

# Analysis of Learning English Based on Multiple Intelligence with a Constructivism Approach

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## ABSTRACT

The purpose of this study was to analyse the urgency of learning English online based on multiple intelligences with a constructivist approach. The form of this research is descriptive qualitative using case studies. Sources of data consist of informants, places (events), and documents. Techniques or data collection methods used in this study were (1) Interview, (2) Direct observation, (3) Document study. The data analysis technique uses interactive analysis techniques which include three components, namely data reduction, data presentation, drawing conclusions or verification. The results showed that 1) the factors that influence the development of student intelligence have been identified, namely internal factors and external factors; 2) English online learning based on multiple intelligences with a constructivism approach needs to be applied in order to support the achievement of educational goals; and 3) have identified as many as 5 learning models that are suitable to be integrated with multiple intelligences through the constructivism approach. In conclusion, English online learning based on multiple intelligences with a constructivist approach is important to be applied to students. So, it is necessary to develop a decision support system application to determine a multiple intelligence-based learning model that can make it easier for lecturers to carry out an effective learning process. and 3) have identified as many as 5 learning models that are suitable to be integrated with multiple intelligences through the constructivism approach. In conclusion, English online learning based on multiple intelligences with a constructivist approach is important to be applied to students. So, it is necessary to develop a decision support system application to determine a multiple intelligence-based learning model that can make it easier for lecturers to carry out an effective learning process.

**Keywords:** *online learning, English, multiple intelligence, constructivism*

## 1. INTRODUCTION

Internet courses have several interchangeable names; distance education, distance learning, web-based instruction, e-learning, virtual schools, online education, and flexible and distance learning. However, distance education could be defined as: "Institution-based, formal education where the learning group is separated, and where interactive telecommunications systems are used to connect learners, resources, and instructors" [1]. Distance education is not the same as self or independent study because distance education must be institutional based. There must also be a separation between the instructor and students; this separation

could be time or geographical. A survey of administrators reported that some schools are not simply using online classes but offer a hybrid course. These schools blended face-to-face instruction with online interaction [2]. Courses are referred to as hybrid, blended, or a mixed method approach. With the new and rapid growing trend of distance education, it is imperative that educators understand the techniques for online components and the needs of the student enrolled in distance education or blended courses [3].

The understanding that students gain new concepts and knowledge by building onto what they already know is known as the constructivist approach to

teaching and learning. There needs to be a focus on the individual learner. Using a variety of instruction in distance education would incorporate different learning styles and create more opportunities for learners to build upon prior knowledge and experiences. The majority of current educational reforms focus on teaching to individuals and their needs, interests, and abilities. Therefore, it is important for educators to identify and differentiate their instruction to address the various learning styles whether in face-to-face classes, online, or blended interactions [3].

What do we mean by intelligence? When most people speak about intelligence, they are generally referring to cognitive ability, “intelligence quotient”, or IQ. More than a century ago, Alfred Binet developed a written test to measure the IQ of elementary school children in France. Later the U.S. Armed Forces began using the test with recruits in World War I. Subsequently, it was used widely in schools and businesses to classify students and select employees, respectively. The Binet IQ Test (Stanford-Binet IQ Test) basically measured two traditional cognitive ability dimensions: verbal/linguistic and mathematical/logical, which were thought to determine intelligence [4].

All individuals, in this case students, are unique, both physically and mentally, even though they are identical twins. Physical uniqueness, for example, is evident in fingerprints. Everyone has different fingerprints. Mentally unique, for example, is observed from the way people respond to an object or event. The object or event is the same, it can be responded to in different ways. Experts say different responses occur because of having different intelligence.

Intelligence is the ability to solve problems or produce something needed in a certain cultural setting [5]. The range of problems or something that is produced starts from simple to complex, including from trying to end the story, determining the steps for a chess game, patching the torn blankets, to producing theories, musical compositions and politics. A person is said to be intelligent if he can solve the problems faced in his life and is able to produce something useful for mankind.

