

Using Multiple Intelligences to Motivate Students

The framework for this reflection is modeled after educational philosopher John Dewey's *How We Think*.¹ In this work, Dewey outlines how teachers should train students to "think well." He asserts knowledge comes from human interaction with the world. To be able to think well, students should be taught inductive and deductive reasoning, how to interpret facts, and how to think both in abstract and concrete terms. Reflection is key to understanding why people believe what they believe and what supports those beliefs. Part of helping students learn is understanding that intelligence comes in many forms, and teachers should better understand how their students best learn. Hence, in order to teach children to "think well," teachers must understand the different modalities of intelligence and teach to the student's type of intelligence. The purpose of *this* reflection is to better understand how multiple intelligences can be applied to better motivate students to achieve more, particularly in social studies classrooms.

Multiple Intelligence Theory can be summarized as the belief that intelligence is not a single construct that can be contained by an IQ score, but a multifaceted construct that all individuals possess to varying degrees. The focus of this paper will be on kindergarten through sixth grade classrooms, as these are the grade levels that the author currently teaches.

The very real world problem is that some students do not seem to have a growth mindset, causing them to quit when activities are challenging instead of putting more effort forth because they think it will not make a difference. The growth mindset can be summarized as the belief that individuals can increase their level(s) of intelligence with effort. In other words, intelligence is not as fixed as an individual's IQ score may suggest. There is a positive correlation between belief in a growth mindset and higher achievement, whether that belief is articulated as "growth

mindset” or equivalent terms. Therefore, because of this lack of belief in a growth mindset, students do not achieve their full potential.

Ultimately, the goal of this paper is to examine how teaching students about Multiple Intelligence Theory and the Growth Mindset can lead to increased motivation and better academic achievement. A literature review provides a background to the relevant theories of both supporters and opponents. The methods section describes the instructional strategies that the author used with the students. The results section addresses the outcomes of those instructional strategies in greater detail. Finally, the discussion section is where possible meanings and significance of these outcomes are addressed, including future studies, to best identify an ideal way to present multiple intelligences and the growth mindset to help students reach their full potential.

The following literature review provides the foundation for this paper. The intent was to take what was read and apply it to the classes that this author currently teaches. It was a step in an ongoing process to provide the best education possible for the students in those and future classes. As such, the objective was not to take quantifiable pretest or posttest data at this time.

Literature Review

A key question to this study is, how can multiple intelligence theory improve motivation to improve achievement? To understand this question better, the literature review began by examining multiple intelligence theory and then diving into its possible role in improving motivation and achievement. Prior to the 1980s, intelligence was assumed to be a single construct, which could be summarized in an individual’s IQ score. The higher the IQ score, the smarter the person. In the early 1980s, Howard Gardner of Harvard University identified seven types of Multiple Intelligence Theory, and that number grew to nine then eleven types of

intelligence over the years.² Educators need to be aware of all types of intelligence if they are to be able to reach all students. The eleven types of intelligence currently identified are:

-Bodily-kinesthetic intelligence: the ability to use one's bodily motions and the capacity to handle objects skillfully, including the ability to use the entire body to express ideas and feelings.

-Interpersonal intelligence: the ability to communicate effectively in diverse social and cultural settings, including the ability to perceive others' moods, motivations, and emotions.

-Intrapersonal intelligence: self-reflective capabilities, understanding one's self, one's own strengths and weaknesses, the ability to predict one's own reactions and emotions, and acting on that self-knowledge to modify errors.

-Logical-mathematical intelligence: the ability to deal with logic, abstractions, reasoning and numbers.

-Musical-rhythmic intelligence: the ability and sensitivity to deal with sounds, rhythms, tones, and music, including the ability to appreciate, distinguish, compose, and perform various types of music.

-Visual-spatial intelligence: the ability to do activities which require spatial judgment. People with high spatial intelligence are able to visualize well in the mind's eye, which helps them to be able to see an image or a situation and assess the areas that can be modified to transform the appearance.

