

## Enthusiastic Students: A Study of Motivation in Two Alternatives to Mandatory Instruction

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*Abstract The present study used Self-Determination Theory as a framework for examining age-related changes in motivation for 57 students aged 7-17 years in the context of two alternative educational environments: a home school resource center and a democratically organized school. Students completed the Academic Self-Regulation Questionnaire in order to assess their intrinsic motivation and three types of extrinsic motivation. In stark contrast to the well-replicated negative correlation between age and intrinsic motivation in traditional schools, there was no relationship between age and any of the four motivation subscale scores in the present study. Interpretations and implications of these findings are discussed.*

**Keywords** Self-Determination Theory, alternative education, intrinsic motivation, extrinsic motivation, democratic school, home schooling

### Introduction

For a hundred years or more, renowned critics of the dominant academic classroom schooling system, including John Dewey (1994/1916), A.S. Neill (1992/1960), George Leonard (1968), John Holt (1976), Raymond and Dorothy Moore (1986), and Alfie Kohn (1999), have lamented the detrimental effects of mainstream educational institutions on children's motivation. In spite of this long-standing criticism, data on the motivational consequences of alternatives to the traditional classroom are lacking. It is essential, then, to document basic motivational patterns among children who attend alternative educational environments (e.g., democratic schools, homeschooling), and to compare these findings to established patterns from research conducted in mainstream schools.

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### Motivation and the Self in Context

Motivation at the most basic level involves the initiation, maintenance and intensity of action taken towards a goal (Bergin, Ford, & Hess, 1993; Deci & Ryan, 2000). According to Self-Determination Theory (SDT), it is critically important whether the causal force behind such action is internal or external to the self-concept (Deci & Ryan, 2000; Deci, Schwartz, Sheinman & Ryan, 1981; Ryan & Connell, 1989; Sheldon, Ryan & Reis, 1996). When causal attributions for one's own behaviour fall outside the self, then the actions are construed to some degree as coerced or compelled, and are often referred to as extrinsically motivated. By contrast, when causal attributions fall within the self, then such actions are construed as self-generated and are referred to as intrinsically motivated.

Although the basic terminology of intrinsic versus extrinsic motivation suggests a simple dichotomy, a nuanced conception may be more accurate (Corpus, McClintic-Gilbert, & Hayenga, 2009; Harter & Jackson, 1992; Lepper, Corpus, & Iyengar, 2005; Ryan & Deci, 2000a). While intrinsic motivation is agreed to be a unitary construct, extrinsic motivation consists of a continuum of regulation types with four distinct levels depending on the degree to which actions are endorsed by the self: external, introjected, identified and integrated regulation (Chirkov, Ryan, Kim, & Kaplan, 2003; Ryan & Deci, 2000a, 2000b). External regulation refers to compliance driven by rewards and punishments; introjected regulation refers to compliance driven by internal pressures such as guilt or anxiety; identified regulation refers to compliance driven by acknowledgment that the action is consistent with the individual's values; and integrated regulation refers to compliance driven by acceptance of the activity as consistent with self-expression (Ryan & Connell, 1989).

Movement toward the more intrinsically motivated and autonomously regulated end of the continuum is facilitated when the basic psychological needs of autonomy, competence, and relatedness are met (Baard, Deci, & Ryan, 2006; Deci & Ryan, 2000; Ryan & Deci, 2000b; 2006). Autonomy is the need to be the volitional and causal source of one's own activities (Reeve, Nix, & Hamm, 2003). Competence is the need to have a sense of being effective at achieving relevant goals in a situation (MacIver, Stipek, & Daniels, 1991). Relatedness is the need to feel connected to and recognized by other people (Ryan & Deci, 2006). According to SDT, these are fundamental to universal human psychological needs analogous to how material nutrients are fundamental and universal human biological needs. These needs, moreover, are directly tied to human functioning such that thwarting a need leads to ill-being while meeting a need leads to well-being (Deci & Moller, 2007; Reis, Sheldon, Gable, Roscoe & Ryan, 2000; Sheldon et al., 1996; Véronneau, Koestner, & Abela, 2005).