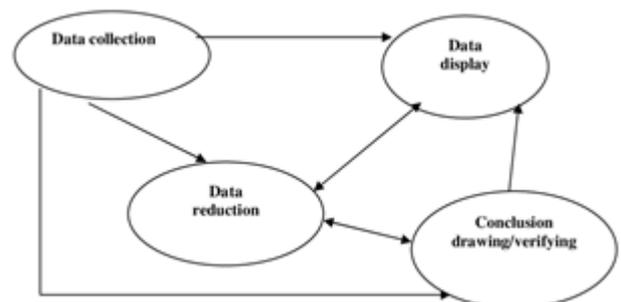
Thus, referring to several definitions of intelligence presented by experts, intelligence is not fixated on academic abilities, but includes a number of one's abilities; both physically and psychologically who work simultaneously to solve problems, adjust themselves, respond to stimuli appropriately and correctly, and so on. According to Howard Gardner, how to respond depends on the type of intelligence you have. So, there is multiple intelligence, and all children have different intelligences. So according to Gardner, basically all children are smart.

Multiple intelligence is a theory of intelligence that was proposed by Howard Gardner who said that "intelligences is the ability to find and solve problems and create products of value I one's own culture". Gardner, in his initial research concluded that there are seven intelligences possessed by humans, namely linguistic intelligence, logical mathematical intelligence, visual spatial intelligence (spatial), bodily kinaesthetic intelligence, musical intelligence, interpersonal intelligence, and intra-personal intelligence. Then in his book *Intelligences Reframed* Gardner adds two intelligences, namely naturalist intelligence and existential intelligence [6].

**2. RESEARCH DESIGN**

This study aims to analyse the urgency of English online learning based on multiple intelligences with a constructivist approach. The research was conducted at the Department of English Language Education, Musamus University in September - October 2020. This type of research is qualitative research. The data in this study are descriptions of observations, statements and writing materials obtained from observations, interviews and collection of research documents. The data sources of this study were 5 respondents consisting of 3 lecturers from the Department of English Education (DBI 1, DBI 2, and DBI 3) and 2 lecturers from the Department of Chemistry Education (DK 1 and DK 2). Data collection techniques are observation, interviews and documents.

The data analysis technique used is qualitative analysis. Qualitative data is data that is descriptive in nature, information, information, in the form of words and not in the form of numbers. In this study, data analysis was carried out and developed during the reflection process to the preparation of reports from beginning to end. The technique used is the Miles and Huberman flow model, namely: data reduction, data presentation, and drawing conclusions shown in Figure 1.



**Figure 1.** Components in Data Analysis [10]

**2. RESEARCH RESULTS AND DISCUSSIONS**

The world of education must be able to respond to multiple intelligences in various learning processes. This is a manifestation of educators' care in facilitating the various needs of students. Multiple intelligences can be built on the basis of talent, social, and religion which can be developed with contextual learning. Education is a process of changing the behavior of each individual expected in the learning process.

The condition that commonly occurs in every learning process is a heterogeneous class condition. This is a problem in itself for lecturers in preparing lesson plans. The results of interviews with respondents about heterogeneous classes are shown in table 1.

**Table 1.** Analysis of lecturers' understanding of heterogeneous classes

No	Respondent	Respondents' answers
1	DB 1	Heterogeneous class is a class condition in which there are various levels of intelligence in the class
2	DB 2	In the classroom, there are various conditions of students, ranging from affective, cognitive, and psychomotor. But usually, students are grouped or unformed based on their cognitive abilities
3	DB 3	Student conditions vary in one class
4	DK 1	A condition that commonly occurs in class, where in one class there are various levels of intelligence. Starting from high, medium, to low
5	DK 2	Heterogeneous class is a class that has variations in terms of intelligence

The results of the interviews show that all respondents have the same understanding of heterogeneous classes. Heterogeneous class is a class with a variety of cognitive intelligence conditions of students as learners. It takes the lecturer's ability to manage a class with this condition. Purnamasari [11] states that the classroom is a microcosm or small world that reflects a larger population; classrooms contain students who differ from each other with regard to socioeconomic group, learning style, family background, religion, sexual orientation, even age. Furthermore, an analysis of the classification of students was carried out based on their cognitive aspects.

