinking causally, formulating hypotheses, regular in numbers and concepts, and rational in thinking are the characteristics of people who excel in mathematical logical intelligence (Nurjanah, et al., 2019).

Visual-spatial intelligence is intelligence in understanding, processing, and thinking in the form of images (graphics, relations, colors, lines, shapes, and space (Nurhidayati, 2015). There are three indicators of intelligence, namely imagination, conceptualization, and problem-solving. Having visual-spatial intelligence can translate the form of the picture that is in the mind into a two- or three-dimensional image which is very much needed in understanding the problems that exist in real life. Visual-spatial intelligence is not only about graphic design but can also be used in studying social problems from a spatial point of view (Wahyudi, 2011).

Body agility intelligence according to Gardner (Matto, et al., 2013) is the ability to use all members of the body through facial expressions, movements, and gestures to solve a problem and the ability to use limbs to communicate and express. Body agility intelligence is often owned by athletes and craftsmen who have good body coordination.

A person with strong musical intelligence can easily remember the music and anything that contains music. Musical intelligence refers to the ability to think in music. Musical intelligence is defined as the ability to understand, hear, recognize, remember, and possibly use scales or melodies. Musical intelligence has a relationship between tone patterns and sensitivity to sounds that come from the environment and human voices (Atqa, et al., 2018).

Interpersonal intelligence is the ability to understand other people which includes motivation, ways of working, and cooperation. Interpersonal intelligence is also the ability to be sensitive to the feelings of others. This intelligence is often called social intelligence which is not only related to the ability to make friends but also includes the ability to lead, organize, find solutions to a problem, and how to gain the sympathy of others (Maulidah and Santoso, 2012).

Interpersonal relationships can be temporary or permanent, interpersonal relationships have a tendency to be able to persuade each other, share feelings and thoughts in carrying out joint activities. Interpersonal intelligence is closely related to how to communicate in the context (Majdi and Ichsan, 2019).

Personal intelligence is a person's ability to know the abilities that exist in oneself, including one's strengths and weaknesses, and being able to act adaptively based on self-knowledge. Personal intelligence is also defined as the ability to use information about oneself effectively to regulate one's life and make decisions in life. People who have personal intelligence tend to be thinkers, which can be seen from how they routinely make self-assessments. In addition, people with high personal intelligence should be more daring to show something in front of others as a form of self-actualization (Nurlia and Anggo, 2020; Andesta, 2018; Adiarto, 2017).

Naturalist intelligence emphasizes more on how a person can recognize and classify living things that exist in nature and classify their various species. Students with high naturalistic abilities will have a good sensitivity to the development of the surrounding natural environment (Nurlia and Anggo, 2020).

Existential intelligence is defined as the ability that emphasizes more on a person, namely thinking.

Existential intelligence also has meaning as the ability to ask fundamental questions related to the existence or complexity of existence. A person will think more about himself and the processes that have occurred and will occur. Students with existential intelligence are seen to often synthesize ideas based on their learning and tend to view information relative to the context presented.

The intelligence that exists in a person can still be developed according to the desired abilities in various ways. Each intelligence can be trained through learning activities, the use of supporting tools and media, instructions, and how the teacher carries out his role. Linguistic intelligence can be trained through reading, writing, speaking, and listening activities. Logical-mathematical intelligence can be trained by measuring, critical thinking, compiling, logical frameworks, and conducting experiments. Spatial intelligence can be improved by doing the process of seeing, drawing, visualizing, coloring, and mapping thoughts. Kinesthetic intelligence can be raised by forming, acting, touching, training guts, and dancing. Musical intelligence can be grown through singing, listening, and rapping activities. The activities of teaching, collaborating, interacting, and respecting each other can train one's interpersonal intelligence. Likewise, connecting something to personal life, choosing related to personal life, and contemplating is also able to train one's intelligence. Naturalist intelligence can be grown by connecting things with natural conditions (Amini and Naimah, 2020).

3. METHODS

The research method used in this study is a literature study research method. A literature study is an attempt to collect information related to the topics or problems that will be used as research. Information in this study can come from books, reports, scientific articles, regulations, regulations, and other sources, both written and electronic media. This research process is carried out by collecting information related to the characteristics of economics and continuing to collect information related to various types of intelligence. From the information collection process, an analysis process will be carried out to find answers to the problems through assessment and comparisons of information that has been obtained.

4. RESULTS AND DISCUSSION

Economic problems in life will always exist in everyday life. This also happens because of the nature that humans have towards the need that always feels lacking for what is provided in this life. We can judge that the economy is something that is most needed in human life, both in science and practice in everyday life. In the previous explanation, it has also been explained that economics comes from facts or existing economic problems. Economics learning is needed and must be taught from an early age. With more economic learning towards solving existing economic problems, it would be better if introduced early so that future generations will be able to be wise and rational in solving economic problems that will be faced.