In addition, SDT recognizes that support for basic needs and their motivational consequences is highly dependent on contextual factors (Deci & Ryan, 2002).

Indeed, a variety of motivational scholars argue that the particular manifestation of motivation within individuals is based upon the contexts in which those individuals are embedded (Hickey, 1997; Urdan, 1999; Volet & Jarvela, 2001). Motivation is therefore not necessarily stable across situations (Harter, Whitesell & Kowalski, 1992; Paris & Turner, 1994) or even across time in the same situation when particular elements shift (e.g., timing of examinations; Bong, 2005). Motivation instead is a dynamic property of the person in context (see Brophy, 2010).

### Motivation in Education

Research has consistently shown that intrinsic motivation is the gold standard for promoting sustained and meaningful engagement in education. Indeed, intrinsic motivation is associated with deep conceptual learning strategies (Meece, Blumenfeld, & Hoyle, 1988; Pintrich & Garcia, 1991), creativity (Amabile, 1996), engagement in classroom activities (Otis, Grouzet, & Pelletier, 2005; Ryan & Connell, 1989), positive affect (Gottfried, 1985; Harter, 1981; Harter et al., 1992; Ryan & Deci, 2000b), and adaptive coping strategies (Boggiano, 1998; Ryan & Connell, 1989). Intrinsic motivation is also positively associated with academic achievement, favourable perception of academic competence, and minimal academic anxiety (Corpus et al., 2009; Gottfried, Fleming & Gottfried, 2001; Lepper et al., 2005; for a summary, see Sansone & Harackiewicz, 2000; Stipek, 2002). The more controlled forms of extrinsic motivation, by contrast, are associated with the diminishment of well-being and learning (Assor, Roth, & Deci, 2004; Deci & Ryan, 2000; Ryan & Deci, 2000b, 2006). Intrinsic motivation, therefore, can be considered the most desirable form of motivation for learning in general, and for enabling children to engage with instructional activities more specifically.

Unfortunately, children in traditional classrooms show a robust decline in intrinsic motivation from approximately first through twelfth grades (Bouffard, Marcoux, Vezeau, & Bordeleau, 2003; Corpus et al., 2009; Gottfried et al., 2001; Harter, 1981; Hunter & Csikszentmihalyi, 2003; Lepper et al., 2005; Otis et al., 2005; Pintrich, 2003; Prawat, Grissom, & Parish, 1979; Wigfield, Eccles & Rodriguez, 1998). There is some evidence that extrinsic motivation may also decline across the school years in traditional school settings, suggesting that it does not supplant intrinsic motivation (Corpus et al., 2009; Otis et al., 2005). The observed declines in intrinsic motivation should be alarming to educators, policy makers, and society because intrinsic motivation is an inherent property of healthy children (Deci & Ryan, 2000; Véronneau et al., 2005). Moreover, because intrinsic motivation can be enhanced or thwarted by the conditions in which the children are situated (Jang, Reeve, & Deci, 2010; Koestner, Ryan, Bernieri & Holt, 1984), one must consider the possibility that traditional schools are systematically compromising the well-being of some proportion of the children they serve.

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The well-documented decline in intrinsic motivation with age, however, may not be inevitable, which is a crucial point if the critics' arguments and proposals for change are to be taken seriously and the classroom situation improved. For example, Gottfried et al. (1998, 2001) found that students' academic intrinsic motivation in mainstream schools declined from ages 9 to 17 in several subject areas but not in the domain of social studies. Other evidence indicates that particular subgroups of students are able to maintain intrinsic motivation over the course of an academic year even while their peers are experiencing the typical decline (Haimovitz, Wormington, & Corpus, 2011). Even more striking, Apostoleris (2000) documented a positive correlation between age and intrinsic motivation in a cross-section of homeschooling children aged 6 to 16 years. It is important to note, however, that Apostoleris used an assessment instrument (i.e., Harter, 1981) that conceptualized intrinsic motivation as the polar opposite of extrinsic motivation such that children who indicated a high level of one motive type necessarily indicated a low level of the other. The positive correlation between age and intrinsic motivation, therefore, could be an artefact of a negative correlation between age and extrinsic motivation.