-Verbal-linguistic intelligence: the ability to use spoken or written language like reading, writing, and telling stories.

-Existential intelligence: the ability to contemplate phenomena or questions beyond sensory data, including an appreciation of spirituality and questions about life and the universe.

-*Naturalistic intelligence*: the ability to understand nature and interact with natural surroundings such as classifying species or identifying natural phenomena to develop skills in real life.

-*Laser intelligence*: the ability to create and generate inventions.

-*Mental-search intelligence*: the ability to search and scan information.³

The first seven were the original seven intelligences: bodily-kinesthetic, interpersonal, intrapersonal, logical-mathematical, musical-rhythmic, visual-spatial, and verbal-linguistic. These seven include the two to three intelligences that are typically emphasized in schools: logical-mathematical, verbal-linguistic, and sometimes visual-spatial. Certain classes may address other intelligences like bodily-kinesthetic intelligence in physical education classes or musical-rhythmic in music classes. However, students who perform well in these types of tasks are not perceived as “smart” in the same way that students who perform well in Math or Reading classes. The same is true for Existential and Naturalist intelligences, which were added in 2009, and Laser and Mental-search, which became generally accepted around 2016.

These eleven are the ones proposed by Gardner and the ones that will be focused on in this reflection. Other researchers have proposed additional intelligences, most notably emotional intelligence and political intelligence. Mayer and Salovey⁴ first coined the term “emotional intelligence” in 1990, as a way to describe a person’s capacity to understand, control, and express one’s emotions, and handle interpersonal relationships empathetically. The origin of the concept of political intelligence is typically attributed to Machiavelli.⁵ Political intelligence can be defined as the knowledge of the actors in a political arena, the ability to anticipate their course(s) of action, and the capacity to develop a strategic course of action to address them. The reason this reflection will not focus on these two intelligences is that they are often perceived as a specific combination of one or more of Gardner’s eleven. Emotional intelligence is closely

related to intrapersonal and interpersonal intelligence and political intelligence is the combination of logical-mathematical and interpersonal intelligences.⁶

While a number of factors, including age, education, and culture, can play a role in multiple intelligences, age is particularly important in terms of this study.⁷ Age may moderate the effect of extraversion or interpersonal intelligence on academic success. For example, before the age of twelve, extraverted children (those dominant in interpersonal intelligence) outperform introverted children (those dominant in intrapersonal intelligence) in school, but research shows that those with higher levels of intrapersonal intelligence will likely outperform those more dominant in interpersonal intelligence later in school.⁸ Multiple intelligences are not static—these abilities can change over time.⁹ This has a significant impact on how teachers should approach planning instruction and assessment.

Multiple Intelligence Theory is not without debate. Philip Adey¹⁰ suggested that the popular acceptance of Multiple Intelligence Theory was a reaction to *The Bell Curve* by Herrnstein and Murray in 1994.¹¹ *The Bell Curve* suggested that intelligence is fixed and falls along a continuum of the typical bell curve. In other words, there are only so many smart people, so many average people, and so many below-average people in terms of intelligence. Since that time, claims that intelligence is fixed have proven inaccurate. However, just because one opposing claim is considered inaccurate, does not prove that Multiple Intelligence Theory is necessarily accurate. Multiple Intelligence Theory encompasses more than just the idea that intelligence can change over time. One of the most significant claims Multiple Intelligence Theory makes is that each person has more than one type of intelligence and that each of these intelligences can change over time.

One of the criteria for an intelligence to be one of the multiple intelligences is that it is specific to a particular part of the brain.¹² This suggests that damage to that part of the brain would negatively affect that intelligence. However, even though a certain intelligence, such as speech for example, typically resides in a certain part of an undamaged brain, various cases have shown how brains can adapt, and another part of the brain can take over functions previously controlled by the damaged part of the brain.¹³ This is one of Adey's contentions against Multiple Intelligence Theory.

