

# Perspectives and Strategies to Enhance Intrinsic Motivation in Classrooms

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*Mia woke up early for the start of her first week of freshman year in college. Throughout her K-12 years, she never particularly enjoyed school, simply studying enough to get the grades and rewards that she needed in order to get through one stage of life and into the next. That Monday morning, Mia trudged into art history class with low expectations. Skimming the syllabus, she realized this may be a really long haul. She was taking this course as a Liberal Arts requirement and was not excited, as she did not like art and she definitely did not like history. However, as she sat through the hour-long class, she felt something that she had not quite experienced in school before. She felt herself engaged in what the teacher was saying, and finding interest in the material, encapsulated by the unique medium of artwork through which she could gain insight into cultures of the past. In a moment of self-awareness, Mia paused to acknowledge this feeling; a motivation to learn, irrelevant of the grade or reward that she may receive for doing so, and she wondered why she had never felt this way in school before.*

Mia's experience raises the question of the role of intrinsic motivation in the classroom. How do some students become excited about learning, while others do not? What strategies increase intrinsic motivation and when can these strategies be most effectively implemented? This paper seeks to explore how teachers can help develop intrinsic motivation through classroom practices and to examine the background behind these most effective strategies. It begins by defining intrinsic motivation and explaining its significance within the school setting. Next intrinsic motivation will be analyzed from three perspectives; the developmental perspective, the psychological perspective, and the pedagogic perspective. The developmental perspective illuminates developmental theories, where motivation stems from within the brain, and the continuity of intrinsic motivation throughout middle and high school years. The psychological perspective addresses several psychological theories of intrinsic motivation, followed by practical effective classroom strategies to help increase intrinsic motivation. The paper concludes with challenges in enhancing intrinsic motivation in the classroom. Before delving into the perspectives, the paper presents a formal definition of intrinsic motivation and its significance.

### **Definitions**

The two main categories of motivation are intrinsic and extrinsic motivation. Intrinsic motivation is the drive that a person has when s/he is inherently interested in participating in a task because of an inner satisfaction that arises from doing so (Ryan & Deci, 2000; Serin, 2018; Sun & Hsieh, 2018). Extrinsic motivation, on the other hand, is the desire to do a task solely based on external factors that one finds enticing, such as rewards, verbal praise, and accolades (Ryan & Deci, 2000; Serin, 2018; Sun & Hsieh, 2018). The attempt to satisfy external values and demands drives extrinsically motivated behaviors, whereas intrinsically motivated behaviors are driven from within oneself (Serin, 2018). As explained by Williams and Stockdale (2004), the pleasure obtained from actions that are intrinsically motivated stem directly from the action itself, whereas the pleasure received from extrinsically motivated actions is only linked to the behavior, not directly connected.

It is worthwhile to note that for the purposes of this paper, the specific form of intrinsic motivation being discussed is academic intrinsic motivation, which is intrinsic motivation specifically within the context of school learning (Gottfried, Fleming, & Gottfried, 2001). However, going forward this will simply be referred to as intrinsic motivation, as is consistent with most of the scholarship in the field. Next the paper discusses the specific value of intrinsic motivation, particularly within the schooling context.

### **The Importance of Intrinsic Motivation**

Intrinsic motivation has been found to have immense impacts on many areas of learning. In fact, Domenico and Ryan (2017) cite research that supports intrinsic motivation as being the most important type of motivation when considering school achievement. It is associated with deeper learning (Kusurkar, Croiset, & Ten Cate, 2011), specifically with a

better understanding and a longer retention period of the information (McClintic-Gilbert, Corpus, Wormington, & Haimovitz, 2013; Sun & Hsieh, 2018). When students are motivated in the correct ways, they pursue and self-regulate through challenging tasks, remaining more focused on the task, and when they are faced with obstacles, they are able to bounce back by investing more, looking for new strategies, or asking for assistance (Lin-Siegler, Dweck, & Cohen, 2016; Sun & Hsieh, 2018). The specific strategies utilized by students to assist in their learning also differ based on where the motivation stems from, as survey data seems to show that intrinsic motivation was correlated with deep and surface learning strategies, while extrinsic motivation was associated solely with superficial ones (McClintic-Gilbert et al., 2013).

Another aspect that points to support for the importance of intrinsic motivation is the logistical concern. Extrinsic motivation is dependent upon constant reinforcement through external forces, such as teacher praise or rewards, and when there are not enough resources for these factors to persist or when there is no increase in the reward, the motivation from external sources deteriorates (Williams & Stockdale, 2004). Intrinsic motivation, on the other hand, does not heavily rely upon external forces that are not always available, making it a more sustainable form of motivation. In order to obtain a full picture of intrinsic motivation and how to encourage its growth in the best way, it is necessary to understand how and when it naturally develops.

### **Developmental Perspective of Intrinsic Motivation**

Intrinsic motivation is likely controlled by several developmental processes and does not have a simple explanation. The National Scientific Council on the Developing Child (2018) explains that development of motivation begins at infancy, and different stages of life

influence motivation differently based on several factors. Domenico and Ryan (2017) explain multiple reasons for the importance of the study of neuroscience within intrinsic motivation. One reason is that human behavior in general is mediated by the brain, and therefore behavior cannot be analyzed independent of the neural pathways inherently affecting it. Another reason is that in order for motivation to be completely understood, the objectivity of neuroscience is extremely beneficial. While psychology has theories, the evidence of electrical activity of neuroscience adds strength to the argument. This is not to say that people intentionally lie in reporting their motivations, rather that people often cannot properly identify the drive behind their motivation and self-report is simply less reliable. For these reasons, the next section analyzes developmental perspectives of intrinsic motivation.