In sum, the situation in education regarding motivation is that there is a well-documented decline in intrinsic motivation amongst students in mainstream schools. That decline is alarming because intrinsic motivation is both the gold standard for motivation to learn and can be an indirect indicator of children's well-being. There is some evidence that the decline is not inevitable and one study suggests that a different pattern may exist in at least one alternative form of schooling. If there is, in fact, a different pattern of motivation in even one alternative form of schooling then the body of criticism needs be reviewed as more than mere ideological posturing. The various alternatives that have been tried deserve to be given appropriate empirical attention to discern which of them are associated with healthier patterns of motivation in their students and what elements of their organizations and practices hold the keys to nurturing children's motivation to learn and grow.

### **Alternatives in Education**

Traditional schools could be conceptualized as using mandatory instruction in the sense that they are subject to a combination of state laws and district policies that make instruction compulsory rather than optional. For the purposes of this study an "alternative" is considered to be an educational organization with central defining policies that make classroom instruction for children and youth an option rather than a requirement. One such alternative is homeschooling, which encompasses a variety of educational approaches that view parents as being naturally endowed with the primary responsibility to educate their children. This very limited commonality places no restriction on the variety of approaches to educating children that parents

choose: from re-creating a school-like environment in the home, in which parents act out the role of a formal instructor; to engaging the children in the family business, in which children are given meaningful responsibilities that necessarily elicit their engagement with basic skills; to unschooling, in which the child's own interests are the primary determinant of what activities will be pursued; to as many different variations as parents could possibly dream up. This also encompasses the use of both public and private community resources and specially designated resource centres that offer a variety of instructional courses. There are undoubtedly some families who impose instruction as a component of their homeschooling practice, but children in such families arguably have a level of agency in confronting the decision-makers that is entirely absent for students in traditional schools. Perhaps because homeschooling is defined broadly, a full 1.5 million school-aged children were educated in the United States using this approach as of 2007 (Bielick, 2008; see also Ray, 2011). Studies suggest that homeschooled children generally do better than average on standardized tests and come from a wide variety of family situations (e.g., Cai, Reeve & Robinson, 2002; McDowell, 2000; Medlin, 2000; Ray, 2000).

A second alternative to mandatory instruction is democratic schooling, which does not have a consensus definition but typically includes some provision for students to have a relatively high degree of autonomy in decisions regarding participation in courses of instruction, most often with the choice to opt out entirely. Democratic schooling is a far smaller movement than homeschooling. As of early 2012 there were 238 self-identified democratic schools in 33 countries listed by the Alternative Education Resource Organization (2012). This small movement is notable for being long-lived and having had a degree of influence on the field of education far beyond what their numbers might suggest (Neill, 1992/1960). The few formal studies of democratic schooling have not examined motivational constructs per se. They range from surveys of graduates conducted by Sudbury Valley School in Massachusetts (Greenberg, Sadofsky, & Lempka, 2005; Greenberg & Sadofsky, 1992) to independently sponsored ethnographic (Gray & Chanoff, 1986; Gray & Feldman, 1997, 2004) and case study (Stronach & Piper, 2008) research. These studies generally show that students attending democratic schools are demographically similar to the broader populations in which they are embedded and that there is no evidence of any detrimental effects of attending such schools.

What is it, then, about these alternatives that may support a motivational pattern different from that observed in traditional schools? From the perspective of SDT, one must begin by considering basic need satisfaction, which is thought to underlie motivation. Autonomy is one basic need that is chronically unmet in traditional classrooms (Reeve, 2009; Reeve, Bolt & Cai, 1999; Reeve & Jang, 2006; Reeve, Jang, Carrell, Jeon & Barch, 2004; Reeve, et al., 2003). Reeve (2009) provides compelling evidence for a variety of forces in traditional classroom settings from

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“above” (e.g. societal and organizational), “below” (e.g. student behaviour) and within teachers (e.g. personality) that push them towards thwarting the autonomy needs of students. Because the organization of traditional schools does not afford any other options, students must pursue their need for autonomy within the context of teacher-provided instruction. In the context of democratic schools and many forms of homeschooling, however, instruction is typically provided only when students take volitional action to receive it, which should result in a different pattern of motivation.

