

D.R.I.V.E.N. School System: A Reformed Education Model

by

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## Abstract

We believe there is a lack of individualized and effective learning experience in the majority of education systems in the status quo. This leads to a disdain for everyday school life, indecisiveness in selecting a field of study post-high school, and the absence of passion for attaining knowledge that extends throughout a lifetime. After conducting research regarding alternative teaching methods and school structures through this joint project, we have developed D.R.I.V.E.N. School System in order to satisfy this need. In 5th grade, we will test students for emerging qualities that indicate they will excel in a certain area. Their education in our schooling system will begin in 6th grade and will tailor to their individual needs as not only a student and future worker but as a lifetime scholar. These students will likely excel in life as they will have a more in depth fundamental knowledge of their predisposed capabilities in addition to the tenacity that stems from a self-driven and in-depth education. By incorporating the use of Montessori teaching methods, adhering to a discipline specific curriculum, and grouping students by ability, we plan to eradicate the aforementioned problems from the education system.

This paper, specifically, addresses the alternative teaching methods and classroom structures that will be used in the classrooms at D.R.I.V.E.N. as well as how these techniques will influence students. Components from education theories such as the Montessori Method, Dewey's Theory of Education, and Self-Determination Theory will be combined to form an environment that fosters creativity and autonomy while still providing students with the skills and knowledge needed to succeed in their adult lives.

The word D.R.I.V.E.N. is more than just a name. The phrases that make up this acronym encapsulate the core values that this reformed education model revolves around:

- Discipline Specific;
- Refined Curriculum;
- Integrated Teaching Methods;
- Vocation Preparedness;
- Expanded Opportunity;
- Network Driven

### **Literature Review**

In order to understand the methods that would be effective in D.R.I.V.E.N. School System, I have conducted research regarding unconventional teaching methods, alternative classroom structure, and the factors that influence students' attitude toward education.

#### **Unconventional Teaching Methods**

There is no lack of opinions in the fields of education and psychology regarding the ways people learn and the most effective ways to educate adolescents, but the three that we chose to focus on were the Montessori Method, Dewey's Theory of Education, and Self-Determination Theory.

**Montessori Teaching Method.** In 1907, Maria Montessori created a school based on teaching through a student's natural curiosity and active participation. She was not of the belief that adolescents could properly learn and retain information simply immobilized at desks performing redundant tasks. Montessori's method of education incorporated elements such as an

environment conducive for democratic learning, a decentralized teacher, and progressive skill development. She employed techniques that allowed for individual, self-driven learning as well as group collaboration and discussion. She believed that, although students should actively and independently pursue their education, collaboration cultivated social skills and provided a strong sense of community. Her method of decentralizing the teacher allowed students to be more in control and independent of the classroom as well as gave teachers the freedom to facilitate independent learning rather than forcing their preconceived notions upon their students. She found that when authority is shared in a classroom, it opens up the floor for more comfortable discussion and questioning of the information without fear of ridicule or retribution. Montessori believed that the cultivation of social and physical skills was equally as important those traditionally taught in education. Her system of progressive skill development was designed such that, as a student advanced through their education, they would build upon skills that they had previously learned (Hedeen, 2005).

In a paper regarding attentiveness of students in a 1915 Montessori classroom, Sobe (2004) states that the students worked diligently without encouragement from the instructor for long stretches of time and their ability to stay on task despite observers was remarkable. Spectators described the students as having been captivated by learning.

**Dewey's Theory of Education.** John Dewey, a prominent influence on education theory in the twentieth century, believed in the principle of learning by experience. The foundation of Dewey's theory is that experiential learning is more beneficial than passive learning when a student reflects on what they observed and makes connections to past experiences (Platz & Arelleno, 2011). He believed that context had an enormous impact on learning and the way that experience was interpreted. Dewey's commitment to a democratic society had great influence on

his educational philosophy. His guidelines for interaction in a classroom setting are that (1) students respect and listen to each other, (2) students think creatively, (3) students arrive at creative solutions to mutual problems, and (4) students work to implement their decisions (Hedeen, 2005).