Adey also claims that multiple intelligences are usually correlated.¹⁴ If you are strong in one, you are strong in all of them. However, results from a study headed by Yashpah Singh on students in India indicated that only logical, musical, and spatial intelligences are highly correlated in terms of IQ.¹⁵ The other intelligences are uncorrelated with those three intelligences and IQ. Furthermore, valid assessments have been identified for determining an individual student's level in each of the multiple intelligences.¹⁶ This suggests that the nine or eleven intelligences are not correlated to one another.

Motivation

Learning styles are closely related to multiple intelligences.¹⁷ Discerning different learning styles seems crucial to enhancing motivation.¹⁸ This leads into the discussion of motivation, particularly how multiple intelligences can improve motivation. Motivation is "the process whereby goal-directed activity is instigated and sustained."¹⁹ It can influence what individuals learn and how they learn. Motivation emphasizes the interactive relationship between the learner and the learning environment. It is linked to cognitive and affective processes, like thoughts, beliefs, and goals.

Some view motivation as a personal characteristic (intrinsic motivation) that remains stable across context and situations.²⁰ Intrinsic motivation is motivation that comes from within, such as an internal desire to achieve a goal. In contrast, extrinsic motivation comes from outside the individual, like receiving a reward for a desired response. However, viewing motivation in this way does not recognize the difference in degree individuals can be motivated in different contexts. Motivation is a key component of interpersonal and intrapersonal intelligence, which helps both teachers and students to better identify those factors that have an effect on the degree of motivation.²¹ It is important to have intrinsically motivated students.²² Students should use their intrapersonal and interpersonal intelligences to improve self-motivation.²³

To get to the point where students can self-motivate themselves, often some scaffolding has to take place. When students became aware of their multiple intelligences, they enhanced their motivation. When teachers incorporated multiple intelligences, student motivation increased.²⁴

However, exposure to the idea of multiple intelligences does not always show an increase in motivation, even if they show other benefits. In one study, for example, teaching about multiple intelligences was positively correlated with learning, but not with motivation.²⁵ This was interesting because other studies that this author was familiar with suggested a correlation between teaching about multiple intelligences, motivation, and learning in that order. This author was teaching about multiple intelligences to directly increase motivation, which would indirectly lead to increased learning. This one example suggests that motivation is not the result of knowing about multiple intelligences and is not necessary to increase learning. Nevertheless, the bulk of the research suggests that teaching about and using multiple intelligences increases motivation, which leads to gains in learning or achievement .

Achievement

Third, this author was not disappointed in hoping to find evidence that improving motivation would lead to a measurable improvement in achievement. Motivation is considered a predictor of success.²⁶ Encouraging students to improve their multiple intelligences can motivate students to acquire the skills needed to achieve more. Furthermore, incorporating Bloom's Taxonomy with multiple intelligences motivated students to improve their performance. Motivation broadly defined and academic motivation in general both had a medium effect on academic achievement, while academic extrinsic motivation specifically only had a very small effect on academic achievement.²⁷ This makes it vital to develop intrinsically motivated students.

Nevertheless, the direction of this correlation is not clear because it is just that: a correlation. It is natural to think that motivation comes before and, therefore, leads to achievement, but some motivational processes like effort, perceived intellectual ability, and attendance may be the effects of academic performance, not the cause of academic performance.²⁸ The Matthew Effect, where the rich get richer or the smart get smarter, may be a factor because students who score higher on tests are more motivated to perform better in class.²⁹ Students who feel competent in the school environment develop academic motivation, which has a positive impact on school performance.³⁰ Motivated learners are more likely to undertake challenging tasks, to be actively engaged, to enjoy learning, and to exhibit enhanced performance, persistence, and creativity. Challenging tasks can lead to motivation and improved performance. Positive stress can be helpful in motivating students to peak performance. Learners with intrinsic motivation, high self-esteem, and appropriate skills are not prone to negative stress because they have overcome stress producing stimuli through preparation, self confidence, and exhibit enhanced performance, persistence, and creativity.

