

Multiple Intelligence-based Instruction to Increase Students' Intrinsic Motivation in Learning English

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Abstract

The one-for-all approach has long been a concern in the educational field as it influences learners' learning capacity negatively. However, it is still practiced by many teachers in Indonesia. This study aims to investigate the effectiveness of Multiple Intelligence-based instruction to increase students' intrinsic motivation in learning English. It used a quasi-experiment design, and the participants were 40 non-English department students in UIN Walisongo Semarang that were selected using purposive sampling. Activity Perception Questionnaire from Intrinsic Motivation Inventory was used to measure students' experience of given activities. Analyzed using Mann-Whitney U test, it was found that Multiple Intelligence-based instruction was effective to enhance the value or usefulness, interest, and perceived choice of students. These aspects were critical in the process of internalization and integration, which led to higher intrinsic motivation.

Keywords: Multiple Intelligence-based Instruction; Intrinsic Motivation; Internalization and Integration; One-for-All Approach

1. INTRODUCTION

English language learning has been a challenge for students in Indonesia (Jon et al., 2021). Perceiving English as a language completely different from their mother tongue, they find it difficult to acquire a substantial concept of the language. On the other hand, instructional activities which do not engage learners and give them less opportunity to practice the skills have made learning becomes discouraging for them. Moreover, teaching schema which does not relate to learners' world has made them difficult to connect English with their real life.

Another practice that lessens the quality of teaching and learning is the uniformity of instruction. Teachers tend to use one-for-all approach to teach

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English to students. All learners are used to be considered to have uniform characteristics, abilities, and even interests. One instructional design is forced to fit their needs which it does not match for all learners.

Whereas, learners have their own uniqueness, so-called individual differences, that define how they learn something. The evidence that learners are different is sometimes ignored to some extent. According to Bandura's theory of learning (Hannum & Buchmann, 2005), the components of learning itself (self-efficacy, self-regulation, and modeling) are largely influenced by individual differences between learners. Bruner, then, also states that individuals differ in what type of prior knowledge they bring to a learning task. Each individual has a cognitive structure built from prior learning experiences, which differs from any other learner. Skinner would propose that individual differences among students come from the fact that each student comes from different environments in which their learning behavior has been shaped and reinforced in various ways. It means that when they come to class, they bring with them a package of differentiated traits that distinct them from another. In the other word, classrooms are fulfilled with a diverse group of students who have a broad range of learning characteristics.

Furthermore, linking to the belief that every learner is different, Howard Gardner (Campbell et al., 2008; Shearer & Karanian, 2017; Yaumi et al., 2018), a Harvard psychologist, argues that individuals have ability to solve problems in different ways and own multiple ways to be smart. Such abilities that differentiate one from another in perceiving things are known as multiple intelligences. He states that thinking of intelligence is not necessarily about linguistic and logical-mathematical abilities, as what have been practiced in the learning activities and assessment (Sternberg & Williams, 2009). Rather, we should realize the facts that learners may have musical, spatial, bodily-kinesthetic, interpersonal, intrapersonal, or naturalist abilities that characterize their intelligences which make them differently intelligent. These differences, then, impact on the way they react on or figure out a certain activity, including learning.

Knowing such facts, it is imperative that the use of a one-for-all model of instruction should be reconsidered as it is unlikely to value learner differences. When this practice is still used, there is a chance that students will lose their motivation to learn English (Ryan & Deci, 2017). Whereas motivation is an instrumental motor for an individual in achieving goals. Ryan and Deci (Ryan & Deci, 2000) asserted that motivation can be enhanced when students' basic psychological needs are met. They are autonomy, competence, and relatedness.

Many studies focusing on Multiple Intelligences-based instruction have been conducted. Some of them examined its effectiveness in teaching English skills (Maulida, 2021; Ridwan, 2016; Soleimani et al., 2012; Winarti et al., 2019), other studies were also conducted by connecting MI with disable students' self efficacy (Pordanjani et al., 2019), teachers' performance and

belief (Faidah & Fauziati, 2019; Yaumi et al., 2018), and neuroscience of intelligence (Shearer & Karanian, 2017). A broader scope of research was also done to evaluate educational policy from the perspective of multiple intelligence (Hanafin, 2014).