### **Developmental Theories of Intrinsic Motivation**

It was formerly thought that motivated behaviors were solely a reaction to deficits in physiological needs, as much of an organism's behaviors are driven by the need to fulfill physiological needs (Domenico & Ryan, 2017). This explanation is known as the Empirical Drive Theory. However, through experimentation on primates and rats, the Empirical Drive Theory appears to have gaps. Namely, things that are specifically intrinsically motivated pose a difficulty to this theory because intrinsically motivated behaviors are present when such physiological needs are not lacking. Additionally, animals appear to act in a way that increases the drive to do such behaviors rather than to decrease it, which would be expected if the behaviors were simply to satisfy physiological needs (Domenico & Ryan, 2017). If all motivated behaviors were solely physiologically driven, as the Empirical Drive Theory states, then intrinsic motivation would fail to exist. However, it is clear from the continued

and strengthened desire to do these actions that intrinsic motivation is present and therefore an alternate explanation is needed.

Domenico and Ryan (2017) present other theories that were developed to explain intrinsically motivated behaviors. They claim that these behaviors are the response of the neuromuscular system when it is not preoccupied with a behavior that satisfies a physiological need or when it is slightly stimulated by the environment. Another similar explanation presented is that it stems from people's desire to feel themselves acting as the propelling force of their actions, actively choosing to cause things to occur and controlling their situations. These explanations shed light on the importance of autonomy in intrinsic motivation, which will be developed further below, as when a person experiences his own impact and he is not forced by his surroundings to do so, it brings satisfaction to his neuromuscular system (Domenico & Ryan, 2017). These findings were furthered by Ryan and Deci who explain through the Self-Determination Theory that the psychological needs to feel competent, autonomous, and connected help drive intrinsic motivation (Domenico & Ryan, 2017).

In further opposition to the Empirical Drive Theory, the concept of curiosity is linked to intrinsic motivation (Domenico & Ryan, 2017). Curiosity is defined as "intrinsic motivation to learn" (Gruber, Gelman, & Ranganath, 2014). Both curiosity and intrinsic motivation involve learning that is motivated by the self (Domenico & Ryan, 2017). Curiosity stems from a gap between what a person knows and what a person wishes to know, referred to as the information-gap. While this gap may initially bring about a dissonant experience, the experience of filling this gap and satisfying the curiosity, creates a positive sensation that overrides the negativity, thereby encouraging further curiosity in the future

(Domenico & Ryan, 2017). This information-gap is similar to the desire for competence and autonomy explained above as drives for intrinsic motivation. This directly addresses the limitation on the Empirical Drive Theory mentioned above, which is the continued and increased drive to do intrinsically motivated behaviors, as this theory claims that the positive feelings of satisfying curiosity propel these behaviors to continue. This curiosity is elaborated upon through a biological lens in the following subsection.

### **The Role of the Brain in Intrinsic Motivation**

Intrinsic motivation has been identified in the brain mainly in three main areas: the SEEKING<sup>1</sup> system, the parahippocampal gyri (PHG), and the dopamine neurotransmitter system (Domenico & Ryan, 2017; Gruber et al., 2014; National Scientific Council on the Developing Child, 2018). Researchers have found that mammals have regions in their brains referred to as the SEEKING system, which is responsible for energizing mammals to engage in food-searching and exploratory behaviors (Domenico & Ryan, 2017). This system maintains animals' interest in exploring their environments. Within rats, the SEEKING system is comprised of regions that are often referred to as the "brain reward network" because of the electrical stimulations produced there. These electrical stimulations, however, do not appear to be stimulations of calmness that are often thought to be the impetus behind behavior-reinforcement, rather the stimulations appear to be states of energized curious exploration (Domenico & Ryan, 2017). Applying these findings to humans, a similar SEEKING system acts as an impetus for curious and interest-motivated behaviors (Domenico & Ryan, 2017). As explained earlier, curiosity is a sensation that is linked to intrinsic motivation, as they both include an innate drive to learn more about something.

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<sup>1</sup> As per the conventions of the field of neuroscience, this term is capitalized when referencing the actual neural system itself, rather than the manifestation of the system which would be referenced in lowercase.

Therefore, this explanation of the SEEKING system sheds light on intrinsic motivation in the brain as well.

Another brain area discovered to be associated with intrinsic motivation is the parahippocampal gyri (PHG) (Domenico & Ryan, 2017), which surround the hippocampus. This is significant because this area plays an important role in memory encoding and was found to be active during times of curiosity (Domenico & Ryan, 2017). Therefore, these results link intrinsic motivation to enhanced learning, stressing the importance of intrinsic motivation in learning.

