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IS REDOING FIRST YEAR OF HIGH-SCHOOL USEFULL?[i]

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Abstract:
At the end of a school year, emotion, self-esteem, knowledge are considered by a teacher to decide whether a student is promoted or not. The aim of the study was to seek the success of students 12- to 14-year-olds who had failed a given course in the first year of high school and were still registered for a higher course in the second year of high school. Students were evaluated by their regular teachers over the years, and report cards were analyzed. Failing students were students with mean marks below 60 p.100 in a topic. No help was given during summertime. Still, students were more likely to achieve success the following year at that higher level, regardless of the topics. Up to 71 p.100 had recovered from their misunderstanding in the second semester of high school the next year. If we consider the less weak students, thus those who had failed year 1 with marks below 60 p.100 but above 49 p.100, nearly 80% of the students had recovered from their misunderstanding in the second semester. This study supports the idea that the relationship to knowledge should change in schools. We believe that intrinsic motivation may need enough time to occur at such an age. We also believe that the strong extrinsic motivation given by the teachers and the school institution of the school under scrutiny is recommended.

Keywords: emotion, academic achievement, high school success, self-esteem

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1. Introduction

At the school's annual end of the academic year, teachers wonder whether it would be more beneficial for a student with low mean marks to repeat the whole year or to let the student pass; then, what would be their performance? Of course, the first question would regard the success, but also what would be the student's self-esteem either after redoing a whole year or after success reached that way (Duchesne and Huyghebeart, 2000; Jimerson, 2001; Jimerson et al, 2002; Bowman, 2005; Jimerson and Ferguson, 2007; Morrison and Leong, 2007; Therriault et al, 2011). Evaluation is central to learning what students know (Middleton, 1933; Guskey, 1994; Agrawa, 2004). Indeed, it has been underlined in the past that if grading and reporting are two important tools of a teacher, a) they are not the same piece of information (Bloom et al, 1981), and b) they are not essential to instruction (Frisbie and Waltman, 1992). Yet redoing a year has some negative consequences on the learning of the students and on their future academic achievements (Forness et al, 1997; Jimerson, 2001; Therriault et al, 2011).

Deci and Ryan (2017) overturned one of the dominant beliefs in education, which is that the best way to motivate human beings to accomplish tasks is to reinforce their behavior with rewards and punishments. They developed the Self-Determination Theory (SDT). One of the central assumptions of self-determination theory is that any individual is willing to function optimally if he or she can meet the need for competence, the need for autonomy, and the need for relatedness. The intrinsic commitment of students is observed through behaviors and attitudes that promote their need for competence. Their attention is present in their focus on the task and their concentration. Their participation is active, the effort is sustained and intensive, their perseverance increases over time, and their emotions are expressed through the interest aroused during the activity and the demonstration of positive attitudes. On the opposite, weariness and displeasure, rapid abandonment in commitment, demotivation, lack of effort, passive participation, or divided attention are signs to teachers of potential dropouts (Skinner, 1974; Watson, 1998). Thus, emotional engagement in learning is known to be part of the solution (Reeve et al, 2004; Park et al, 2012; Thompson, 2011, Ryan and Deci, 2020). Cognitive maturation takes time, but by definition, a teenager evolves physiologically (Previte, 1983) and psychologically (Piaget and Inhelder, 1966; INSPQ, 2017) in a short period of time. This is especially from year 12 to year 14 age *i.e. during the first and second year of high-school* (Piaget and Inhelder, 1966; Anthony, 2023).

Here, we explored the academic achievement of students in the second year of high school (year 2) after failing their previous year's courses (first year of high school, year 1) but had still being accepted on the following year level (year 2).

2. Methods

The population studied consisted of students from a public high school in the Province of Quebec, Canada. The students belonged to the *Monde & Passion* program in their first high school year. Both genders were represented fairly.