Despite a vast number of studies on the given area, research that focuses on how multiple intelligence principles are framed within the motivational framework to see its impact on students' intrinsic motivation is not yet adequately studied. Hence, this study offers novelty by scrutinizing the effectiveness of Multiple Intelligences-based instruction to increase students' intrinsic motivation. It was hypothesized that MI-based instruction is effective in boosting students' intrinsic motivation. Through this research, it is expected that the broader potential of implementing multiple intelligence principles can be uncovered to create meaningful learning for students.

2. LITERATURE REVIEW

2.1 Multiple Intelligences Theory

According to Gardner (Gardner & Harvard, 2003; Morgan, 2021), human intelligence consists of three components: ability to resolve problem encountered in life, ability to create a product that is beneficial for one's culture, and ability to find or create problems that enables an individual to acquire new knowledge. After conducting number of research, he realized that intelligence was expressed in multiple forms. The theory which is derived from this finding is known as multiple intelligence.

Furthermore, Gardner classifies human intelligences into eight areas i.e. (1) linguistic intelligence, which includes ability to express oneself orally and in writing and to appreciate complex meanings; (2) logical-mathematical intelligence, which embraces ability to use logic and reasoning to solve problem, calculate, quantify, consider propositions and hypotheses, and carry out complex mathematical operation (Armstrong, 2003; Campbell et al., 2008); (3) bodily-kinaesthetic intelligence, an ability to use various physical skills, integrate the harmony of mind and body movement (Campbell et al., 2008; McKenzie, 2009); (4) visual spatial intelligence, an ability to use spatial reasoning to work on things dealing with graph, charts, maps, tables, illustration, art, puzzles, costumes, and many other materials (McKenzie, 2009) and to picture ideas before verbalize them into words or practices; (5) musical intelligence, an ability to see pattern, not only in songs or instruments, but also in poetry and mathematics; (6) interpersonal intelligence, an ability to communicatively interact and cooperate with others; (7) intrapersonal intelligence, a capacity to understand oneself, his/her feeling, and to use such reflection to plan and direct his/her life (Gardner & Harvard, 2003); (8) naturalist intelligence, an ability to see the pattern in the natural environment. From the general principles of different types of intelligence, it is very important to consider learners' diverse domains of intelligence to create meaningful learning for them.

2.2 Self Determination Theory

In this theory, Ryan & Deci (2020) revealed that humans have the innate ability to be enthusiastically involved in an activity. They also have desire to develop, achieve achievements, learn new things, and apply their abilities. In addition, each individual has psychological needs that must be met to maintain the sustainability of the process of development, integrity and happiness (Ryan & Deci, 2017). someone will have high motivation in an activity when his three basic psychological needs are met, which include autonomy, competence, and relatedness (Cook & Artino, 2016; Deci & Ryan, 1994; Ryan & Deci, 2017, 2020). Autonomy is control over what an individual needs to do. It is closely related to voluntary behavior to engage in activities perceived to have value and be able to arouse interest in the individual. Then, competence is desire to excel and belief that a person has the capacity in a particular field which then make them excited and motivated to achieve the desired or targeted output. Meanwhile, connectedness is a feeling of attachment and a sense of belonging to a group. As social beings who have a tendency to connect and interact with a community, people feel will feel exist when they have an emotional connection with those around them.

3. METHODS

This research used quasi-experiment method to test the effectiveness of Multiple Intelligences-based instruction for improving intrinsic motivation. The participants of this study were non-English department students of UIN Walisongo Semarang. The locus was chosen based on the consideration that the students came from various backgrounds and places in Indonesia. Hence, representative data could be gathered in this way. In addition, by selecting non-English students, it was expected that more fundamental findings could be obtained related to instructional design and intrinsic motivation.

In total, 40 students participating in this study were selected using purposive sampling. They were divided evenly into two categories i.e. control and experiment groups, in that, the former was given conventional teaching activities while the latter was provided with multiple intelligence-based instruction. The activity design is depicted in figure 1 below.