Ultimately, most of the research suggests that multiple intelligences improve achievement, regardless of the effect or lack of effect concerning motivation.³¹ Multiple intelligences allows students to activate their personal strengths and interests to solve real world problems that the students see as meaningful.³² Multiple intelligences significantly improved post-test scores over pre-test scores in one study.³³ They have been shown to improve students' language proficiency.³⁴ Multiple intelligences had a large effect on academic achievement.³⁵ This is related to an earlier finding that multiple intelligences increased learning, but not motivation.³⁶

Methods

A number of possible reasons could explain why some students are unmotivated to achieve more, although three causes seem the most probable. One, the students may lack a growth mindset. Two, students may be unaware of the theory of multiple intelligences. Three, students are naturally inclined to protect their self-worth or “save face” in front of their peers. Each of these will be addressed in turn below.

One of the topics this author presents to K-6 students is the concept of a growth mindset. This occurs over the course of several weeks—one lesson per week, so it is not a “one-and-done” type of lesson that is forgotten after the one and only discussion of it. It is also structured using Bloom's Taxonomy.

The first video comes from Khan Academy and simply presents what a growth mindset is, so students have a basic knowledge of the concept.³⁷ Khan Academy actually provides two choices for an introductory video, one for younger students and one for older students. The one for younger students is presented by Elmo and Zoe from *Sesame Street* on the Power of Yet: You may not be able to do something yet, but you will get better if you keep trying. The one for older

students is a conversation between Sal Khan and Carol Dweck, who coined the term “Growth Mindset” in her work on the subject.

The second video from Clickview goes more in depth, to give students a better understanding.³⁸ It describes the journey of two seeds. One seed has a fixed mindset and is afraid to grow up into the unknown. The other seed is not afraid and works to grow up until what was unknown becomes known.

The third video is a TED Talk that shows an example of how one third grader applied the concept of growth mindset.³⁹ Rebecca Chang did not want to run for class officer at first because she was afraid of losing. However, her parents and teachers encouraged her to try and not quit. In the end, she was elected to represent her classroom.

The final video gives the students a chance to evaluate their understanding of growth mindset by identifying whether a situation exhibits a fixed or growth mindset.⁴⁰ Many students like this video best because it shows famous people and characters that they recognize like Michael Jordan and Elon Musk as examples of a growth mindset. The Simpsons or some guests of Dr. Phil illustrate a fixed mindset. An appropriate conclusion is a clip from “The Pursuit of Happyness” that shows Will Smith’s character changing from a fixed mindset at the beginning of the scene to a growth mindset by the end of the scene.

Self-efficacy belief, or a growth mindset, has been shown to have a large effect on motivation.⁴¹ Students who believe in a growth mindset show higher levels of achievement.⁴² Many of the students that are struggling may not believe in a growth mindset. They view intelligence as something that you either have or do not have. Given early and repeated struggles in the school setting, they have determined that they do not have it.

Another topic presented to K-6 students is the concept of multiple intelligences. This is done with a story called “Letti the Yeti” that this author wrote that builds on the Power of Yet, which is covered when discussing the growth mindset. Two contrasting views of intelligence exist: intelligence as a single thing—you are either smart or you are not—or as multiple intelligences.⁴³ Another reason for the problem of unmotivated students may be that they view intelligence as a single thing. They are unaware of other types of intelligence. They may have a relative weakness in the intelligences that are most often assessed in a school setting like linguistic and logical-mathematical intelligences.⁴⁴ Therefore, it is likely that they are dominant or have relative strengths in one or more of the other intelligences since everyone has some of each intelligence.⁴⁵

Finally, even if students believe in a growth mindset and are aware of Multiple Intelligence Theory, students are naturally motivated to protect their self-worth.⁴⁶ If they feel that they will not be able to do something, they will often use failure-avoiding strategies. They feel it is better to be seen as not wanting to do something rather than not being able to do it, especially in front of peers in class.

Results

This does not have to be an either/or situation. All three reasons have validity. Students lacking a growth mindset need to be convinced that they can get better with effort. Likewise, making them aware of multiple intelligences and their own potential strengths may be the motivation they need to believe in a growth mindset and achieve more in the various areas of their life. Students that are unaware of the different types of intelligence need to be made aware of these intelligences if they are going to put effort into improving any one of the intelligences.