The mean grades for the academic year 2021-2022 (year 1) were obtained from the students' records for all matters, including Sport, Science, Mathematics, Ethics, History/Geography, French, English and Arts. A grade of 60 p.100 and above was considered a success, and a grade of 59 p.100 and below was a failure. Of that cohort of 193 students, 27 students failed a subject. Even through these failures, these students had still been accepted for the following level of their curriculum and were followed over their second year of high school (year 2022-23, year 2). Students were of both genders, aged 12-13 (and 13-14 the next year). During their primary school years, they went through the COVID-19 pandemic, which has altered normal school processing since March 2020.

The school started September 1st, the first report card for that second year was due on November 10th, and the second report card was due on February 1st. Cumulative grades were considered in the second report card; thus, marks for both semesters were included.

The scrutiny was whether the course had pass/failed marks but not about looking into the student. Hence if a student failed two topics, these were recorded as two failures even though they belong to the same student. Therefore, n=49 topics' failures at the end of year 1 of high school 2021-2022.

For statistical analysis, we ran a bilateral test on proportion with 1% risk [$P(T>Z)=0.005$ and $P(T<Z)=0.995$].

3. Results

The successes and failures of the students in their second year of high school are reported in Table 1.

At the end of year 1 of high school, 49 failures were recorded. (i.e. mean marks per topic below 60 p.100).

A. First report card

At the end of year 1 of high school, 49 failures were recorded. From that cohort, on the first report card of year 2, 41 p.100 were still in failure on the same topic, but 59 p.100 were successful in that topic (*i.e.* mean marks 60 p.100 and above).

If we look at the weakest students, the ones that had, at the end of year 1, marks between zero to 49 p.100 (instead of those having between zero to 59 p.100), *n* is reduced to n=15 failures. It makes on year 2, up to 67 p.100 of the matters that were still failures, and only 33 p.100 that were succeeding.

If we now look at the less weakened students that had marks in the different matters between 49 p.100 to 59 p.100 on their final grades of year 1 (instead of considering the total group that had failed), on the first report card of year 2 of high-school, only 29 p.100 were still failing, but up to 71 p.100 were now, successful.

B. Second report card

The successes observed in the first semester were confirmed and were even greater after the second semester.

Thus now, matters in 29 p.100 were still failures, but 71 p.100 were now successful (*i.e.,* marks of 60 p.100 and above) (Figure-1A).

In year 1, if we look at the marks between zero to 49 p.100 (instead of that between zero to 59 p.100), failures in year 2 were only 40 p.100, but now 60 p.100 were successful (Figure-1B).

Removing those weakest failures that obtained 49 p.100 and below and considering the less weaken failures that obtained between 59 p.100 to 49 p.100 on their final grades of year 1, on the second report card of year 2 of high school, 24 p.100 were still failures, but 76 p.100 were now successful (Figure-1C).

For statistical analysis, we ran a bilateral test on proportion with 1% risk [P (T>Z)=0.005 and P (T<Z)=0.995].

All results but the year 2 second report card with marks < 49 p.100 (mostly due to a small *n*) were statistically significant with |T| >2.575.

4. Discussion

One would expect poor grades from the previous year from students abstaining from schoolwork over the summer vacation would be followed by poor performance, but the opposite was recorded. These results are puzzling, as those students who previously failed had raised their grades to the successful level (60 p.100 and above) about 70 p.100 of the times. Furthermore, if we focus on the group of those students that had obtained between 49 p.100 and 59 p.100 the previous year (year 1), they now had raised their marks near to 80 p.100 success, they had caught their misunderstanding.