The third main element of neuroscience that impacts intrinsic motivation concerns the role of the neurotransmitter system. Specifically dopamine, the neurotransmitter that is mainly responsible for experiencing pleasure, is likely a large contributor to curiosity and intrinsic motivation (Domenico & Ryan, 2017; Gruber et al., 2014; National Scientific Council on the Developing Child, 2018). Through the use of positron emission tomography, it was discovered that people who are naturally more likely to be intrinsically motivated in their day-to-day behaviors also have more dopamine D2-receptors availability in certain brain regions (Domenico & Ryan, 2017). Research has suggested that dopamine systems are associated with intrinsic motivation, specifically finding that participants' autonomy plays a role, which plays an important role in the discussion of practical strategies in the classroom later in the paper (Domenico & Ryan, 2017). Intrinsic motivation in the brain therefore seems to be mainly in three parts; the SEEKING system, which is associated with electrical stimulations from intrinsically motivated behaviors, the PHG, which links curiosity to memory encoding, and the dopamine neurotransmitter system, which provides pleasure with

certain actions. Next, the continuity of intrinsic motivation throughout middle and high school years augments the developmental perspective with a focus across time.

### **Continuity of Intrinsic Motivation**

Research has shown a decrease in intrinsic motivation throughout schooling (Gottfried et al., 2001; Lepper, Corpus, and Iyengar, 2005; Mathewson, 2019). Lepper et al. (2005) found through surveying students that intrinsic motivation significantly decreased in a linear fashion from third through eighth grade. Additionally, a student survey poll found that while 74% of fifth graders reported feeling engaged, only 32% of high school juniors felt accordingly (Mathewson, 2019). These results pose the question of why this steep decline is occurring and deepen the urgency for teachers to understand how to combat it.

A longitudinal study was conducted in order to better understand the continuity of academic intrinsic motivation (AIM)<sup>2</sup>, following the progress of students from middle elementary through high school years (Gottfried et al., 2001). This study was done by assessing levels of AIM on both the individual level and the group mean levels throughout time in multiple subjects, namely math, science, reading, and social studies. Three main findings were discovered in this study. The first significant finding was that individuals' AIM is a stable construct, showing that there is not too much variability within the typical individual. This is taken one step further by the second finding, which is that intrinsic motivation becomes increasingly stable with time across these ages. The third finding was that while looking at the group, the mean level of AIM significantly decreased with time across these ages. However, this last finding was to the exclusion of students AIM in regards to Social Studies, which did not show a significant decline. This greatest decline, on the other

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<sup>2</sup> This article by Gottfried et al. (2001) refers to intrinsic motivation in schools as academic intrinsic motivation (AIM) unlike the other references.

hand, was found to be in math. These empirical findings have an important application; strategies towards enhancing AIM should be implemented early in the schooling years. The increasing stability of AIM in an individual with age shows that whatever degree of AIM is present in the younger years is likely to stabilize, thereby creating a much larger challenge when trying to intervene later on. Additionally, the mean decline of AIM with age also shows the importance of tackling this challenge early on, as to prevent this decline. Another important takeaway stems from the differences in trajectories of AIM between subject matters. The fact that there are differences among subject matters implies that it is not an inevitable developmental trend that AIM declines with age, rather the levels are based on external factors. This can provide encouragement for educators in that they may recognize the significance of developing intrinsic motivation within classroom practices, as it clearly does make a real difference (Gottfried et al., 2001). While the developmental perspectives of intrinsic motivation help determine patterns and relationships over time, the next section will show that psychology behind intrinsic motivation plays a significant role as well.

### **Psychological Perspective of Intrinsic Motivation**

The psychological perspectives incorporate the students perception of themselves and their environment (Lin-Siegler et al., 2016). This section includes a discussion of the Growth and Fixed Mindset Theory, the concept of grit, and the Self-Determination Theory, which are the three theories of the psychology of intrinsic motivation. Growth and Fixed Mindset, as well as grit, refer to several thinking styles that enhance intrinsic motivation. The Self-Determination Theory discusses the specific psychological needs that propel intrinsic motivation. The first psychological theory to be discussed is the theory of Growth and Fixed Mindset, which develops earlier constructs of intrinsic motivation.

### **Growth and Fixed Mindset Theory**

Recent research has been interested in Carol Dweck's concepts of growth and fixed mindsets (Dweck, 2008). A fixed mindset is one whereby the individual perceives a person's qualities as being permanent and unchanging throughout life, whereas a growth mindset is one whereby the individual sees qualities as being adaptable and capable of being nurtured through effort and learning. Failure is interpreted differently within each of these mindsets, as someone with a fixed mindset sees failure as being associated with inability and therefore no hope of improvement, whereas someone with a growth mindset attributes failure to a lack of effort invested in the task. In order for students to feel motivated, they need to understand their potential for growth, and not feel defined by their starting points (Lin-Siegler, 2016). If they feel as though it is predetermined how well they can do in life, they are unlikely to put in maximum effort, but if they feel like the effort can truly make an impact on their success, they are much more likely to do so. The importance of growth mindset can be seen from results of an experimental study that was found that students in ninth grade who received a growth mindset intervention experienced an increase in core-course GPA (Yeager et al., 2016).

Each of these mindsets is associated with a specific type of goal (Meece, Anderman E.M., & Anderman L.H., 2006; Wellington Learning and Research Centre, n.d.). A performance goal, which is associated with a fixed mindset, is a goal that is driven by the desire for external outcomes and the desire to demonstrate ability by performing better than others while exhibiting little effort. When people believe that their abilities are predetermined, their goal is simply to flaunt those already-present abilities rather than to work hard to push them further forward. This combination of fixed mindset and performance goals

is associated with extrinsic motivation, as the person only acts in order to perform for others, not taking into account their own personal satisfaction or feelings of competence.