This practice of providing instruction only on demand is likely to meet students’ needs for relatedness and competence as well as autonomy. When teachers have explicit support from their school to use their own judgment as they relate to students both personally and instructionally, their connection to students is likely enhanced and the relatedness need better satisfied. In addition, students’ sense of competence may be better supported in that they are actively involved in choosing their own activities and may be able to select those that provide an optimal match for their growing capabilities.

But what kind of age-related motivational pattern might one expect in these settings? To the extent that the basic needs for autonomy, competence, and relatedness are met, intrinsic motivation should be supported and the traditional pattern of age-related decline should be less pronounced. Because young children are inherently intrinsically motivated, it may be more reasonable to expect a pattern of motivational maintenance than the pattern of increasing intrinsic motivation with age that was suggested by Apostoleris’ (2000) work with homeschooling children. Levels of extrinsic motivation, however, may show age-related change even in alternative contexts that provide robust support for basic needs. Particularly the more externally regulated forms of extrinsic motivation may be expected to decline with age as children become more competent at self-regulating their behaviour and more prone to assert their independence from adults (Berndt, 1979; Eccles et al., 1993).

### **The Present Study**

The literature showing declines in intrinsic motivation with age is impressively consistent but fails to encompass children who either, through homeschooling, have direct influence with the primary decision-makers about their education (their parents), or who are given the opportunity to be in direct control of their own learning in democratically organized alternative schools. The present study was intended to document the age-related pattern of motivation among students who are homeschooling or attending a democratic school on the speculative assumption that these alternative environments are similar to one another on the key motivational dimension of autonomy support, and potentially with respect to support for competence and relatedness as well. Would the pattern of intrinsic motivation in the

context of non-mandatory instruction differ from that of the negative correlation between intrinsic motivation and age that has been well-documented in schools in which instruction is a mandatory imposition? The primary hypothesis is that students in these alternatives will maintain intrinsic motivation across the school years, evidencing little to no correlation between intrinsic motivation and age. A secondary hypothesis is that the most controlled form of extrinsic motivation—external regulation—will show a negative correlation with age among students attending alternative educational environments.

## Method

### *Sites*

The two school sites chosen for this study were located in a metropolitan area of the Northwestern United States. Both shared the characteristic that instruction requires an active choice on the part of a child, but the two sites were organized and administered in different ways as detailed below. Both sites served families from a relatively wide range of income levels, with approximately 10% of students qualifying for free or reduced lunch. The student population was largely Caucasian, reflecting the limited ethnic/racial diversity of the geographical region. The homeschool population nationally is also largely Caucasian and with moderate to high levels of income (Bauman, 2001). Estimating rates of free and reduced lunch qualification from national statistics suggests that our sample may have qualified at lower rates than the homeschool population as a whole (U.S. Department of Agriculture, Food and Nutrition Service, 2011).

### Home School Resource Center (RC).

At the time of the study, the RC had two campuses where most of the 440 children they served attended on a part-time basis. It offered an extensive menu of 174 classes and 56 member activities that included traditional academic subjects but also reflected a broad array of other interests (e.g., embroidery, engineering, wilderness skills, etc.). Students had the option to take as many or as few classes as they wished and the organization of the school was similar to that of a typical community college. Approximately one third of the center's spaces were noninstructional and devoted to providing comfortable areas for social interactions among families within the RC community thus providing explicit support for the relatedness need. In the past the center was a publicly funded alternative school with the local district; they became a private tuition-supported school when the state imposed standardized instructional requirements that were not consistent with the school's philosophy of family-controlled education.

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Democratically Organized School (DS).