**Self-Determination Theory.** The Self-Determination Theory focuses on the motivations of people to behave in certain ways. Intrinsic motivation comes from inside oneself in order to satisfy an innate need. The three innate needs that every person seeks to satisfy are the needs for competence, relatedness, and autonomy. Extrinsic motivation is caused by an outside source associated with a negative consequence if a certain behavior is or isn't performed. Through a process called internalization, behaviors that were once extrinsically motivated can become integrated into a person's innate tendencies through the realization that the behavior is necessary for successful functioning and be intrinsically motivated. There are four kinds of internalization that fall along a spectrum of extrinsically and intrinsically motivated behavior: external regulation, introjected regulation, identified regulation, and integrated regulation. External regulation refers to behaviors that are initiated due to promise of reward or threat of punishment from another person or outside source. Introjected regulation signifies behavior that is self-initiated but not necessarily done to satisfy one's own desire. It is the internalizing of rules or regulations as to avoid sanctions or negative consequences. For example, a student that gets to class on time not necessarily because they care about being punctual but because they do not want to be viewed negatively by their peers. Identified regulation occurs when the individual has accepted the benefits of the behavior and does it willingly, but mostly for instrumental reasons. An example of this is a student doing extra math homework because they know it will help with their understanding of the subject. They do it voluntarily but not just because they want to do

more math homework. Integrated regulation refers to behaviors that have become integrated with the individual's values, needs, and identities and are almost indistinguishable from intrinsically motivated behavior. Integrated regulation is the most developmentally advanced kind of extrinsically motivated behavior. Research regarding Self-Determination Theory and learning outcomes has shown that social contexts that promote autonomy allow for the most intrinsic motivation and integrated internalization therefore increasing overall student motivation to participate in education (Deci, Vallerand, Pelletier, & Ryan, 1991).

A study conducted by Beachboard, Beachboard, Li, & Adkinson (2011) based on Self-Determination Theory regarding how perceptions of social context affect motivation and learning outcomes showed that students feeling connectedness among their peers and feeling that they made meaningful contributions to their academic community were predictors for higher motivation and increased proficiency in literacy, critical thinking, and job preparation.

### **Alternative Classroom Structure**

Classrooms are stereotypically structured with a single instructor lecturing to a class full of students. Structures alternative to the stereotypical model tend to be positively correlated with student involvement.

**Collaborative Learning.** In an experiment surrounding how small-group peer teaching and lecture based teaching affect test outcomes, Tessier (2007) found that small-group peer teaching leads to greater information retention and higher test scores than lecture based teaching. He hypothesized that this was due to the students being actively involved in learning and having to seek out information independently rather than passively listening to it.

**College readiness.** In 2010, Shankland, Genolini, Riou França, & Ionescu conducted a study in France regarding how well students from alternative and traditional school structures

adjust to higher education. They designated alternative school structures as those with teaching methods that promote autonomy, self-efficacy, and problem-centered coping strategies. A sample of 80 students from traditional schools and 50 students from alternative schools, including Montessori schools, showed that throughout the first year of college, students from alternative school structures adjust better than their counterparts from traditional school systems. Students from alternative schools achieved more academically and reported lower levels of anxiety and depression as well as increased psychological well-being and overall life satisfaction. Some causes of this finding could be that students from alternative school structures tend to perceive greater social support and have greater self-efficacy, both of which are instrumental when facing new and challenging situations.

**Vocation preparedness.** The officials at Wagner College thought that it was important to not only supply students with the knowledge they needed to get a degree but also the skills necessary for success in their field of study, so they created the Wagner Plan as a foundation for campus wide skill cultivating activities. Some such activities include learning communities, volunteering, community based research, internships, and practica. This provides real world experience for students before they enter the workforce and helps them to understand what skills and knowledge they will need in order to perform certain jobs. In the current economic climate, it is difficult for college graduates with no experience in their field to find employment following graduation, so the vocational experience provided through the Wagner Plan gives students an edge when entering the workforce (Idas, Crispo, Johnson, & Price, 2010).

### **Attitude Toward Education**

There are a multitude of things that can influence a student's attitude toward their education including the expectations of the instructor and whether they feel autonomous in their endeavors.