Associated with a growth mindset however, are mastery goals, whereby the goal is long-term skill development, which is viewed as being attainable through the right amount of effort (Meece et al., 2006; Wellington Learning and Research Centre, n.d.). When people believe that they can always improve based on the amount of effort they put in, their goals become those which leave room for continuous improvement. Research has shown that the greater amount of intrinsic motivation displayed in elementary school students than middle school students corresponds to the emphasis of mastery goals in elementary schools and the emphasis of performance goals in middle schools (Meece et al., 2006). When people feel like they can improve, they have the space to feel competent and driven, allowing for the presence of intrinsic motivation.

Implementing mastery goals, which lead to a growth mindset, fosters intrinsic motivation because one recognizes that the process, not only the outcome, is an important part of the task and recognizing the inherent importance of the task itself is a major aspect of intrinsic motivation. In order to do this, teachers should praise students for the effort that they have invested, rather than their innate ability at performing a task (Meece et al., 2006; National Academies of Sciences, Engineering, and Medicine, 2018; Wellington Learning and Research Centre, n.d.). The subtle implications behind praise can make a difference on how students perceive the goals. The teacher acts as someone who the student looks towards to distinguish right from wrong, and what part of the task a teacher praises will ultimately shape how the student sees that task and its different parts. Therefore, praising grades and completed assignments will encourage students to compete with others for specific grades

and push to display their abilities, whereas praising hard work towards mastery and skill-improvement will encourage all students to work harder (Wellington Learning and Research Centre, n.d.). Another negative of praising outcomes is that students may feel a pressure to match or surpass their current results in future assignments, creating feelings of anxiety towards schoolwork (Wellington Learning and Research Centre, n.d.). Additionally, while group work is beneficial in classrooms, it should be presented in a way that is cooperative rather than competitive (Finley, 2014). The vocabulary that a teacher uses can be used to encourage a growth mindset and mastery goals, such as those that are included in the article 23 Powerful Words for the Growth Mindset (n.d.), including ‘effort’ ‘yet’ and ‘challenge’. Teachers should also be correcting language of the students, such as helping student catch themselves when they say “This is too hard” or “I can’t do this”, and correcting it to be “This may take some time to figure this out” (6 Tips to help students develop a growth mindset in the classroom, 2020).

Another way to encourage a growth mindset in students is to try to prevent them from embracing stereotypes, as stereotypes apply labels to people, implying that traits are innate and group-dependent (Wellington Learning and Research Centre, n.d.). By breaking the boundaries created by stereotypes, students will feel room to push past these limits and invest more effort because they see potential for growth. This is especially important for students who are likely to fall victim to stereotyping. Additionally, for more mature, older students, a growth mindset can also be encouraged by teaching about how the brain can change based on experiences (Wellington Learning and Research Centre, n.d.). Similar to the technique of breaking stereotypes, explaining brain plasticity will allow students to feel that it is within them to decide how they do, and they will therefore be inclined to invest more. Similar to the

concept of growth mindset, another psychological factor influencing the presence of intrinsic motivation is that of grit.

### **Grit**

Grit is tied to the psychology behind intrinsic motivation on a larger scale. Grit refers to the “passion and perseverance for goals over the very long-term” (Duckworth, Peterson, Matthews, & Kelly, 2007, p. 1087). Grit is interconnected with the concept of growth mindset and goal mastery, in that the determination to stick to a goal regardless of setbacks that is present within grit partially stems from the beliefs inherent in a growth mindset, namely that one’s hard work can improve skill (Wellington Learning and Research Centre, n.d.). Research has shown that it is challenging for adolescents to adhere to long-term goals, highlighting the challenge of intrinsic motivation, as they lack the motivation to complete a goal unless they are required to (Wellington Learning and Research Centre, n.d.). A way to combat this challenge is to help build grit, as students will feel more compelled to continue towards their goals because of interest and determination (Wellington Learning and Research Centre, n.d.). The best way to do this is to work on the students’ process of setting and reaching goals, which will be discussed in the next section of the paper (Wellington Learning and Research Centre, n.d.).

Something to note about grit, however, is its nature of being specifically “over the very long term” (Duckworth, Peterson, Matthews, & Kelly, 2007, p. 1087). While a growth mindset is a practical perspective that can be encouraged in classroom practices through mastery goals, grit may be limited in its classroom application because of its more long-term, deeper-rooted nature. That being said, encouraging grit when possible may still be beneficial, perhaps through reading about famous figures who were determined and reached their goals,

modeling grit. An example of such an application is mentioned by Lin-Siegler et al. (2016), who discuss a classroom experiment whereby students read biographical stories about well-known scientists, some reading about the struggles they endured to achieve their results, and others simply reading about their achievements. It was found that students who read about the struggles felt more motivated to study the science material overall (Lin Siegler et al., 2016). Inspiring children by showing them the possibilities when acting with grit can lead to more motivation. The next psychological theory that the paper discusses also looks at personality traits that impact intrinsic motivation, specifically those within the Self-Determination Theory.

### **Self-Determination Theory**

The Self-Determination Theory of Ryan and Deci (2000) is widely studied within intrinsic motivation. The Self-Determination Theory holds, through much empirical research, that there are three basic psychological needs that are universal. These are the need of competence, relatedness, and autonomy (Deci & Ryan, 2008). Relatedness refers to a feeling of belongingness with others. Competence refers to the feeling of mastery in a particular area, expanding a person's ability to create impact. Autonomy is the feeling that one's actions stem from one's own, genuine choice to do so. Support for competence and autonomy as the drives for intrinsic motivation lies in the tendency for people to seek out individual talents and career paths, as that differentiates people and allows for them to feel individually successful (Domenico & Ryan, 2017). The Self-Determination Theory posits that intrinsic motivation is dependent upon the satisfaction of these three needs (Ryan & Deci, 2000). When these needs are stifled, people turn towards extrinsic motivation in order

to try to obtain external feelings of worth (Deci & Ryan, 2008). In order to encourage intrinsic motivation, these psychological needs must be fostered in the classroom.