**Table 2.** Analysis of the designation of smart children and stupid children

No	Respondent	Respondents' answers
1	DB 1	In general, since school, teachers have classified students into 3 groups. The first group are students who have high logical mathematical intelligence and have high IQ results. So that the first group is often referred to as smart students. The second category is students who have IQ results and logical mathematical intelligence

		abilities that are not too high and moderate. This group is often referred to as ordinary and mediocre students. The third class are students who have low IQ scores and logical mathematical intelligence abilities and are labeled as "stupid" and incapable students. This classification is a misunderstanding and does not respect the uniqueness of the child
2	DB 2	Each student is a unique individual. The nickname of a stupid student based solely on the ability of logical-mathematical intelligence is wrong, but has taken root in people's lives. In fact, not a single student is born stupid. What exists is that the student has not found a suitable teacher for him. The stimulus given will greatly affect the development of the basic potential of each child
3	DB 3	Internal factors, in this case heredity, also affect the mental, personality and physical characteristics of students. The stimulus from the environment in the first year of a student's birth, in this 'method', will greatly influence him. This means that the inability of students to get progress in learning is not caused by internal factors alone, but is motivated by the emergence of stimuli from the external environment of the student, for example the nickname 'stupid child'. The teacher's label of 'stupid child' is an act that is not appropriate in responding to and accommodating differences in students
4	DK 1	It is important to implement multiple intelligence-based learning from an early age. This will provide an extraordinary stimulus for the development of student intelligence. Every parent and teacher and lecturer must understand the essence of intelligence. That each individual is unique. Compound intelligence, if stimulated correctly, will be fully developed. Based on the research results, the development of two or more intelligences alone will produce unique and different combinations in each student
5	DK 2	Every student as an individual has the opportunity to have at least one type of intelligence that is in him from birth. Thus, not one individual can be considered incompetent, because someone who is unable to master mathematical-logical science can be proficient in the fields of verbal and linguistics.

In Indonesia, the terms smart and stupid are commonly experienced by students. This has a psychological impact on students which can be carried

over to higher education. If from the beginning students do not have confidence in their abilities, it will be difficult for these students to master the concept and application of learning materials. Furthermore, an analysis of understanding the concept of multiple intelligences is carried out. The results of the interview are shown in table 3.

**Table 3.** Analysis of multiple intelligences

No	Respondent	Respondents' answers
1	DB 1	Multiple intelligence is a theory put forward by Howard Gardner. That individuals have more than one intelligence
2	DB 2	Various intelligences possessed by a person
3	DB 3	Compound intelligence is the intelligence that a person has in him. Of the nine types of intelligence, a person has at least one type of intelligence
4	DK 1	A person's intelligence is not only measured from the cognitive aspect, but there are several other aspects that should not be ignored. The theory of multiple intelligences was expressed by scientists from England
5	DK 2	Multiple intelligence is a term for the types of intelligence a person has

Table 3 shows that the respondents have an adequate understanding of multiple intelligences. Respondents agreed that multiple intelligence is owned by each individual, in this case students. Respondents also agreed that students' intelligence could not be measured only from its cognitive aspects. Furthermore, an analysis of online learning has been carried out in the English Education Department. The results of the interview are shown in table 4.

