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ABSTRACT

Towards a Refined Insight in the Shifts in Adolescents' Motivational Profiles:

A 4-year Longitudinal Study in Middle and High School

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Adolescents differ in the amount of motivation they display for their school work, with some of them putting considerable effort and others keeping their effort-expenditure to a minimum. Apart from students' level of motivation, also their type of motivation matters, as their motives can be rather controlled or pressured in nature, such as meeting external demands (i.e., external regulation) or bolstering one's ego (i.e., introjected regulation) or rather autonomous or volitional in nature, such as when students perceive the learning materials to be personally relevant (i.e., identified regulation) or inherently interesting (i.e., intrinsic motivation). Rather unfortunately, an increasing number of studies have shown that the more adaptive forms of motivation are less prevalent among older age groups, suggesting that there is steadily decline in children's motivation across primary and secondary. Nevertheless, some of these studies are limited because of the use of a cross-sectional research design and including only a limited number of motivational subtypes. In the present study, we sought to shed a more refined light on these longitudinal shifts in a group of 463 adolescents ($M_{\text{age_time1}} = 13.37$, $SD_{\text{age_time1}} = 3.06$; 58.96 % females), thereby identifying mean-level differences in motivational subtypes and examining whether and in what sense specific motivational profiles shift across the four-year period. Performing Latent Profile Analysis, five different profiles yielded the best fit (the lowest BIC) at each wave. In terms of profile changes, cross-tabulating the shifts within every pair of waves indicated that adolescents in the good quality motivation profile had the least chance to shift towards the extremely low quantity motivation profile and vice versa. In addition, students in the good quality group only jumped to adjacent profiles (poor quality and high quantity group). Most of the variation was found for the low quantity group. In terms of profile stability, most students in the high quantitative profile remained stable over time. As the process on this study is still running, more advanced analyses will be performed at the time of the conference.

EXTENDED SUMMARY

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Adolescents differ in the amount of motivation they display for their school work, with some of them being highly motivated and putting considerable effort and others being strategically oriented, thereby keeping their effort-expenditure to a minimum. Apart from students' level of motivation, also their type of motivation matters, as reflected in the type of reasons they have for doing their best at school. As maintained within Self-Determination Theory (Ryan & Deci, 2000; Vansteenkiste, Lens, & Deci, 2006), these motives can be rather controlled or pressured in nature, such as meeting external demands (i.e., external regulation) or bolstering one's ego (i.e., introjected regulation) or rather autonomous or volitional in nature, such as when students perceive the learning materials to be personally relevant (i.e., identified regulation) or inherently interesting (i.e., intrinsic motivation). These different types of motivation are said to fall along a continuum of increasing internalization and ownership, with amotivation and external regulation representing the least and intrinsic motivation the most mature form of self-determined functioning.

The predictive role of students' quality and quantity of motivation has been demonstrated in dozens of studies among middle and high school students, with autonomous motivation relating to a myriad of desirable outcomes, including engagement, self-regulated learning, well-being and achievement, while controlled motivation and especially amotivation predict various dysfunctional outcomes, including procrastination, test anxiety, cheating and drop-out (e.g., Vallerand et al., 1997). Rather unfortunately, an increasing number of studies have shown that the more adaptive forms of motivation are less prevalent among older age groups, suggesting that there is steadily decline in children's motivation across primary and secondary school (e.g., Gottfried, Fleming, & Gottfried, 2001; Lepper et al., 2005). Although these studies are informative, at least some of them are limited because of the use of a cross-sectional research design (e.g., Lepper et al., 2005), thus preventing one from shedding light on real longitudinal shifts in students' motivation. Also, because several of them only included a limited number of motivational subtypes, in the present study we sought to shed a more

refined light on these longitudinal shifts by assessing all motivational subtypes (i.e., amotivation, external, introjected, identified, and intrinsic).

Apart from identifying mean-level differences vs. stability in these motivational dimensions, we also adopted a person-centered perspective, thereby seeking to identify how different motivational dimensions cluster together, thereby producing a specific motivational profile (Ratelle et al., 2007; Vansteenkiste et al., 2009) and examining whether and in what sense these motivational profiles shift across the four-year period (see Hayenga & Henderlong-Corpus, 2010). The identification of a parsimonious number of profiles and their evolution across time is critical from both an applied and theoretical perspective. That is, these different types of motivation do not occur in isolation in reality, but they are simultaneously present within every student, yet to different degrees. As such, such profiles carry high ecological validity, being well-aligned with daily reality. Further, from a theoretical perspective, it remains to be explored which shifts in motivational profiles may occur. As far as the different subtypes on the internalization continuum are interpreted as different ‘stages’ of a developmental sequence, one may argue that profiles characterized by controlled motivation may move into profiles characterized by more autonomous forms of motivation (‘stepping stone’ hypothesis). Yet, from the SDT-perspective, these different subtypes do not reflect separate stages students need to cycle through and being initially controlled motivated may even hamper one to shift towards profiles characterized by autonomous motivation over time (SDT-hypothesis).