The multiple psychological perspectives can be symbiotically implemented, and therefore encouraging a growth mindset, grit, and the psychological needs of autonomy, competence, and relatedness would be helpful in strengthening intrinsic motivation in the classroom. The last section of this paper will focus on specific classroom strategies that have shown to be effective in encouraging intrinsic motivation, some of which support the Self-Determination Theory.

### **Classroom Strategies**

After understanding the developmental and psychological factors that impact intrinsic motivation, it can be better understood which classroom practices would be most effective in helping to increase intrinsic motivation. These strategies are limited to those which can be implemented specifically in the classroom, excluding the role that parents and culture play in intrinsic motivation as well (Gottfried et al., 2001). The strategies included are setting goals and providing feedback, encouraging autonomy, engaging students through interactive learning, making the content relevant, teaching passionately, and structuring the classroom intentionally. The first strategy to be discussed is how to most effectively set goals with students and provide feedback to them.

#### **Setting Goals and Providing Feedback**

As mentioned previously, different goals and feedback styles encourage different mindsets, which have a big impact on student motivation. Teachers should help students set personal goals that are conducive to developing intrinsic motivation. Working on how to set goals and thereby increasing metacognitive skills, is especially important in increasing grit,

which is a large part of intrinsic motivation (Wellington Learning and Research Centre, n.d.). This is done through a process, as explained by the Wellington Learning and Research Centre (n.d.), “Metacognitive skills include setting learning goals, developing a plan to work toward these goals, strategically implementing that plan, adapting strategies as necessary when faced with challenges, and finally reflecting on the learning experience” (p. 11). This process includes much introspection and steps towards the outcome, showing that it is not simply the outcome that matters, once again encouraging a growth mindset through mastery goals. Similar to the Wellington Learning and Research Centre (n.d.), Williams and Stockdale (2014) suggest that in order to set these goals with students, teachers should set up meetings to create goals with students and follow up on their progress, difficulties, and future strategies. Teachers should also create goals for the class as a whole and explain their progress to the class as a social modeling technique of working towards goals (Williams & Stockdale, 2014). It is important to note that the implication of this is that there is a difference between class goals and individual goals, which needs to be made clear. Students should know that their individual goals are evaluated on an individual basis, not depending upon the success of others. If they think that their success depends on a scale with others, they may be likely to fall into having performance goals and a fixed mindset, expecting to land on the scale solely based on how their innate abilities compare to those of their classmates. Class goals, on the other hand, are goals that the class works together on, being evaluated as one whole. This can help build feelings of community instead of unhealthy competition.

Student mastery goals need to be simultaneously feasible and challenging in order to increase the students’ perception of control in the situation (Blackburn & Armstrong, 2017;

Williams & Stockdale, 2004). If a task is too hard to accomplish then the students will feel powerless, but if the task is too easy they will not attribute their success to their own efforts and rather to the ease of the task itself. If goals are of the correct difficulty level, the students will attribute failure to lack of effort. Support for this is found in the aforementioned study conducted by Gottfried et al. (2001), where they suggest that the students' differing levels of perceived difficulty of each subject may be the cause for differing levels of AIM. This means that as students perceived a subject to be more difficult, such as math, they had less motivation towards it, implying that goals need to seem accessible. Having goals that are feasible and show possibility of improvement through proper effort can encourage students to value the effort in itself, increasing their intrinsic motivation.

Since true academic performance is defined by how the student meets the objectives, students should be given feedback regarding their progress in reaching their objectives. The manner in which a teacher provides feedback to the students can have a big impact on their motivation as well, as positive feedback can enhance intrinsic motivation (Domenico & Ryan, 2017). Feedback should praise the effort that the student invests rather than the outcome (Meece et al., 2006; National Academics of Sciences, Engineering, and Medicine, 2018; Wellington Learning and Research Centre, n.d.). Feedback should not emphasize the grade, and rather should encourage self-evaluation of the process and points for improvement. In addition to this, it is important that the feedback is timely and constructive (Kusurkar et al., 2011). For feedback to be considered constructive, the tone of voice used by the teacher needs to be positive, as to not turn the student's motivation towards refraining from teacher disapproval (Kusurkar et al., 2011). One way of going about this is called Pendelton's rules, which includes a step-by-step process of feedback (Kusurkar et al., 2011).

It begins with the student explaining what s/he believes went well, then the teacher explains what s/he believes went well, followed by the student explaining what area s/he thinks s/he can improve upon and how to do so, and then the teacher also sharing what areas can be improved upon and potential methods for doing so, spoken as suggestions rather than commands. The goal is to encourage students to take ownership of their work, as they are the determinants of how much effort they contribute. Just as setting personal goals allows for students to feel ownership of their work, autonomy can be encouraged in other ways throughout the classroom as well.