To address threats to their self-worth, developing a true growth mindset culture in the classroom will teach students to celebrate mistakes because that is a great way to grow.

One of the biggest changes this author made while going through this process was coming up with ways to further incorporate multiple intelligences into the classroom's growth mindset culture. The focus tended to remain on the nine—not eleven—intelligences because the majority of these studies focused on nine,⁴⁷ eight—leaving Existential out,⁴⁸ or the original seven.⁴⁹ However, a special emphasis is put on intrapersonal intelligence because developing that seems to develop intrinsic motivation. Intrinsic motivation is more important than extrinsic motivation because intrinsic motivation is something the students will hopefully be able to take with them. Any extrinsic motivation that may come from the teacher is fleeting because the teacher will not always be present. The irony of using extrinsic motivation techniques at first in order to develop intrinsic student motivation later on should not be lost.

This should also make teachers more conscious of presenting their content with multiple intelligences in mind. Active learning can develop students' multiple intelligences, especially kinesthetic learners.⁵⁰ Music increases motivation and helps develop meaningful learning, so teachers can try to connect songs and/or videos to what is being taught in class.⁵¹ Students also consider visual aids motivating, so when reading from a chapter without pictures, teachers can try to find coloring pages related to what students are learning about for students to work on while they listen.

Finally, teachers should use multiple intelligences to help students resist failure-avoiding strategies.⁵² There is little reason to be down if you are weak in one area. There are two main reasons for this. One, intelligence is not fixed, so you can always improve your weaknesses. Two, if you have a relative weakness in one area, that means you have a relative strength in

another, and no one type of intelligence is more important than another...although some may argue that intrapersonal intelligence is the most valuable because it can motivate you to improve the others.

Discussion

In his time, John Dewey outlined how teachers should train students to think well. Both Multiple Intelligence Theory and the Growth Mindset provide a useful framework to help students as they construct knowledge from their interaction with the world. Reflection is key to understanding why we believe what we believe and what supports those beliefs. The primary purpose of *this* reflection was to better understand how multiple intelligences can be applied to better motivate students to achieve more. Knowledge of the Growth Mindset contributes to this end.

The greatest change in this author's perspective is a focus on intrapersonal intelligence for all students. Before this journey, the tendency was to simply teach about the different types of intelligences, so students could first identify their strengths and weaknesses. Then, students could make a better informed decision about which intelligence or intelligences they wanted to focus on improving. Learning that improving intrapersonal intelligence develops greater self-motivation encouraged this author to encourage the students to make sure the intrapersonal intelligence has a strong foundation that can be used to work on improving the other intelligences. This is not only true for current K-6 students, but also for future students and other students at all levels.

A solid foundation in understanding how multiple intelligences and a growth mindset complement each other could help inform other teachers' instruction as well. Applying various types of learning styles and multiple intelligences is one of the most important contributors to

successful teaching, which is why researchers recommend teachers use the Multiple Intelligence approach.⁵³

Likewise, instructional designers should also consider students' learning styles and multiple intelligences to improve motivation and academic achievement. Instructional tools could be designed to reflect students' different intelligences.⁵⁴ From there, teachers should help students learn how to best use these tools to take full advantage of the features that would benefit each student the most based on his or her multiple intelligences or learning styles.

Naturally, it would be a pleasure to find future studies that pursue this line of inquiry. The insights from this reflection apply most directly to K-6 current students. Conclusions made may not necessarily apply to future K-6 students or other students in a different context. So, other studies should pursue similar questions: Does Multiple Intelligence Theory help increase motivation in grade 7 through 12 students? Does Multiple Intelligence Theory increase achievement in these same students? Does the motivation (from using Multiple Intelligence Theory) increase achievement in older students? Is this increase similar for different (age) groups? If more studies investigate similar questions with similar findings, then conclusions would be more generalizable.

ENDNOTES

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