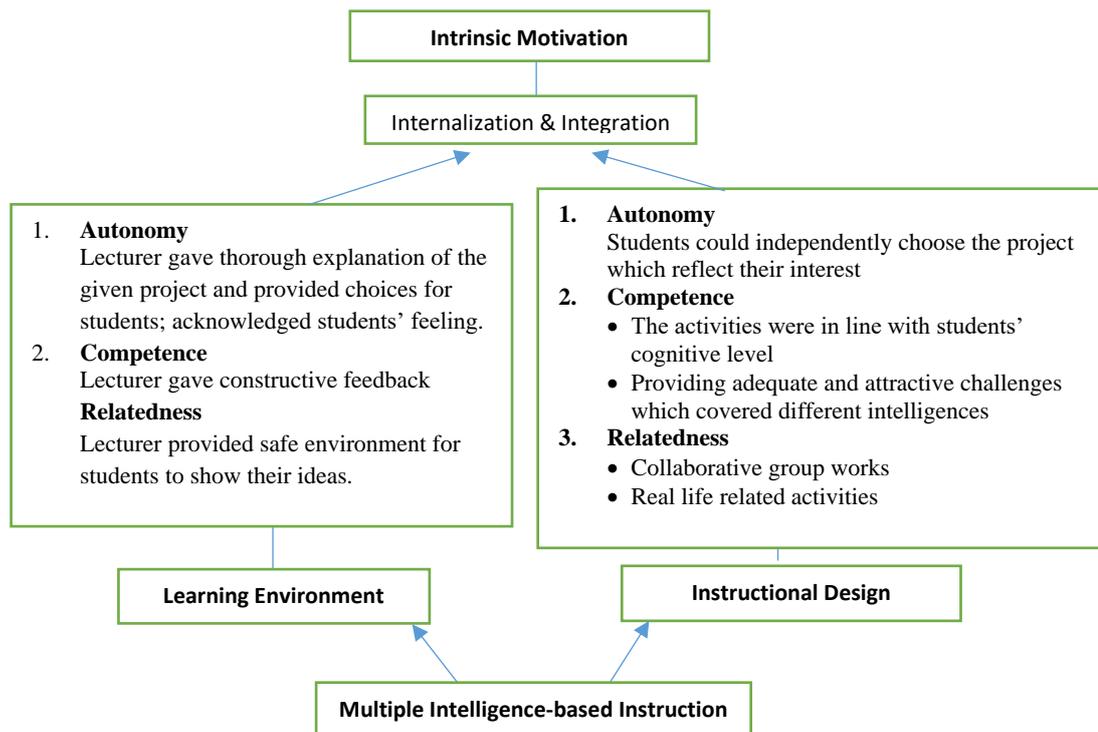


Figure 1. Multiple Intelligence-based Instruction Design

This instruction was designed by integrating between the MI theory and SDT in order to increase students' intrinsic motivation by acknowledging their domains of intelligence.

The data was collected through pretest and posttest, which were distributed to both groups. Activity Perception Questionnaire from Intrinsic Motivation Inventory (Ryan & Deci, 2020) was used in this study. It has been widely used by many research (Heindl, 2020) and has been proved as a valid instrument (Ostrow & Heffernan, 2020). There are 25 questions which cover the information about respondents' perspectives on value/usefulness, interest/enjoyment, and perceived choice. The obtained data, then, was tested to check the level of its normality distribution. After that, the data was analyzed using Mann-Whitney U Test to examine the hypothesis of this study. Finally, the results were interpreted and discussed further by connecting them with the used theories in order to reach the conclusion of the research.

4. RESULTS

The data were presented in three stages: (1) The Mann-Whitney U test on pretest scores; (2) descriptive statistics of posttest scores of both groups; and (3) The Mann-Whitney U test on posttest scores.

