



Longitudinal changes in academic motivation in Japan: Self-determination theory and East Asian cultures



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ABSTRACT

This study examined changes in the academic motivation of Japanese junior high school students through a two-year longitudinal survey, based on self-determination theory. Japanese students ($N = 410$; 215 boys and 195 girls aged 12–13 years at the time of the first survey) completed the Japanese short-version of the Self-Regulation Questionnaire once each year during three consecutive grades (seventh, eighth, and ninth). The results of a latent curve model indicated that intrinsic and identified regulation (i.e., autonomous motivation) decreased and extrinsic and introjected regulation (i.e., controlled motivation) increased during junior high school. The results of ANOVA revealed the specific period during which academic motivation changed. In addition, a growth mixture model detected two characteristic profiles concerning motivational change: some students showed only decreases in autonomous motivation and others showed only increases in controlled motivation. Japanese junior high school students' motivation shifted from autonomous to controlled, but they did not become less motivated overall.

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1. Introduction

For more than thirty years, educational psychologists have shown great interest in the processes and outcomes associated with intrinsic motivation and extrinsic motivation in classrooms. In previous research, intrinsic motivation for academic activities has been associated with better grades (Lepper, Corpus, & Iyengar, 2005) and predictive of achievement and adjustment (Gottfried, Marcoulides, Gottfried, & Oliver, 2013). In contrast, extrinsic motivation has been predictive of more negative consequences, and in general is found in students from late elementary to high-school years, becoming more highly correlated with negative educational outcomes over time (Murayama, Pekrun, Lichtenfeld, & vom Hofe, 2013).

During the same period, investigators have also examined changes in students' academic motivation over the period from mid-elementary to high school; however, they have not yet reached a conclusion, particularly concerning changes in extrinsic motivation. In this study, we introduced perspectives from self-determination theory and cultural views on this issue to organize the previous results and investigated motivational changes in Japanese junior high school students. This

was the first study regarding this topic in a sample from an East Asian Culture based on self-determination theory and will contribute to providing a comprehensive perspective on motivational changes of school-aged students.

1.1. Motivational changes in academic activities

The consensus among researchers focusing on changes in academic motivation is that intrinsic motivation decreases in the long-term. In a longitudinal study, Gottfried, Fleming, and Gottfried (2001) found a significant downward trend in intrinsic motivation for reading, math, and science between the ages of 9 and 16 years. Gottfried, Marcoulides, Gottfried, Oliver, and Guerin (2007) found that intrinsic motivation for math decreased in students aged 9 to 17 years. In a within-year study for students in third to eighth grade, Corpus, McClintic-Gilbert, and Hayenga (2009) found that intrinsic motivation decreased from fall to spring and that this decline was particularly pronounced in adolescents.

Meanwhile, the findings regarding changes in extrinsic motivation are inconsistent. In a cross-sectional study, Harter (1981) found an increase in extrinsic motivation from third through ninth grade, with a corresponding decrease in extrinsic motivation. However, because of the nature of the scale that she used, with an intrinsic and an extrinsic pole, as students decrease in one they increase in the other. In contrast, Lepper et al. (2005), who used a scale where intrinsic and extrinsic motivation are measured independently, reported that extrinsic motivation did not vary between the fourth and eighth grades. One possible reason why investigators have not reached consensus is because of

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the use of an undifferentiated version of the level of extrinsic motivation, which is defined as performing an activity to obtain some separable consequence. However, as described latter, the concept of extrinsic motivation within self-determination theory has been differentiated by using the idea of self-determinant degree of one's behavior (Deci & Ryan, 1985; Ryan & Deci, 2000).

1.2. Motivation in self-determination theory

Self-determination theory posits several subtypes of motivation, and proposes that extrinsic motivation pertains to a wide variety of reasons for behavior. The first type of extrinsic motivation is *external regulation*, which involves the least autonomous form of motivation and includes the classic instance of being motivated to obtain a reward or avoid punishment. Generally, external regulation is in evidence when people's reasons for performing a behavior are to satisfy an external demand or a socially constructed contingency. The second type of extrinsic motivation is *introjected regulation*, in which behaviors are performed to avoid guilt and shame or to achieve ego enhancement and feelings of worth. According to self-determination theory, external and introjected regulation constitute controlled motivation, because they have an external perceived locus of causality and are accompanied by the experience of pressure and obligation (i.e., feelings of being controlled; Ryan & Deci, 2009; Vansteenkiste, Lens, & Deci, 2006). The third type of extrinsic motivation is *identified regulation*, which represents conscious valuation of a behavioral goal and acceptance of the behavior as personally important. Relative to external and introjected regulation, behavior that stems from identified regulation tends to be more self-determined. In addition, *intrinsic regulation* is autonomous, corresponding to intrinsic motivation on the regulation style; therefore, identified and intrinsic regulation constitute autonomous motivation because they have an internal perceived locus of causality and are accompanied by a sense of self-determination (Ryan & Deci, 2009; Vansteenkiste et al., 2006). Previous research has provided evidence for a relationship between autonomous motivation and achievement (d'Ailly, 2003; Hardre & Reeve, 2003), deep levels of learning strategies (Vansteenkiste, Simons, Lens, Sheldon, & Deci, 2004), and psychological well-being (Levesque, Zuehlke, Stanek, & Ryan, 2004). From a person-centered perspective, students with motivational profiles involving high autonomous motivation and low controlled motivation have shown low levels of test anxiety, procrastination, and cheating, and high grade point average (Vansteenkiste, Sierens, Soenens, Luyckx, & Lens, 2009).