**Teacher expectations.** It is fairly common knowledge in the field of psychology that teacher expectations of a student can alter the student's performance in a classroom setting, but Harris, Rosenthal, & Snodgrass (1986) wanted to determine the "individual differences and behaviors [that] mediate the transmission of an expectation and its fulfillment by the students". They conducted a study and found that some of the major factors are teacher warmth toward the student, praise, task orientation, explanation, and lack of interruption during the lesson for feedback from the teacher. These factors were all positively correlated with student performance. Negative correlations were found when student performance was paired with off-task teaching behavior and negative teacher feedback.

In addition to the influence that teacher expectations can have on a student, teachers can also alter the mindset with which students view the education system. Research shows students that like school have higher grades as well as less likelihood to find themselves on the receiving end of disciplinary action. Students that believe they are respected, treated fairly, and appreciated enjoy school more than those who do not believe these things to be true (Hallinan, 2008). This suggests that teachers not only have a great influence on how well students perform academically, but they also significantly influence the attitudes that students hold regarding education and schooling. From this line of reasoning it can be inferred that the best way to make students want to attend school as well as achieve academically is for their teachers to treat them with respect and support.



**Autonomous classrooms.** Research has shown that supportive learning environments that promote autonomy tend to have better educational outcomes than controlling learning environments. Self-determined students show increased levels of conceptual understanding, academic achievement, engagement, and competence as well as overall school satisfaction. A study conducted by Young-Jones, Cara, & Levesque-Bristol (2014) regarding perception of autonomous versus controlling classrooms found that when instructors use autonomy supportive language, students are more likely to report increased satisfaction of their psychological needs, better perception of choice in the classroom, higher levels of competence, and are more willing to put forth effort.

### **Problem**

From simply observing the majority of education systems in the status quo, there are three clearly visible problems: students have disdain for their everyday school life, they are unprepared for their life following graduation, and they lack the passion for learning that extends throughout a lifetime.

#### **Disdain for Everyday School Life**

It is evident by simply observing the average middle or high school student in the status quo that they have a general disdain surrounding any topic related to education. A student can not be expected to thrive and excel in an environment in which they do not feel comfortable performing tasks that they do not want to be doing. Students feel that they are being forced to learn information that they think will never be useful to them and are, therefore, rebellious and refuse to learn enthusiastically.

#### **Post-High School Preparedness**

The flawed education system currently does little to prepare students for their life beyond graduation. Whether they are headed toward higher education or into the workforce, public school simply does not properly prepare them for what is to come.

There are many different components to getting a higher education that can be confusing to someone with little knowledge of the process. While guidance counselors are sometimes available to answer student questions about college, the majority of the time they do more to confuse students than to help them. This leads to students independently attempting to educate themselves on the inner workings of colleges and universities and overwhelming themselves in the process. Once students make it to college, they are unprepared as evidenced by the increasing need for remedial math and English courses as well as the multitude of students constantly switching their major and the rampant stress and anxiety present in the majority of college students. They did not gain the critical thinking skills or coping mechanisms to succeed in college while they were in high school nor were they given the proper opportunity to explore prospective career paths before they began pursuing said career.

As society becomes more industrialized and higher education becomes the norm, many public high schools barely acknowledge the fact that there are plenty of students that do not go to college for various reasons. Currently, students that do not plan to go to college are not usually taught vocational skills that would be useful in their career pathway. Students are also ill-prepared for the transition from school to workplace environment and the proper ways to behave in such a setting.

### **Passion for Lifelong Learning**

Students' disdain toward learning and rebellion that is visible in their everyday school life carries on after they graduate. Graduates simply do not pursue educational endeavors or learn

new things because they feel “burnt out” from having been made to learn new things over the course of their entire education. This pattern carries on throughout their adult lives and creates a society in which people do not try to better themselves and learn simply for the sake of knowledge.

### **Application**

The application of the aforementioned research in D.R.I.V.E.N. School System will alter both the structure of the school day and the classroom as well as how students interact with each other and the community. One of the main components of this reformed education model is the separation of students into three discipline specific groups based on their innate tendencies. These groups are STEM, humanities, and fine arts. Students will still take the same classes required by state law to graduate, but the classes will be geared toward their discipline.