What had changed? Time itself could be important in developing autonomy. By definition, a teenager evolves physiologically (Previte, 1983) and psychologically (Piaget and Inhelder, 1966; INSPQ, 2017) in a short period of time. The two months of summer break (June 22nd to September 1st) and the additional five months of school attendance after the first two semesters might be time enough to mature and achieve awareness and intrinsic motivation to take place. This is especially from year 12 to year 14 age *i.e. during the first and second years of high school* (Piaget and Inhelder, 1966; Anthony, 2023). Our results suggest, likewise, that Table 1 reports an increase in success between the first and the second semester of year 2. Also, even the weakest students with grades 49 p.100 and below at the end of their year 1 of high school, and who were still in the failure range on the first semester of year 2 (67 p.100 failures), had nicely recovered on their second semester of year 2 as only 40 p.100 of their matters were still in failure. Those failures were of only three students who had multiple failures. This last piece of information underlines that passing over to the next year, whatever the previous grades are, is not beneficial for all students. Of course, we could not know whether these students would have performed the same way if they had been kept on their previous year 1.

It remains possible that knowing that good fortune has been given to the student might have a play in the student's success as emotional engagement in learning is known to take place (Reeve et al, 2004; Ryan and Deci, 2020; Park et al, 2012). Deci and Ryan (2017) overturned one of the dominant beliefs in education, which is that the best way to motivate human beings to accomplish tasks is to reinforce their behavior with rewards and punishments. They developed the Self-Determination Theory (SDT). One of the central assumptions of self-determination theory is that any individual is willing to function optimally if he or she is able to meet three basic psychological needs:

1) *the need for competence* (interacting effectively with one's environment and perceiving one's actions as producing consequences),
2) *the need for autonomy* (acting voluntarily and exerting control over events), and
3) *the need for relatedness* (being meaningfully connected to others and having warm relationships with people who are deemed important).

The intrinsic commitment of students is observed through behaviors and attitudes that promote their need for competence. Their attention is present in their focus on the task and their concentration. Their participation is active, the effort is sustained and intensive, their perseverance increases over time, and their emotions are expressed through the interest aroused during the activity and the demonstration of positive attitudes. On the opposite, weariness and displeasure, rapid abandonment in commitment, demotivation, lack of effort, passive participation, or divided attention are signs to teachers of potential drop-outs (Skinner, 1974; Watson, 1998).

Evaluation is central to learning what students know (Middleton, 1933; Guskey, 1994; Agrawa 2004). Considering that students were failing the year before, such successes in the grades of the next year's level (Figure 1A and 1C) supports the concept that marks are not really an issue and that the concept of relationship to knowledge should change in schools (Duchesne and Huyghebeart, 2000; Therriault et al, 2011) as learning is a source of pleasure (Berridge, 2000). Indeed, it has been underlined in the past that if grading and reporting are two important tools of a teacher, a) they are not the same piece of information (Bloom et al, 1981), and b) they are not essential to instruction (Frisbie and Waltman, 1992). Nevertheless, redoing a year has some negative consequences on the learning of the students and on their future academic achievements (Forness et al, 1997; Jimerson 2001; Therriault et al, 2011).

Considering our results, teachers' and students' relationship to knowledge should change in a classroom. Rising over the next year, even though the students failed the previous level, could be accepted for the first two years at high school at least of students with final marks in year 1 between 49 p.100 to 59 p.100, and probably even for some weaker students below 49 p.100. If marks should be of a low priority, an evaluation still implies some preparations and homework that are important in the process of retaining knowledge (Guo et al, 2021).

Worth mentioning, the school under scrutiny possess a good follow-up of the students, including one Remedial Teacher, one Psychologist, four Special Education Technicians, and one Resource Teacher. At the same time, the literature shows that

meeting or not-meeting basic needs of the students would depend on four categories of practices present in the classroom environment:

1) *Structuring*, refers to practices that aim to make the environment predictable to students by clearly communicating expectations, providing frequent feedback on one's behaviors, and explaining the consequences of not-meeting expectations.
2) *Autonomy support*, refers to practices characterized by considering the individual's perspective and feelings, explaining the reasons for expectations, and providing opportunities to make choices, making decisions, taking responsibility, and solving problems.
3) *Commitment*, relates to practices characterized by the attribution of affective and material resources, for example, devoting time, showing interest, encouragement, rendering service, etc.
4) *Control*, on the other hand, refers to behaviors qualified as psychological control, including guilt, recourse to threats, contingent rewards and commandments (Duchesne and Huyghebeart, 2000).