At the time of the study, the DS served 49 children ages 5-18 with a full-time, day school program. Classes were offered according to the inclinations of the students and staff, covering an eclectic variety of topics that included traditional academic subjects as well as more specialized interests. Students were not required to take any courses but rather had the opportunity to make free choices about what activities to pursue nearly all of the time. Indeed, students were immersed in a self-governing community based on one-person one-vote and the three rules that have been in place since the school was constituted: take care of yourself and other people; take care of the things the school and other people own; and remember that your freedom ends where someone else's begins. From this foundation the school developed a set of rules to structure how the school community operates through a variety of meetings and a board of directors. The primary meeting spaces for students were furnished with a combination of comfortable informal household items and practical items for organizing their collection of learning materials. The caring language of their core rules and the informality of the furnishings are explicit indications that relatedness was highly valued by the organization.

### *Participants*

Participants were 57 students (42% female; 86% from the RC) ranging from 7 to 17 years of age ( $M = 12.22$ ,  $SD = 2.54$ ) and fairly evenly distributed across the typical school levels of elementary (39%), middle (32%), and high school (30%) years. Parent reports indicated that participants had been homeschooling an average of 59% of their educational careers and had relatively little experience of traditional classroom schooling. More specifically, a majority of the sample (54%) attended traditional schools less than 10% of their educational careers; a small minority (14%), however, had spent over 80% of their experience in traditional schooling.

### *Measure: The Academic Self-Regulation Questionnaire (SRQ-A)*

The Academic Self-Regulation Questionnaire (SRQ-A) is a widely used 32-item questionnaire designed to measure motivation in elementary and middle school students (Ryan & Connell, 1989). It has also been validated for use with high school and college populations with very minor adaptations (Vansteenkiste, Sierens, Soenens, Luyckz, & Lens, 2009; Vansteenkiste, Zhou, Lens, & Soenens, 2005). The scale is organized as a series of questions about why students do certain academic activities (e.g., answering hard questions in class), each with a set of possible reasons based on the SDT continuum of self-regulation: external regulation, introjected regulation, identified regulation, and intrinsic motivation. For example, reasons that could indicate the extent to which students answer hard questions in class include “Because that’s what I’m supposed to do” (external regulation), “Because I feel ashamed of myself when I don’t try” (introjected regulation),



“Because it’s important to me to try to answer hard questions in class” (identified regulation), and “Because I enjoy answering hard questions” (intrinsic motivation). The reasons for doing each activity were presented in random order. Each was followed by a 4-point Likert-type scale with the following options: Not at all true, Not very true, Sort of true, and Very true. We made minor adaptations of language to fit the context of these schools and omitted items regarding doing homework because they were likely to be irrelevant for this population. Consequently, students were asked to complete only 24 of the original 32 SRQ-A items. Because three students (2 from RC, 1 from DS) were not taking any classes at the time, they only completed a single 8-item section of this measure. Excluding their data did not change any of the results obtained so it was included in the analyses reported below. Items for each subscale were averaged together to form composite variables representing external regulation ( $\alpha = .79$ ), introjected regulation ( $\alpha = .83$ ), identified regulation ( $\alpha = .69$ , minus one item), and intrinsic motivation ( $\alpha = .74$ ), all of which were reasonably internally consistent in the present sample.

### *Procedure*

Parents were invited to participate through letters sent by the executive director of their respective schools and solicitation by the first author in person at the school sites. At the time of consent, parents provided a detailed account of their children’s schooling history. Students were then free to complete the survey online. Most did so on a computer at the school site while the first author was available in the vicinity to answer questions, but some completed it elsewhere by entering a URL provided to them after their parents had given permission. The survey included the SRQ-A described above as well as other items unrelated to the present study.