4.1 The Mann-Whitney U test on pretest scores

Table 1. Mann-Whitney U Test on Pretest Results of Control and Experiment Groups

Test Statistics	
	Motivation in Learning English (Pretest)
Mann-Whitney U	185.500
Wilcoxon W	395.500
Z	-.401
Asymp. Sig. (2-tailed)	.688
Exact Sig. [2*(1-tailed Sig.)]	.698 ^b

From the table above, it can be seen that the p-value was more than 0.05 significance or $p > 0.05$ ($p = 0.688$). It means that there was no significant difference in the motivation owned by the students. In other words, they had relatively the same starting point in their experience of English learning.

4.2 Descriptive Analysis of Posttest Results

Table 2. Descriptive Statistics on Posttest Scores

Statistics		Control	Experiment
N	Valid	20	20
	Missing	0	0
Mean		9.25	12.35
Std. Error of Mean		.464	.233
Median		9.00	12.00
Mode		8	12 ^a
Std. Deviation		2.074	1.040
Variance		4.303	1.082
Range		8	3
Minimum		6	11
Maximum		14	14
Sum		185	247

The descriptive analysis above shows that the mean of pretest score on control group is 9.25 while the experiment group is 12.35. Despite the clear gap on the scores, a further analysis needed to be conducted to see if there is any significance difference between the values.

4.3 The Mann-Whitney U test on posttest scores

The next test analysis was conducted to test the effectiveness of MI-based instruction given to the experiment group. Further, it was intended

to see whether there was any significant difference between both groups. The result of the test is presented below.

Table 3. Mann-Whitney U Test on Posttest Results of Control and Experiment Groups

Test Statistics ^a	
	Motivation in Learning English
Mann-Whitney U	42.000
Wilcoxon W	252.000
Z	-4.323
Asymp. Sig. (2-tailed)	.000
Exact Sig. [2*(1-tailed Sig.)]	.000 ^b

Table 3 shows that the p-value which was less than 5% significance or $p < 0.05$ ($p = 0.000$). It indicates that there was significant difference between students who learnt English through MI-based instruction (experiment group) and those who were given conventional strategies (control group).

5. DISCUSSION

This study proved that MI-based instruction was effective in increasing students' intrinsic motivation to learn English. English instruction which was designed based on the principles of Multiple Intelligences was able to attract students' attention to improve their language skills. This study was an evidence that the acknowledgment of different dimension of human intelligences gave opportunity to learners to fulfill their basic psychological needs, i.e. the desire to have autonomy, to develop their competence, and to connect to others (relatedness).

For recent decades, we have already been trapped by the notion of intelligence. They used to be associated with linguistic, logical, or mathematical abilities. This phenomenon was clearly captured in the popularity of the IQ (intelligence quotients) test to define an individual's intellectual capabilities (Ganuthula & Sinha, 2019). First motored by Alfred Binet (2012), it has received criticism for various reasons. First, it does not provide the space for measuring creativity (Kaufman, 2015). Second, it does not suit more diverse cultural contexts (Edwards-Schachter et al., 2015). Discouraging categorization made out of the test result has been another criticism emerging from this (Ziegler & Stoeger, 2012).

In relation to that, teachers are in a tricky situation. Some of them think that when they use particular ways to make sense of certain concepts, their students will also understand such paths. Intentionally or not, teachers, design their classrooms to reflect their ideas about intelligence and how learning happens as well as their own ways of comprehending things (Sternberg & Williams, 2009). Whereas, children may actually think, solve problems, and

express themselves in different ways than their teachers do. It turns out that learners grab the knowledge and achieve the learning goals by keeping their interests aside. Some of them can catch up with it, while others are left behind. Students whose dominant intelligences suit the teaching may run better than those who are in different kinds. It is clear that the use of one-for-all approach in teaching has made the potential of learners have been locked in isolation (Ark et al., 2006).

Gardner (on (Sternberg & Williams, 2009)) argues that using a one-for-all approach does not adequately capture human problem solving capabilities. He, then expands the traditional notion of intelligence beyond linguistic and mathematical competencies, and redefines what intelligence is (Campbell et al., 2008).