Therefore, our teachers and institution have adopted behaviors, attitudes, and practices that promote this engagement. They promote student engagement in tasks through observable and tangible practices that develop student autonomy and potentially impact their learning. By taking note of the students' academic and personal files, the support measures offered, and the student's personal history, the teachers are already committed to the students' success. They support their autonomy by considering their interests, for example, and presenting choices of activities, appropriate challenges, or benefits to be derived. They can even consider students' reactions, listen to them, welcome their reactions and feelings, and adjust the tasks. Further, according to the Ministry of Education Program of Quebec (Gouv. Quebec, 2011), teachers evaluate knowledge but also evaluate competencies, skills, which is a way to support students' autonomy as it promotes meaningful tasks that can engage their interests.

Of the 49 failures at the end of year 1 of high school, about 70 p.100 were successful in their second semester, and nearly 80 p.100 for the student that had between 59 to 49 p.100 on their year 1. Further, an increase in success is present until the second semester. Thus, rising over the next year, even though the students failed the previous level, could be accepted for the first two years at high school, at least for students with final marks in year 1 between 49 p.100 to 59 p.100 and probably even for some weaker students.

5. Conclusion

This study focuses on students in the first and second year of high school between 12 to 14 years old. Further study should be done to explore what will happen in their future high school curriculum. Our conclusion supports the idea that the relationship to knowledge should change in schools and that rising over the next year, even though the students failed the previous level, is recommended for the first year of high school, at least for students having final marks in year 1, between 59 p.100 to 49 p.100, but eventually also for some weaker students below 49 p.100. We believe that intrinsic

motivation may need enough time to occur at such an age. We also believe that the strong extrinsic motivation given by the teachers and the school institution under scrutiny is recommended.

Conflict of Interest Statement

The authors report that there are no competing interests to declare.