**Table 4.** Analysis of online learning

No	Respondent	Respondents' answers
1	DB 1	Since the Covid-19 pandemic, lecturers and students at the Department of English Language Education at Musamus University have been forced to adapt to conditions and situations where the number of face-to-face meetings is held to a minimum. One of the options for implementing learning activities is online learning. Lecturers must do various improvisations and creations so that students can remain enthusiastic when doing online learning, students must also be able to find and dig up as much information independently as possible to then build it as a whole new understanding
2	DB 2	Online learning requires lecturers and students to be more creative in the learning process. Lecturers and students are also required to be self-disciplined

		in following the lecture process. The constructivism approach is a suitable approach to be applied in online learning
3	DB 3	Online learning has become the safest option for both faculty and student health. Although it may not be as comfortable as conventional learning. However, lecturers and students must adapt to the existing changes
4	DK 1	The ability to master the technology of lecturers and students at the Department of Chemical Education at Musamus University was also tested during the Covid-19 pandemic. Lecturers who are creative and technologically capable will be able to take advantage of as many validated sources as possible from the internet. Students who think critically and are technologically capable will also be able to explore learning resources on the internet. This factor will make the learning process richer and more meaningful than the traditional learning process
5	DK 2	In addition to the ability of lecturers to master technology, students' ability in self-management is also required in online learning. It is intended that learning remains on the agreed path since the beginning of the lecture. Students are able to meet the demands of assignments that build knowledge which in turn will provide good learning outcomes

Table 4 shows that online learning has run quite well in the English Education Department. There are several things that need to be improved in the implementation of online learning, namely the creativity and innovation of lecturers and student self-management in enriching the knowledge obtained online. Next, an analysis of English online learning based on multiple intelligences is carried out.

**Table 5.** Analysis of English online learning based on multiple intelligences

No	Respondent	Respondents' answers
1	DB 1	Multiple intelligence-based English online learning is important to apply. Because learning like this provides equal opportunities to all students with their respective types of intelligence
2	DB 2	The ability of students to utilize multiple intelligences has a big influence on the process of learning English online. Students will find the most suitable learning style so that their interest and talents in learning new knowledge will increase
3	DB 3	Lecturers need to prepare effective and efficient English learning even though it is done online. This needs to be

		designed in a fully modified learning model. So that the evaluation process carried out during the learning process can go according to plan and can be measured
4	DK 1	Multiple intelligence-based learning programs must be student-oriented, not on the material or individual profiles of the lecturers who teach the course. Learning preparation including lesson plans, learning activities, instructional media, and learning assessments must be prepared from the start. Lecturers must be able to manage partial information into complete information that is determined as the output of learning activities
5	DK 2	Multiple intelligence-based learning is important to apply. Both online and offline. And should be applied by all fields of science. Thus, every child will feel equity in terms of obtaining education. Because the delivery of knowledge is in accordance with the unique characteristics of each student.

Table 5 shows that English online learning based on multiple intelligences is important to implement. This will provide an even learning experience for every student who has multiple multiple intelligences. However, in reality, no online learning of English has ever been implemented based on multiple intelligences. Lecturers need facilities or support so that the application of multiple intelligence-based learning is right on target and has the right benefits. Furthermore, an analysis of online learning models that are suitable to be applied based on multiple intelligences is carried out.

**Table 6.** Analysis of the suitable English online learning model to be applied while still paying attention to the composition of multiple intelligences

No	Respondent	Respondents' answers
1	DB 1	NHT and STAD cooperative learning models
2	DB 2	Contextual learning model
3	DB 3	PBL and Contextual learning models
4	DK 1	PjBL and PBL learning models
5	DK 2	NHT and PBL learning models

Table 6 shows that the learning models that can be applied include the NHT, STAD, contextual, PBL, and PjBL learning models. This is adjusted to the teaching experience of lecturers in English Education Department students. Next, an analysis of English online learning opportunities is carried out that is suitable for application while still paying attention to the composition of multiple intelligences.