### **School Day**

Comparable to many modern implementations of the Montessori Method, the school day at D.R.I.V.E.N. will be structured such that students receive instruction for a short time in the morning and then have a period of free time throughout the late morning and early afternoon in which they can pursue independent academic activities and collaborate with peers on educational projects. This allows them to receive proper instruction, actively and independently pursue learning, and cultivate social skills alongside academic skills.

### **Classroom Structure**

The classroom dynamics and education methods used in D.R.I.V.E.N. will be unlike any seen in a traditional classroom. By applying concepts from the Montessori Teaching Method,

Dewey's Theory of Education, and Self-Determination Theory, an environment conducive for active learning and critical thinking will be created.

Experiential learning will be a pivotal aspect of the curriculum at D.R.I.V.E.N. Information retention is best when students learn through real-world circumstances and are given the opportunity to draw conclusions independently. Experiential learning will be woven into the curriculum alongside classroom instruction. Vocational classes related each discipline will allow students to gain technical knowledge related to their intended career field post high school.

In order to create autonomy supportive classrooms at D.R.I.V.E.N., the Montessori ideal of decentralizing the teacher will be incorporated into the structure of the classroom. Instructors will be trained on proper education techniques such as peer teaching, group discussion, etc. that take them out of the center of the classroom and allow the students to initiate intellectual conversation in a classroom setting.

To allow students to have greater control of their education and pursue topics that will be more applicable to their future career, the class curriculums at D.R.I.V.E.N. will be somewhat fluid and open to modification. The ability to apply classroom concepts to real world scenarios interchangeably depending on each class will allow for more individualization of education. This will also help to motivate students as they will be more likely to actively participate in learning if they are interested in the subject matter.

In order to better educate students on the interconnectedness of the disciplines in real-world scenarios and introduce them to problem solving in the professional world, they will participate in interdisciplinary group projects each semester beginning in tenth grade. These group projects will be geared toward solving real world problems in their area in collaboration with business and community leaders.

## **Analysis**

The elements that will be implemented in D.R.I.V.E.N. School System would solve the three problems visible in the status quo education systems.

### **Disdain for Everyday School Life**

The structure of the classrooms at D.R.I.V.E.N. will instill within students an enthusiasm for learning. Students that are allowed to be autonomous in a classroom setting will be more intrinsically motivated in their educational endeavors and, therefore, have a better attitude toward school and be more willing to participate in the classroom. Students treated with warmth and respect from their instructors will have a better outlook on their everyday school life.

### **Post-High School Preparedness**

Students at D.R.I.V.E.N. on the path to college will be better prepared than their counterparts that attended traditional schools. The testing of students and separation into discipline-specific groups will take away some of the anxiety that comes alongside selecting a major. Students will already be aware of their innate tendencies and have an in-depth education going into their pursuit of higher education. Through experiential learning, they will have already had the opportunity to experience their prospective career and be sure of their choice, so they will not squander as much time during college switching their major multiple times.

The social context of the classrooms at D.R.I.V.E.N. will better prepare students for the workplace dynamic. Having the ability to be autonomous in their classes, they will better understand how to behave in a workplace environment and how to communicate with authority figures. The ability to take general vocational preparation classes during high school will allow

them to cultivate specific skills that will give them a competitive edge when applying for jobs following the completion of their education.

### **Passion for Lifelong Learning**

The way that the methods used at D.R.I.V.E.N. promote a passion for lifelong learning is related to the internalization aspect of Self-Determination Theory. When students internalize and integrate the regulatory behaviors that are effective for success in the education world, the regulatory process is indistinguishable from intrinsically motivated behaviors. The student sees the benefits of educational endeavors, and scholarly behavior is truly an expression of their needs rather than what is required of them. By being exposed to extrinsic motivation that leads to internalization in the classrooms at D.R.I.V.E.N., students will be provided with the environment in which they can be in the driver's seat of their education.

### **Conclusion**

In conclusion, this reformed education model, D.R.I.V.E.N. School System, solves the three major problems visible in the majority of education systems in the status quo: a disdain for everyday school life, lack of preparation for life post high school, and absence of passion for learning that extends throughout a lifetime.

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