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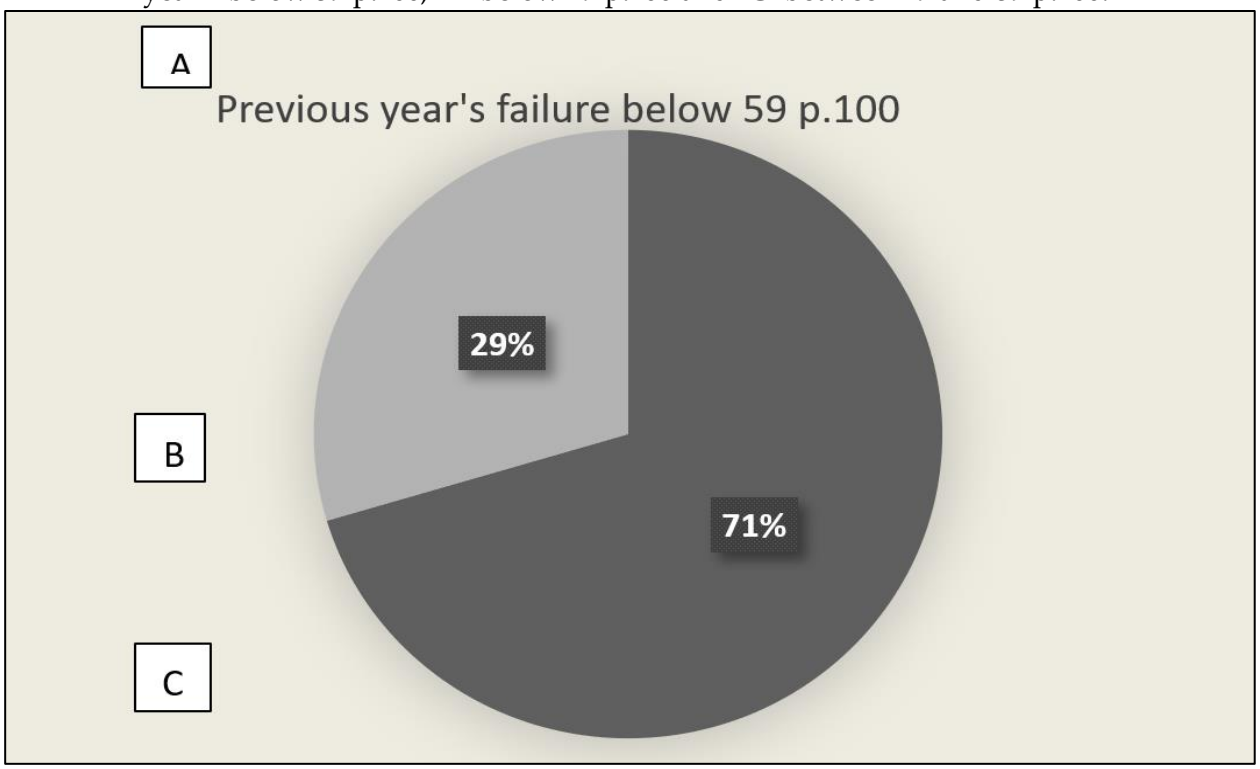
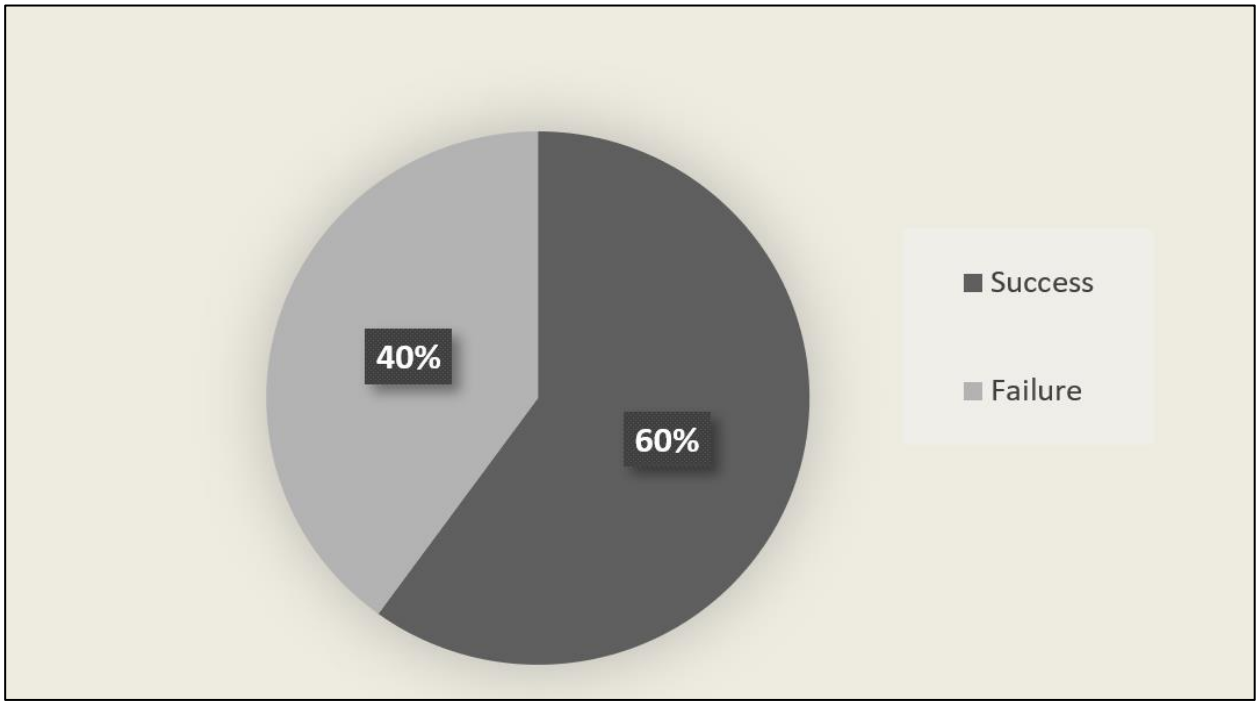
Table 1: Success and Failure of students in year 2 of high-school when they had failed their year 1 at different magnitudes*