In principle, the intelligence possessed by humans can be formed and trained as Thomas Armstrong said in his book *Multiple Intelligences in the Classroom*. The characteristics of economics subjects will directly train some of the intelligence that has been categorized by Howard Gardner that humans have both through learning models and the content of economics subjects themselves. Exercises that train human intelligence in economic learning are more dominated by the characteristics of economic subjects that talk about facts or

problems that occur and later serve as things that must be solved through appropriate learning methods in economics learning.

The linguistic intelligence of students in economic learning is developed and will be formed through how students can translate a problem in the form of good words and language. Economics learning is a subject that has the characteristics to find the best solution to a problem. Indirectly, students in economics learning will get used to reading to find a basic solution to a problem, write down solutions that have been obtained from information that has been read, reveal a solution that has been made, and listen to input and criticism of a solution made through activities. discussion. These reading, writing, expressing, and listening activities are very thick in economic learning activities with an inquiry model that positions students more as learners in the dominant sense of self-study. So in economics learning will train students' linguistic intelligence.

In economics, the problem of numbers will always exist and be discussed especially in development economics which discusses the country's economy such as inflation rates, economic growth, prices, etc. This requires students to calculate the number through formulas to get the number of the variables to be searched. With that mathematical logical intelligence will be formed for students who follow economics learning. In addition, logical-mathematical intelligence can be formed in economics learning which often focuses on finding a solution to a problem by making a hypothesis about a problem and thinking about the cause and effect of the problem so that the solution to the problem can be counted reliably.

From the process of calculating certain variables, usually, the growth or development of an economic variable will be presented in the form of graphs, lines, shapes, etc. When students are presented with a graph or line, students must be able to form an understanding or purpose from a graph they see. The activities of students who can interpret a graph can also be said to be able to see, draw, and visualize as well. Activities from interpreting to visualizing an image, graph, etc. are a form of exercise for visual-spatial intelligence. In addition to tying a graph, visual-spatial intelligence in economics learning can be done through learning using the discovery learning model and mapping the concept of an economic problem that is characteristic of economics subjects.

Today's 21st-century learning is learning that must contain 4C values (Critical thinking, Creativity, Collaborative, Communication). These values are applied to all subjects, including economics. Economics learning, which is characterized by finding solutions, does provide opportunities for all students to provide their views on a problem. This is following the principles of engaging and evocative economics learning where learning must provide opportunities for dialogue between teachers and students and learning must be able to accommodate differences in views and opinions on economic material. Differences in views will be even stronger if they have collaborated through cooperative learning. Through collaborative learning students will learn to teach, collaborate, interact, and be able to respect each other. This makes economic learning able to improve students' interpersonal intelligence. The existence of dynamic student interaction will indirectly form interpersonal intelligence.

Teachers who act as facilitators in learning must occasionally be able to provide a story or life experience that is related to the learning material. This will enable students to reflect and then continue to evaluate themselves. By telling the experience to students, it will make students ponder if in economics it is not only about numbers but also ethics is needed. From there, students will conduct an assessment of themselves regarding their activities so far. Frequent self-assessment is a form of exercise in developing personal intelligence. Self-

assessment can also be seen when project-based learning, such as students making financial reports in accounting, we must be thorough, honest, careful, etc. to get the right results. This is also a form of exercise in developing personal intelligence. It is undeniable that studying economics can improve the personal intelligence of students.

The material in learning must adapt to the conditions that exist in society. Likewise, the material in economic learning continues to develop learning materials according to existing conditions. The issue of global warming that was intense in the early 90s gave special attention to people's lives. With this issue, the community must be able to consider natural factors in carrying out their daily activities. And that also happens in economics subjects that include environmental factors in the content or learning materials. The development of this environment-based economy trains students to increase naturalist intelligence. As we know that naturalist intelligence can be grown by connecting content or learning materials with environmental factors.

The development of musical intelligence, kinesthetic intelligence, and existential intelligence is not so dominant in economics learning. This does not mean that these three bits of intelligence cannot be developed in economics learning. These three bits of intelligence may be able to play a role in developing the intelligence of students with teachers who can create a combination of creative and innovative learning methods. For example, to memorize a theory or formula in economics, teachers use song media to make it easier for students to memorize theories or formulas.

5. CONCLUSION

Economics learning which has more characteristics to find solutions to economic problems that occur provides the potential to train multiple intelligences according to the theory presented by Howard Gardner. Based on the material content and characteristics, economics learning has great potential to form six of the nine types of intelligence which include linguistic, logical-mathematical, spatial, interpersonal, personal, and naturalist intelligence. Musical, kinesthetic, and existential intelligence does not mean that it cannot be formed in economics learning. Musical, kinesthetic, and existential intelligence can still develop in the economy but it takes hard work, creativity, and teacher innovation in combining economic learning methods that can train these three bits of intelligence. Economics learning can be said to be a field of science that can complexly shape the intelligence of students, although not all intelligence is capable of being dominantly formed.

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