### **Autonomy**

Encouraging students' academic independence by providing them with choices allows for them to feel more inherent interest in the material (Domenico & Ryan, 2017; Ryan & Deci, 2000; Sun & Hsieh, 2018; Wellington Learning and Research Centre, n.d.). Choosing for oneself gives people the impression that they are acting based on their own desire, not simply to fulfill someone else's requirements. If the students feel that they are a part of something, as opposed to feeling like they are disconnected and simply following instructions to pass a class, they will feel more intrinsically motivated (Kusurkar et al., 2011). They will feel more connected to the learning because they are given the opportunity to determine it (Serin, 2018). When students choose their own path, it also helps by keeping them from feeling discouraged from negative feedback (National Academics of Sciences, Engineering, and Medicine, 2018). Ryan and Deci (2000), note that autonomy is extremely important in building intrinsic motivation, and needs to be paired with the feelings of competence so that they can see whatever choice they make as something attainable.

There are many places where choice can be implemented in the classroom. Some choices that can help increase intrinsic motivation include allowing students to choose their own goals, tasks, topics, and presentation mediums (Kusurkar et al., 2011; Sun & Hsieh, 2018). They can also make choices on the collective level, such as the sequence of the topics (Kusurkar et al., 2011). Even if the situation does not call for direct autonomy of the students, another valuable tool that teachers can use is the impression of choice. Kusurkar et al. (2011) suggest using language that gives this impression, such as using the words ‘can, may, could’, rather than the words ‘must, need, should’. It is important to note that while student autonomy is extremely important, structured guidance must be provided as well (Kusurkar et al., 2011).

In attempting to explain the difference between AIM in math and social studies, one suggestion that Gottfried et al. (2001) put forth is based on research showing that teachers experience less autonomy in math because of more restricted course content and limits of teaching techniques within the content. Gottfried et al. (2001) suggest that when the teachers feel less autonomy in their subject-area, that may be transmitted to the students, making them feel less autonomous in that subject as well. This can have relevant implications, partially with the underlying important implication that the teacher’s own experience influences that of the student, and more specifically in regards to autonomy in the classroom. It is important for the teacher to feel flexibility in the classroom in order to be able to properly transmit those feelings of autonomy to the students. Similar to the way students experience themselves as active in the classroom when provided with choices, interactive learning is another strategy that can assist in creating a purposeful experience.

### **Interactive Learning**

A significant part of motivating students is the way in which they interact with the information. Creating an environment that encourages student involvement is crucial for intrinsic motivation, as the students will value the learning more (Blackburn & Armstrong, 2017). Having students work collaboratively often kindles exciting discussion, as everyone gets involved (Kusurkar et al., 2011). Group assignments increase intrinsic motivation partially because the social skills utilized in these assignments enhance self-confidence (Serin, 2018). Another effective way to get students involved is by asking them of their opinions on the topic (Serin, 2018). Additionally, having students compete with each other brings about sociable peer interaction and interest in the lesson, positively impacting intrinsic motivation (Serin, 2018; Sun & Hsieh, 2018).

In addition to group work, using different ways for the students to interact with the material by alternating the teaching methods can be helpful in building intrinsic motivation (Serin, 2018). Sun and Hsieh (2018) found through quasi-experimentation that students displayed greater intrinsic motivation when they used a gamified interactive response system than when they used the typical whiteboards for polling activities. Even so, the majority of the students who used whiteboards also reported feeling motivated because of the whiteboards, indicating that even that slight variation in the learning was beneficial to student motivation (Sun & Hsieh, 2018). The next suggestion for classroom strategies also makes the students feel more purpose in their learning, specifically through relevance of the content.

### **Content Relevance**

Making the content of the learning relevant to the students significantly increases intrinsic motivation (Glennon, Hinton, Callahan, & Fischer, 2013; Kusurkar et al., 2011). Because students are required to attend school, teachers often neglect to implement a “hook”

in the lesson as one may if s/he needed to entice attendees. However, it is important for student motivation that the teachers do not neglect this important step and rather put a large emphasis on answering the question of, “Why does this matter?” When the material is relevant to the students’ lives outside of the classroom, they will have more of a desire to learn it (Kusurkar et al., 2011). In explaining how important it is to show relevance of the material, Blackburn and Armstrong (2017) write,

When we do workshops with teachers, we know they come into our sessions with one burning question: "How can I use this information immediately?" Adult learners are juggling so many demands that they prioritize activities and their attention based on how well something meets their immediate needs. Students are similar, except they don't have the choice to leave. So often, we forget to show students why they need to know what we are teaching. (para. 5)

Just as an adult wants a reason to value material, students also want to find purpose in their learning. The relevance of the information often determines how much value a student places on it, therefore impacting his or her motivation (Blackburn & Armstrong, 2017). In an aforementioned experiment, it was found that students who read about struggles that well-known scientists underwent made them feel more motivated in the sciences than students who read solely about the scientists’ accomplishments. This was explained to be the case because the students felt more connected to the scientists and therefore felt more motivated to study the science material overall (Lin-Siegler et al., 2016). Once the content seemed more related to the students’ lives, they felt more inherently interested in learning it.

### **Teacher’s Role**

Serin (2018) writes that a teacher’s passion is also important in building intrinsic motivation. The passion that teachers express about the material allows for students to interpret the material as important in its own right, therefore building on its inherent value and altering how the student perceives learning (Serin, 2018). Serin (2018) also explains that

the passion shows a high level of commitment that encourages student achievement. In addition to teaching passionately, having a relationship with the students is important in building motivation (Lin Siegler et al., 2016). When the classroom environment is one of possibility and connectedness, intrinsic motivation increases (Kusurkar et al., 2011).