One longitudinal study examining changes in academic motivation based on self-determination theory was conducted by Otis, Grouzet, and Pelletier (2005) and involved a Canadian sample from the eighth to tenth grade. They reported that all types of motivation decreased over this period, suggesting that students became less motivated as they aged. Because different studies have found different patterns for extrinsic motivation, there is a need for additional investigation; however, before conducting an investigation, we should consider cultural differences (specifically Western vs. East Asian cultures) in motivational aspects that have attracted the attention of cross-cultural psychologists.

1.3. Motivation and culture

Culture influences dominant societal belief systems, educational practices, and desired behaviors (e.g., Greenfield, Keller, Fuligni, & Maynard, 2003; Kim & Park, 2008), and individuals implicitly learn appropriate ways of adapting to social contexts (Hofer & Bond, 2008). Consequently, cultural influences affect several aspects such as motivation (Iyengar & Lepper, 1999) and achievement beliefs (Chen & Stevenson, 1995).

When comparing the results of research conducted in different countries and cultures, the construal of the self in individualist and collectivist paradigms is a useful concept in the interpretation of findings. Markus and Kitayama (1991) suggested independent (individualism)

and interdependent (collectivism) self-construals. Independent self-construals emphasize the validation of internal attributes and separation from social contexts. This is assumed to be exemplified in sizable segments of American and many Western European cultures. In contrast, interdependent self-construals focus on connecting with the social setting, engaging in appropriate actions that are desired by others in society, and maintaining harmony within social circumstances. This is assumed to be exemplified in Japanese and other East Asian cultures (Markus & Kitayama, 1991). With respect to motivational factors, individuals with independent self-construals are motivated to express themselves and focus on personal success, while individuals with interdependent self-construals are motivated to promote goals that are shared with others in social contexts (Kitayama, Markus, Matsumoto, & Norasakkunkit, 1997; Markus & Kitayama, 1991). Considerable research has supported differences between Western cultures with individualistic cultural views and East Asian cultures with more collectivist views (e.g., Hagger, Rentzelas, & Chatzisarantis, 2014). In particular, persons with East Asian cultural views were more autonomously motivated when they felt a sense of relatedness and shared their goals in social contexts (e.g., Bao & Lam, 2008; Rudy et al., 2015).

1.4. The objectives of the present study

As a further investigation based on self-determination theory, the present study examined longitudinal changes in academic motivation in Japanese junior high school students (a sample from an East Asian culture). The hypothesis was that Japanese junior high school students' academic motivation would change from autonomous to controlled; and they would not become less motivated because of the high societal pressure in Japan, the shared common goal among students to move on to high school, and the motivational tendency of individuals in East Asian cultures to be motivated by social demands and norms. Hess and Azuma (1991) compared the Japanese and American educational systems and found that Japanese students felt significantly greater pressure to study due to social demands. Additionally, the Organization for Economic Cooperation and Development (OECD, 2011) introduced the concept of Japan as a meritocratic society that attaches importance to entrance examinations for social success, motivating students to learn in difficult classes and demanding substantial effort to obtain high grades. Moreover, because approximately 95% of junior high school students have progressed to high school (Japan Ministry of Education, Culture, Sports, Science and Technology, 2015), most students in Japan share the goal of passing high school examinations. As previously mentioned, in East Asian cultures with more collectivist values, there is greater emphasis on students behaving in accordance with others.

This study had two additional objectives. The first was to examine the profile of motivational shifts. Most previous studies have discussed average tendencies toward motivational changes from a statistical basis. However, some characteristic motivational shifts exist within average tendencies when focusing on individual differences in motivational changes (Harter, Whitesell, & Kowalski, 1992). The second additional objective was to examine the temporal stability of motivation. This would provide an overall picture of changes in academic motivation across ages and perspectives of educational interventions.

2. Method

2.1. Participants and procedure

This study was a two-year longitudinal design, conducted between 2007 and 2009, that consisted of three waves. Each questionnaire survey was completed during October and November for three consecutive years. Questionnaires were administered in a classroom under the instruction of the homeroom teacher. In total, 410 junior high school students (212 boys and 198 girls) from five public schools in the Kanto region (Tokyo and surrounding area) participated in the survey. The

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