The current study comprised 463 adolescents ($M_{\text{age_time1}} = 13.37$, $SD_{\text{age_time1}} = 3.06$; 58.96 % females), which were followed during four consecutive years (i.e., from Grade 8 through Grade 11). Their study motivation was assessed with Academic Regulation Questionnaire (Ryan & Connell, 1989; Vansteenkiste et al., 2009). Reliabilities were satisfactory for the different subtypes across the different waves, with the internal consistencies varying between .72 and .91, with an average of .85.

In terms of mean-level differences (see table 1 for descriptive statistics and one sample t-tests), a Repeated-Measures ANOVA indicated that there is a significant interaction between motivation and time, indicating a different change over time across different types of motivation (table 2). More advanced analyses will be performed.

Motivational profiles were estimated at every wave through Latent Profile Analysis. Five profiles yielded the best fit (the lowest BIC) at each wave, which were largely in line with previous studies (e.g., Vansteenkiste et al., 2009). Specifically, a ‘low quantity motivation’ profile (characterized by low levels across all types of motivation), an ‘extremely low quantity motivation’ profile (characterized by high levels of amotivation), a ‘poor quality motivation’ profile (characterized by high levels of amotivation and external regulation and low levels of identified and intrinsic regulation), a ‘high quantity motivation’ profile (characterized by high levels across all types of motivation) and a ‘good quality motivation’ profile (characterized by high levels of identified and intrinsic regulation).

were identified. Cross-tabulating the shifts within every pair of waves indicated that on average 33% of students' profile membership remained stable, a percentage that was fairly similar across every comparison of consecutive years (Table 2). In terms of profile changes, it could be noticed that participants in both the most extreme groups (the extremely low quality and the good quality profiles) have the lowest chance of shifting towards each other. More specifically, students with an extremely low quality profile only shifted in 1.4% of the cases towards the good quality group across time, while students in this latter group only shifted in 1.7% of the cases towards the extremely low quality group. This was also found for the high quantity group with only 4.3% of the participants shifting towards the extremely low quality group. In this high quantitative motivation profile, most students (53.8%) remained stable over time. In the low quantity group, we can notice more variation with only 30.5% of the students being stable across time while the remaining 69.5% shift to other groups with comparable percentages. The same amount of variation was also found in the good quality group with only 26.3% of the students remaining stable across all waves and 28.8% of the students jumping in the poor quality group and 33.8% jumping into the high quantity group. Both latter groups can be approached as adjacent groups as they contain no high levels of amotivation or external regulation. The poor quality group seems to be the least stable with students shifting from one profile to another.

As the process on this study is still running, more advanced analyses will be performed at the time of the conference.

Tables

Table 1.

Descriptive statistics (Mean with (Standard Deviation) for motivation types across waves.

Intrinsic	Identified	Introjection	External	Amotivation
Wave 1				
2.24 (.88)	3.50 (.89)	2.85 (.93)	2.93 (.76)	1.75 (.81)
Wave 2				
2.24 (.84)	3.41 (.86)	2.77 (.94)	2.98 (.88)	1.81 (.97)
Wave 3				
2.35 (2.35)	3.41 (.85)	2.86 (.88)	2.91 (.79)	1.82 (.85)
Wave 4				
2.38 (.87)	3.40 (.84)	2.83 (.89)	2.87 (.84)	1.76 (.90)

Note. One sample t-tests per wave revealed all different motivational types to be significantly different (all $p < .001$).

Table 2.

Results of Repeated Measures ANOVA with motivation (5 types) and time (4 occasions).

	F	p	η^2
Time	.25	.858	.00
Motivation	238.24	.000	.84
Time * Motivation	2.39	.007	.14

Table 3.

Longitudinal Variation and Stability in Latent Profile Membership on average across all waves.

Average percentages					
Wave 2 – Wave 4					
Wave 1	1	2	3	4	5
1. Low quantity	30.53 (21.72)	13.13 (13.46)	19.27 (18.41)	11.97 (17.54)	25.0 (8.21)
2. Extremely low quality	24.13 (11.09)	47.03 (22.84)	6.07 (10.51)	1.4 (2.42)	21.4 (14.58)
3. Poor quality	20.1 (25.15)	2.3 (3.98)	8.8 (8.84)	30.6 (24.94)	38.17 (9.70)
4. Good quality	9.47 (12.11)	1.73 (1.50)	28.77 (18.54)	26.27 (22.56)	33.77 (29.31)
5. High quantity	17.37 (6.95)	4.33 (1.72)	13.03 (8.89)	11.5 (10.11)	53.77 (7.7)