### **Classroom Structure**

While classroom structure varies based on grade and several other factors, it is definitely a factor for teachers to consider while considering motivation. Kusurkar et al. (2011) notes that it is important to plan the seating in the classroom in a way that will allow for interaction within the students and between the students and teacher. Lin-Siegler et al. (2016) discuss the impacts of distraction on motivation. They mention a study that found that it was motivationally beneficial for students when temptations were prevented rather than altered once already present. These findings highlight the importance of being intentional in regards to classroom structure, specifically pre-empting potential distractions, such as removing distracting stimuli from sight or having somewhere to place cell phones upon entry to the classroom (Duckworth, White, Matteucci, Shearer, & Gross, 2016). While this may be difficult to pinpoint for education overall, as each grade differs, it is worthwhile for teachers to consider before the school-year.

The pedagogic perspective illuminates several interventions for teachers to implement in the classroom. As discussed, they include setting goals and providing feedback, giving choices, making learning interactive, making the content relevant, teaching passionately, and having a deliberate classroom structure. The last section of the paper discusses challenges in developing intrinsic motivation in classrooms.

### **Challenges**

While research suggests that intrinsic motivation can be developed through intentional strategies and techniques, there are limitations which should be addressed. The next section discusses two limitations. One limitation is the level of interest in the curriculum itself that may be too low to allow for intrinsic motivation in that area. The other limitation is the questionable impacts of rewards in the classroom, as there are mixed results as to whether rewards benefit or undermine intrinsic motivation.

### **Curriculum**

The assigned curriculum can itself pose a challenge. Every child has individual preferences, and therefore the same content may not appear inherently interesting to different children. If a topic is not remotely inherently interesting, it lacks the potential for intrinsic motivation and may require the use of strategies for extrinsic motivation (Ryan & Deci, 2000; Sun & Hsieh, 2018). On the other hand, sometimes information is transferred in a way that is engaging and fun in order to increase intrinsic motivation despite the boring curriculum, but done so to an extent that prevents significant learning (Mathewson, 2019). In certain cases, the need to teach the required curriculum may not allow for the building of intrinsic motivation, yet nonetheless needs to be prioritized. Another challenge to intrinsic motivation is the questionable influence of rewards on motivation.

### **Influence of Rewards**

The impact of the use of rewards on intrinsic motivation is debated. Some have found that the implementation of rewards not only does not assist in increasing intrinsic motivation, but rather undermines it (Domenico & Ryan, 2017; Ryan & Deci, 2000; Serin, 2018). Studies have shown that people's initial interest and engagement in activities decreased once they received rewards for the activity (Domenico & Ryan, 2018). A reason for this may be the

overjustification effect, which explains that people have a tendency to view their own behaviors as being motivated by extrinsic reasons and they therefore underestimate the intrinsic motivation that truly was present (Aronson, Wilson, Akert, & Sommers, 2016). Practically in the classroom, these findings would mean that negative feedback, deadlines, and external impositions would decrease intrinsic motivation (Domenico & Ryan, 2018).

Others, however, have found that rewards are often fundamental to building intrinsic motivation and do not come with negative effects (Serin, 2018). Some research has been done on the nuances within this view. Williams and Stockdale (2004) found that using tangible rewards is a positive implementation when it is combined with the teacher's expression of the activity's intrinsic value and when the rewards are granted based on the quality of the work. Another study showed that the size of the reward impacts extrinsic motivation, but the amount of time between the action and the reward impacts intrinsic motivation, as the sooner the reward is given the more the student is conditioned to associate the activity and reward (Woolley & Fishbach, 2018). Another aspect to consider is the consistency with which rewards are given. Task-contingent rewards, which are rewards that are granted as long as a task is completed regardless of how well it is done, are more undermining of intrinsic motivation than performance-contingent rewards, which are rewards that are granted depending on how well the task it performed (Aronson et al., 2016). However, even within performance-contingent rewards, intrinsic motivation may be at risk, as students may feel evaluated and therefore pressured to do well (Aronson et al., 2016).

This debate is especially relevant towards the presence of praise, as praise can be viewed as an extrinsic motivator or an intrinsic motivator. As mentioned in reference to encouraging a growth mindset, mastery goals, and grit, certain types of praise are beneficial

for building intrinsic motivation, such as those that help the students focus on their own efforts rather than the teacher-evaluation (Guest & Hilton, 1996; Wellington Learning and Research Centre, n.d.). However, praise can also easily be viewed as a reflection of the teacher's approval, which would bring about extrinsic motivation in the students. Ultimately, the results of the impacts of rewards on intrinsic motivation are inconclusive; therefore while they are necessary at times, such as when attempting to teach a new skill quickly (Guest & Hilton, 1996), there is more support for the other strategies provided. The paper concludes with a summary of the perspectives and strategies as well as recommendations for future study.