	Year 2 first Report card				**Year 2 second Report card**		
	Year 1 Marks ≤ 59 p.100	**Year 1 59 p.100 ≤ Marks ≤ 49 p.100**	**Year 1 Marks < 49 p.100**		**Year 1 Marks ≤ 59 p.100**	**Year 1 59 p.100 ≤ Marks ≤ 49 p.100**	**Year 1 Marks < 49 p.100**
Succeeding (%)	59	71	33		71	76	60
Failling (%)	41	29	67		29	24	40

*__Note:__ The first year of high school is referred as year 1; the second year of high school is referred as year 2.

Figure 1: Success and failure of students that had failed in year 1 of high school, at their second semester in year 2 of high school, with -A- mean marks of year 1 below 59 p.100, -B- below 49 p.100 and -C- between 49 and 59 p.100.

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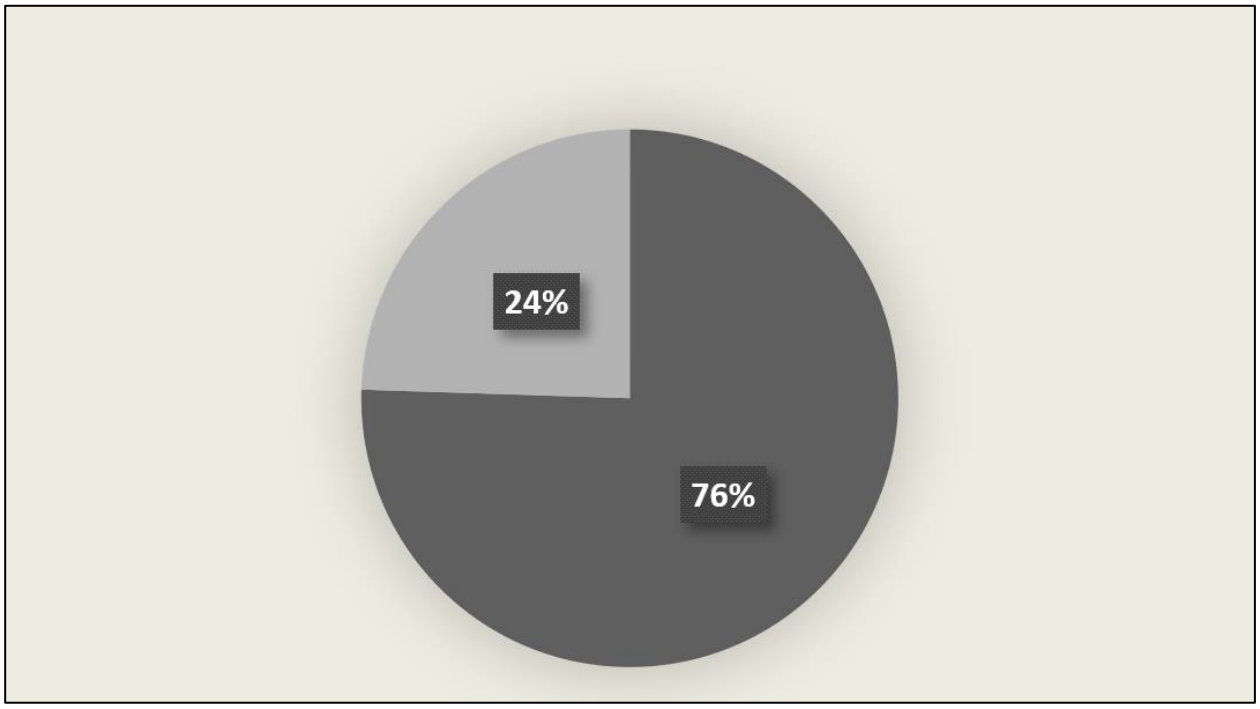
60%
Success
Failure


24%
76%