**Table 7.** Analysis of English online learning opportunities that are suitable for application while still

paying attention to the composition of multiple intelligences

No	Respondent	Respondents' answers
1	DB 1	By paying attention to the current condition of Covid-19, learning is more focused in small groups. So that the NHT and STAD learning models are most suitable to be applied. If it is associated with multiple intelligences, students who have the same dominant multiple intelligences can be combined in one group to facilitate the learning process
2	DB 2	With the diversity of multiple intelligences, contextual learning models are the most suitable. Because the learning model focuses on learning carried out in a natural environment. So that students' multiple intelligences can be directed in their natural environment
3	DB 3	In the current condition, by paying attention to the composition of multiple intelligences, a suitable learning model to be applied is the PBL learning model. Lecturers can use the problems that occur around students as a starting point for developing scientific concepts. In addition, the contextual learning model is also suitable to be applied during a pandemic. Students are invited to create a sense of togetherness, work together, and deeply understand each other through meaningful learning
4	DK 1	Problem-based and project-based learning models are suitable to be applied to English online learning. Because this learning model can actively and dynamically construct student knowledge in accordance with the problems and projects raised as learning topics
5	DK 2	The NHT and PBL learning models are suitable learning models to be applied in learning English online. In this learning model, students are easier to arrange according to the varied composition of multiple intelligences

Table 7 shows that the learning model that has been selected by the respondent in the previous question has the opportunity to be applied in the classroom online. The next analysis is about the challenges of learning English online that are suitable to be applied while still paying attention to the composition of multiple intelligences.

**Table 8.** Analysis of the challenges of learning English online that are suitable to be applied while still paying attention to the composition of multiple intelligences

No	Respondent	Respondents' answers
1	DB 1	Challenges may be experienced in

		applying the NHT and STAD learning models during online learning is the discussion process that occurs in groups is difficult to control
2	DB 2	The possibility to face challenges in the form of implementation of learning assistance. Because every time assistance is required, a stable internet connection is required, meanwhile the conditions in Merauke are sometimes unstable
3	DB 3	The challenge in applying contextual learning models and PBL during online learning is that monitoring group collaboration will be difficult because it is done remotely
4	DK 1	The challenge in applying problem-based and project-based learning models is the demand for independence of students in finding solutions based on multiple perspectives from various fields of science
5	DK 2	Challenges that may be faced are internet connection in the implementation of learning

Table 8 shows in general the challenges that will be faced in online learning are internet connection. As it is known, internet connections in Papua are generally less stable, so that monitoring of the learning process becomes obstructed. Furthermore, an analysis of the development of a decision support system application is carried out that helps to connect multiple intelligences with learning models.

**Table 9.** Analysis of the development of a decision support system application that helps connect multiple intelligences with learning models

No	Respondent	Respondents' answers
1	DB 1	Very good
2	DB 2	Very good. It will really help the lecturer in planning learning in class
3	DB 3	Interesting
4	DK 1	Really worth a try
5	DK 2	Very good

Table 9 shows that all respondents agreed to support the decision support application development plan which aims to assist lecturers in applying the learning model according to the dominant multiple intelligences in the class. This application will be one of the facilities needed by lecturers who want to implement multiple intelligence-based learning. Furthermore, an analysis of related application development suggestions is carried out

**Table 10.** Suggestions related to the development of this application

No	Respondent	Respondents' answers
1	DB 1	This application should be applied in all fields of science
2	DB 2	This application should be easy operation and gives valid results
3	DB 3	Applications can also be used to identify multiple intelligences for each student
4	DK 1	No suggestions
5	DK 2	This application should be able to accommodate user needs, in this case the lecturer in determining the best learning model

Table 10 shows that respondents expect the application to be developed to be able to meet the needs of lecturers as facilitators in the classroom. This shows that it is necessary to develop a decision-making system application that can help lecturers in determining the learning model to be applied in the classroom.

#### 4. CONCLUSION

English online learning based on multiple intelligences with a constructivist approach is important to be applied to students. So, it is necessary to develop a decision support system application to determine a multiple intelligence-based learning model that can make it easier for lecturers to carry out an effective learning process.

#### ACKNOWLEDGMENT

Gratitude is given to the Chancellor of Musamus University and the Chair of the Musamus University LPPM who have provided the opportunity and funded this research through the DIPA UNMUS 2020 Applied Research Grant. Thanks are also conveyed to the Musamus University FKIP Leaders, fellow lecturers and students who have collaborated in research.

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