The implementation of MI-based instruction has allowed learners to elaborate their learning capacity by activating different parts of intelligence. It enables them to explore various skills highly needed in this 21st century (Geisinger, 2016), that is, learning skills, literacy skills, and life skills. The first category entails how an individual should have ability to communicate their ideas clearly, collaborate with others, activate their critical thinking, and solve the problem, bring up creativity and innovation. MI-based instruction which was designed to make learners work together in groups allowed them to exercise their communication skills. Besides, they should collaborate each other and think critically and creatively in order to solve the problem given and complete the task. Literacy skills, then, are related to how learners use media, information, and technology effectively. In MI-based instruction, students were encouraged to do research by selecting reliable information, analyzing the data based on their needs, and synthesizing the data they collected to support their project. The last skills demanded in the 21st century are life skills, which embrace leadership, responsibility, productivity, accountability, social and cross-cultural skills. The project included in the MI-based instruction required high level of those skills to be activated in order to yield a product that was satisfying for them.

Further, MI-based instruction was proven to meet students' basic psychological needs. The students were given autonomy to choose a project they are interested in. According to Gardner (2003), an individual interest and desire is motored by the dimension of their intelligence. Giving the freedom for them to choose what to do is the affirmation and acknowledgement of different capacities owned by each student. The project also provided tasks which were within their cognitive levels and at the same time a measurable challenge to improve their skills. It gave them confidence to show themselves in the form of ideas and performances while having them learn new language skills. In this case, students' basic needs to develop their competence was fulfilled. Then, the real-life activities provided in the MI-based instruction allowed learners to perceive that what they learned were related to their life. The connection that bridged the contexts inside and outside the classroom enabled them to feel the necessity. Besides, the safe environment created in the form of

collaborative group work has enhanced the chance of students to feel the relatedness with others.

Based on the given statistical data, the fulfilment of these three basic needs has encouraged the change of perspective on learners' way of valuing English as part of their needs. In addition, they showed more interest in the subject since it was designed in a way that allowed learners to explore their capacity by completing the given challenges. Available choices in which they had the freedom to choose what fit in has given them opportunities to exercise their autonomy to decide the direction of their learning desire without losing track of the subject being learned.

The value or usefulness, interest, and perceived choice discussed above are the instruments critical in the process of internalization and integration of values, as mentioned in the Self Determination theory (Deci et al., 1994; Ryan & Deci, 2000, 2017, 2020). Internalization is identifying and taking values that exist outside oneself, while integration is a process of further transformation by making these values as self-values. During these processes, learners observe their environment and decide whether the value is important for them. When they perceive that it is significant, they will assimilate it into their own value. Otherwise, they will reject it. Hence, it is important that social context should be built carefully to ensure learning opportunities for learners. In this study, the teacher had a significant role in ensuring that the three basic needs were available. By giving students easily accessible information, opportunity to develop, constructive feedback, and empathy, teachers have provided chances for learners to maximize their learning capacity by activating various intelligences in a safe environment. It, then, allows the internalization and integration processes to take place, which results in the sustainability of intrinsic motivation.

It is imperative that MI-based instruction demands instructors to do more preparation compared to just conventional ways of teaching. On the other hand, teachers should also understand the knowledge and realize how learners are uniquely different, and how the principles of multiple intelligences theory are implemented in the field. However, this effort is worth trying as it was proven to be effective in breaking away monotonous English instructional activities and was able to increase students' intrinsic motivation, an element which is very important to keep learning continuity and desire to master the language.

6. CONCLUSION

One-for-all approach disabled learners to develop their learning capacities as it merely highlighted limited domains of human intelligences. Knowing the fact that each individual is different and owns various types of intelligences as mentioned by Gardner (2003), it is significant that teachers consider the variability of learners and learning environment. This study proved that the implementation of MI-based instruction, which was designed to meet

individual basic needs, allowed learners to activate various intelligences. This enabled them to increase the intrinsic motivation to learn English.

However, the narrow locus of this study and the small number of participants were the limitation of this research. Hence, the findings should not be generalized to all contexts. Rather, it could be another insight in the research field to prove the effectivity of MI-based instruction. A further study, then, is needed in the broader locus with bigger participants or with diverse variables to stretch out the findings.

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