### **Summary and Discussion**

In order for students to feel driven to learn in a way that will deepen and extend their learning, teachers need to help them develop their intrinsic motivation. This paper outlines three perspectives of intrinsic motivation. From the developmental perspective, intrinsic motivation seems to be driven from an innate experience of curiosity and a desire to see oneself as autonomous and creative, rather than a drive to satisfy physiological needs (Domenico & Ryan, 2017). Research has found that intrinsic motivation partially stems from the "brain reward network" that transmits electrical stimulations in response to curious exploration, as well as from the dopamine neurotransmitter system, explaining intrinsic motivation as something independent of satisfaction of physiological needs (Domenico & Ryan, 2017; Gruber et al., 2014; National Scientific Council on the Developing Child, 2018). Researchers have also found increasing individual stability of intrinsic motivation as well as a decrease in mean intrinsic motivation throughout schooling, highlighting the necessity to begin intervention early in a child's schooling (Gottfried et al., 2001; Lepper et al., 2005;

Mathewson, 2019). From a psychological perspective, intrinsic motivation stems from a growth, rather than a fixed, mindset, associated with mastery goals, as well as through the trait of grit (Wellington Learning and Research Centre, n.d.). The psychological perspective of the Self-Determination Theory also holds that intrinsic motivation comes from satisfaction of the physiological needs of autonomy, competence, and relatedness (Deci & Ryan, 2008; Ryan & Deci, 2000). Practical classroom strategies that are helpful in increasing intrinsic motivation include helping students set goals that are viable but challenging, and providing feedback that encourages effort rather than outcome (Blackburn & Armstrong, 2017; Gottfried et al., 2001; Meece et al., 2006; National Academics of Sciences, Engineering, and Medicine, 2018; Wellington Learning and Research Centre, n.d.; Williams & Stockdale, 2014). Additionally, students should be given choices to encourage autonomy in the classroom (Domenico & Ryan, 2017; Kusurkar et al., 2011; Ryan & Deci, 2000; Serin, 2018; Sun & Hsieh, 2018; Wellington Learning and Research Centre, n.d.). Using interactive modes of learning, making the content relevant to the students, teaching passionately, creating a relationship with the students, and structuring the classroom layout intentionally are all effective strategies in increasing intrinsic motivation as well (Blackburn & Armstrong, 2017; Glennon et al., 2013; Kusurkar et al., 2011; Lin Siegler et al., 2016; Serin, 2018; Sun & Hsieh, 2018). Some challenges to developing intrinsic motivation include curriculum that is inherently uninteresting to specific, or all, students, as well as the questionable impacts of rewards in the classroom (Aronson et al., 2016; Domenico & Ryan, 2017; Guest & Hilton, 1996; Mathewson, 2019; Ryan & Deci, 2000; Serin, 2018; Sun & Hsieh, 2018; Woolley & Fishbach, 2018).

Many questions remain regarding motivation. Future research should address the debate between the effects of extrinsic rewards on intrinsic motivation. The lines of intrinsic and extrinsic motivation are already blurred, as the effects of what seems like an intrinsically motivated action are feelings of enjoyment or satisfaction from hard work, which may seem like rewards in themselves. Therefore, to whatever extent possible, research should look into which of these effects are beneficial to learning and which are not. While this paper addressed intrinsic motivation specifically, it is worth noting that extrinsic motivation is not a purely negative drive, and actually may act as an important part of success in any professional career, such as aiming for a raise within the work field. Therefore, pedagogical practices should not completely neglect all practices that lead to extrinsic motivation. This highlights the importance of researching the interconnectedness of intrinsic and extrinsic motivation and analyzing the degrees to which each should be present.

Research can also address how teachers should most effectively praise effort in a class that is comprised of students who need to put in different amounts of effort to reach the same outcome. For example, if one child needs to invest little effort in order to do well, but another child needs to invest extensive effort, should they be equally praised?

Future research can also include an investigation of which of the above strategies work best for different age groups. Gottfried et al. (2001) found that although there was an overall decline in academic intrinsic motivation over time, this trend differed in ages 16 to 17, as there was a slight increase within that time period. This can potentially be attributed to the students' recognition of the larger picture through looking into colleges and careers, however this again appears to be somewhat extrinsic, begging the question of the blurred lines once again. Within the Orthodox Jewish community, there is a popular trend to study

abroad in Israel for a year, with a focus in Judaic studies. The author has observed what appears to be an increase in academic intrinsic motivation in many students throughout this year, as seen by observed behaviors of people opting to learn in their free time as well as choosing to pay attention when grades are not dependent upon doing so. This begs the question of what raises intrinsic motivation in this environment specifically, and whether the age or stage of life acts as a determinant within it.

This research raises additional questions, such as “what are the potential negatives to increasing intrinsic motivation?” Within life, extrinsic motivation is often necessary, such as aiming for a raise in work. By strongly emphasizing intrinsic motivation, does it put students at risk to have unrealistic expectations of the world as adults? Additionally, this paper only addresses the interplay of the teacher’s classroom implementations and intrinsic motivation, but it would be beneficial for research to assess the other factors that influence as well, such as encouragement towards learning at home.

Research shows that academic intrinsic motivation is important for several purposes, in that it deepens learning, elongates the retention period, and helps students overcome challenges (Domenico & Ryan, 2017; Kusurkar et al., 2011; Lin Siegler et al., 2016; McClintic-Gilbert et al., 2013; Sun & Hsieh, 2018). With this in mind, it is worthwhile for teachers to understand the developmental and psychological perspectives of intrinsic motivation and to apply these findings to practical classroom strategies that can help increase intrinsic motivation in students. While at first glance, exerting the time and effort to implement motivational strategies may appear to be a waste of resources, in reality this contribution will likely be invaluable to the students’ everyday lives in the classroom as well as their lives when they leave the classroom. To enhance intrinsic motivation is a challenging

task, but it is one that, when executed successfully, can result in a lifelong love of learning that will accompany the students on their journey through a world laden with endless learning opportunities.

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