## Results

### *Preliminary Analyses*

Preliminary analyses were conducted to determine whether students’ responses on the SRQ-A varied by gender and school site. A series of t-tests confirmed that there were no differences between males ( $n = 33$ ) and females ( $n = 24$ ) on any of the four subscales of the SRQ-A (i.e. external, introjected, identified, intrinsic), all  $t(55) < 0.36$ , ns. There were, however, differences by school site for two of the subscales: introjected regulation,  $t(55) = -1.84$ ,  $p < .05$ , with the DS higher ( $M = 2.98$ ,  $SD = .60$ ) than the RC ( $M = 2.53$ ,  $SD = .66$ ) sample, and external regulation,  $t(55) = -1.77$ ,  $p < .05$ , with the DS higher ( $M = 2.32$ ,  $SD = .56$ ) than the RC ( $M = 1.91$ ,  $SD = .61$ ) sample. Overall, then, students in the DS responded higher on controlled forms of motivation than those in the RC. Because of this, results for these two subscales are each presented twice: as a whole sample and with the smaller DS sample removed.

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Ryan and Connell (1989) refer to a quasi-simplex pattern that should occur in the SRQ-A data indicating graded relations between the subscales. All subscales should be most strongly and positively related to those subscales that are nearby on the posited continuum. For example, intrinsic motivation should be most positively correlated with identified regulation, less so with introjected regulation, and less so with external regulation. As shown by the correlation matrix in Table 1, the expected quasi-simplex pattern emerged in the present sample.

Table 1  
Descriptive Statistics and Correlation Matrix of SRQ-A Subscales and Age

			SRQ-A			
	<i>M</i>	<i>SD</i>	EX	IJ	ID	IM
External Regulation (EX)	1.97	.62	-			
Introjected Regulation (IJ)	2.59	.67	.67***	-		
Identified Regulation (ID)	3.30	.58	.41**	.53***	-	
Intrinsic Motivation (IM)	3.29	.58	-.01	.01	.35**	-
Age ( <i>n</i> = 57)	12.22	2.54	-.20	.02	.04	.02
Age without DS ( <i>n</i> = 49)	12.27	2.66	-.24†	.03	.05	.03

† $p < .10$ , \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

### Hypothesis Testing

In order to address the hypotheses regarding age-related differences in motivation, we first examined scatterplots of each SRQ-A subscale by age for patterns of non-linearity. Because no such patterns were detected, we calculated a correlation coefficient between age and each of the subscales of the SRQ-A, as reported in Table 1. Consistent with the central hypothesis of the study, there was no correlation between age and intrinsic motivation ( $r = .02$ , ns). In contrast to the robust age-related decline in intrinsic motivation among students attending traditional schools, then, students in the present sample appeared able to maintain

levels of intrinsic motivation across the school years. By contrast, there was a small, non-significant negative correlation between age and external regulation when the whole dataset ( $n = 57$ ) was considered ( $r = -.20$ ,  $p = .13$ ); the strength of this correlation increased to suggest a trend ( $r = -.24$ ,  $p = .09$ ) when the smaller sample ( $n = 49$ ) without DS participants was used. There were no correlations between age and introjected regulation with either dataset ( $r_s < .03$ , ns), nor between age and identified regulation ( $r = .04$ , ns).

## Discussion

Students in the present study evidenced an age-related pattern of motivation distinct from that reported in the mainstream literature of traditional classrooms. Rather than the robust negative correlation between age and intrinsic motivation found in contexts of mandatory instruction (e.g., Bouffard et al., 2003; Corpus et al., 2009; Gottfried et al., 2001; Harter, 1981; Hunter & Csikszentmihalyi, 2003; Lepper et al., 2005; Otis et al., 2005; Pintrich, 2003; Prawat et al., 1979; Wigfield et al., 1998), students attending educational alternatives appeared to maintain initially high levels of intrinsic motivation, experiencing no such age-related decline. We assume this ability to maintain intrinsic motivation is driven—at least in part—by the supports for autonomy, competence, and relatedness provided by these homeschooling and democratic schooling contexts, but this mechanism must be tested explicitly in future research. This finding is supported by recent work on Israeli democratic schools showing maintenance from fifth to eighth grades in students' mastery goals and engagement in the domain of science (Vedder-Weiss & Fortus, 2011).

The present findings also differed from those of Apostoleris (2000), who found a positive correlation between age and intrinsic motivation in a sample of homeschooling children. Two possible explanations for this difference are considered. The first relates to the “hybrid” characteristics of the two schools chosen for the present study. Apostoleris’ participants were presumably “pure” homeschooling families, in the sense that they were not reported to be connected to a resource center or any other organization associated with the provision of instruction. Both schools considered in the present study were organized to provide instruction, though only after students expressed a desire to receive it. Having an organizational context for the provision of instruction may necessarily engender some compromise that affects intrinsic motivation in a negative fashion. Thus, the pure homeschool context of Apostoleris’ research may maximize the opportunities for intrinsic motivation to develop, leading to a positive correlation with age. The home school resource center model and the democratic education model of the present study may give children and youth learning opportunities that may not be available through pure homeschooling, but, at the cost of their ability to enhance intrinsic motivation.

Another explanation for the positive correlation between age and intrinsic motivation found by Apostoleris (2000) is that the effect was an artifact of the measurement instrument. Recall that Apostoleris used Harter's (1981) scale, which requires students to select either an intrinsic or an extrinsic reason for each of their academic behaviors, thus forcing a negative correlation between the two constructs. Given this instrument, it is possible that Apostoleris' data were driven by an age-related decrease in extrinsic motivation rather than an age-related increase in intrinsic motivation. This interpretation is supported by the trend in the present study of a negative correlation between age and external regulation. These data very tentatively suggest that there may be an age-related decrease for children in contexts of non-mandatory instruction to perform academic behaviours simply because they are supposed to do so.

The present study represents an important first step in understanding age-related patterns of motivation in alternative educational contexts, but it has a number of notable limitations. Perhaps the most significant is that the cross-sectional design presumes that the patterns observed across children of different ages reflect the patterns that will occur within individual children as they grow older. A longitudinal study is needed to determine if this assumption holds true. Moreover, the sample was inevitably subject to some degree of self-selection bias. It is possible that the school organizations are not the causal element in the motivational patterns observed, but rather there may be characteristics of the students themselves or how they ended up in these schools that cause the patterns observed. Indeed, the motivational patterns of the present study are likely a function of the person in context, consistent with numerous theories that recognize motivation as situated and contextualized (see, e.g., Brophy, 2010; Deci & Ryan, 2002; Paris & Turner, 1994; Urdan, 1999)

This study was also limited by a relatively small sample size, especially in the DS population. Because the age-related findings were similar both with and without the DS sample, we do not believe that it skewed the results. That said, it cannot be inferred that the patterns reported here are necessarily true in DS settings because of the sample size. Our data are suggestive, not conclusive, and should be evaluated against future studies with larger sample sizes that can be evaluated for representativeness. Because the observed correlation between age and intrinsic motivation so closely approximated zero, however, it seems unlikely that a larger sample would drastically alter the pattern of findings with regard to the primary hypothesis. Nonetheless it is important to consider why rates of participation were relatively low, especially for a study that took place in a school setting. These alternative environments do not have an implicit, pervasive expectation of participation in activities presented by adults, whereas that may be the case in most traditional schools. Future researchers should consider using a similar online survey platform but opening up to the broader population that could be recruited via the

internet. Both the home and democratic school movements have robust social networks that would likely be supportive of a research initiative that wanted to extend and elaborate on the current findings.

### **Conclusion**

Unlocking students' ability to share their inherent enthusiasm for learning whenever they are in the classroom may not be a matter of finding the right instructional key but rather the right organizational key. Research data has supported the general concern of renowned critics regarding the negative motivational consequences of traditional classrooms. The two substantial alternatives examined in the present study now have a small amount of data that supports their contention that better motivational consequences can be created. While there is clearly not enough data to make any claims regarding the efficacy of non-mandatory instruction per se, there is enough evidence in the literature to make the tentative claim that Self-Determination Theory is an empirically respectable framework that can and should be used to guide future research and innovation in schools. The potential benefits of these two forms of instructional organizations should be investigated further using the SDT framework to discover what mechanisms are at work to produce the motivational differences that seem to be found there.

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