THE ROLE OF BASIC PSYCHOLOGICAL NEEDS AND INTRINSIC MOTIVATION IN EXPLAINING STUDENTS' GOAL ORIENTATION

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Abstract

Individuals' motivation and behavior in educational settings is explained by many theories, among which are self-determination and achievement goal theory. Studies show that satisfaction of the three basic psychological needs proposed by the self-determination theory fosters high quality motivation such as intrinsic motivation, which is associated with higher tendencies to increase one's competence without seeking to avoid difficult academic tasks. Because goal orientations, mastery approach and mastery avoidance goal, refer to different intentions or causes for a person's pursuit in an achievement situation, they result in different patterns of cognition, affect and behavior. Mastery approach goals are associated with a range of adaptive outcomes, one of them being high intrinsic motivation. On the other hand, mastery-avoidance goals are associated with a range of negative outcomes, one of them being low intrinsic motivation. Therefore, this research was conducted to examine the relationship between three basic psychological needs in educational context (autonomy, competence and relatedness) and goal orientations as well as the role of intrinsic motivation in this relationship. As a part of a larger study, 247 3rd year students of the Preschool Education Studies at The Faculty of Teacher Education of the University of Zagreb were examined using scales developed for the purpose of the study. The results show that 13.8% of mastery avoidant goal orientation can be explained by the basic psychological needs (autonomy and competence), but intrinsic motivation does not make additional contribution to the explanation of this goal orientation. In explaining mastery approach goal orientation, basic psychological needs (competence only) explain 3.8% of the variance, with intrinsic motivation explaining additional 12.7% in hierarchical regression analysis.

***Keywords*:** *basic psychological needs, intrinsic motivation, achievement goal orientation*

Introduction

Achievement goal theory provides a framework for understanding students' goals and motivation emphasizing various purposes or reasons that a student might have in following his particular academic tasks (Pintrich, 2000). Achievement goal theorists have proposed a 2x2 achievement goal framework, in which students can adopt mastery-approach goals (i.e., aiming to develop competence and learn), mastery-avoidance goals (i.e., aiming to avoid not mastering a task), performance-approach goals (i.e., aiming to show others they are competent) or performance-avoidance goals (i.e., aiming to avoid looking incompetent to others) when pursuing academic tasks (Elliot & Church, 1997). The original mastery-avoidance construct was ignored over time, which led to a trichotomous achievement goal framework, so the current trend in the achievement goal literature is to examine the initially ignored mastery-avoidance construct. Students with mastery-avoidance goals are seen as tending to avoid not mastering a task or tending to avoid not learning all there is to learn (Elliot & Murayma, 2008). This orientation is positively related to negative emotions such as anxiety and worry, negatively related to intrinsic motivation (Cury, Elliot, Fonseca & Moller, 2006), and it predicts non-optimal performance on different types of exams (Elliot & McGregor, 2001). On the other hand, students who adopt mastery approach orientation have aims of developing competence. They focus on learning, understanding, developing skills, and mastering information. Mastery-approach goals indicate an intention of personal development and growth that guides achievement–related behavior and task-engagement. It is associated with positive outcomes such as self-efficacy, persistence, preference for challenges, self-regulated learning, and positive affect and well-being. Mastery approach orientation predicts interest and intrinsic motivation (Cury et al., 2006). Much of the research in achievement goal theory has focused on the emotional and achievement outcomes linked to a student's adopted goal orientation (Kaplan, Middleton, Urdan & Midgley, 2002). However, much less studies explain why students enter a classroom with particular achievement goal. Elliot and Church (1997) have shown that the motive dispositions of fear of failure and need for achievement underlie avoidance and approach goal adoption. Previous studies have examined school transitions, peer relationships, classroom activities, concrete performance feedbacks or teacher practices in order to predict goal orientations, but another possible explanation of the reasons for adopting particular achievement goal could also be provided by the Self-determination theory (SDT) (Deci & Ryan, 2000).

Self-determination theory is a macro theory of human motivation which includes such basic issues as personality development, self-regulation, universal psychological needs, life goals and aspirations, the relations of culture to motivation, and the influence of social environments on motivation, affect, behavior and well-being. Most studies within the SDT are done in applied fields such as sports, education and health (Deci & Ryan, 2008).

Many theories of motivation focus on individual differences in the strength of one or more psychological needs, for example, the need for achievement, for intimacy or for control. These needs are learned and some people develop stronger needs than others. Conversely, the SDT claims that the need for competence, relatedness and autonomy are basic and universal. Therefore, the focus on individual differences within the theory is not on the varying strength of the needs but instead on the concepts resulting from degree to which the needs have been satisfied or not (Deci & Ryan, 2008). The need for autonomy refers to a person wanting to feel control and ownership over his/her behaviors, the need for competence refers to the

feeling of efficacy and the need for relatedness relates to feelings of closeness and connectedness with others (Deci & Ryan, 1990). The SDT makes a distinction between intrinsic and extrinsic motivation. Intrinsic motivation includes the enjoyment of the activity and is related to increased effort, learning, achievement and persistence. According to the SDT, degree to which people experience satisfaction of innate psychological needs of autonomy, competence and relatedness influences their ability to internalize what they are doing (Deci & Ryan, 2000). When people enter a new situation with these needs fulfilled, they are more likely to fully engage with the challenges within that context, that is, to experience intrinsic motivation (Deci & Ryan, 2000). In other words, intrinsic motivation in people results from their basic psychological needs being met.

Deci and Ryan (2000) have shown that both achievement goal theory and the SDT are very useful in explaining student motivation and success in academic contexts. Moreover, these theories complement each other - achievement goal theorists can better understand the dynamic antecedents and later modifiers of achievement goals by taking the SDT's concepts into account, while self-determination theorists can get more insight into how broad precursor states (degree of need satisfaction in life) give rise to broad motivational orientations (i.e. intrinsic or extrinsic motivation) which are then organized as more specific goals within a particular life domain or context (Elliot & Church, 1997). Therefore, we wanted to examine the relationship between three basic psychological needs in educational context (autonomy, competence and relatedness) and goal orientations, as well as the role of intrinsic motivation in their relationship.

Research questions

1. Can the two achievement goal orientations (mastery approach and mastery avoidance) be predicted on the basis of satisfied needs for autonomy, competence and relatedness in educational context?
2. What is the role of intrinsic motivation in explaining the relationship between basic psychological needs and the two achievement goal orientations?

Method

Participants. 247 3rd year students of the Preschool Education Studies at The Faculty of Teacher Education, University of Zagreb, participated in the study. Participants' gender was not accessed, but gender structure of the Preschool Education Studies in Croatia is approximately 90% or above female. The average academic success of the participants (on a scale from 1 "insufficient" to 5 "excellent") was 3.94 (SD=0.671).

Measures. All scales used were developed for the purpose of the study.

Mastery approach and mastery avoidant goal orientations were both assessed by 3 items, on which participants' estimated their orientation towards studying on a 5-point Likert scale ranging from 1 "strongly disagree" to 5 "strongly agree". An overall result for each scale was obtained by summing the responses to the three relevant items.

Scale measuring basic need satisfaction in educational context was adapted on the basis of other domain specific scales of need satisfaction (Deci & Ryan, 2000). The participants' task was to estimate how each of 20 statements relates to them as students, on a 5-point Likert

scale ranging from 1 “strongly disagree” to 5 “strongly agree”. Three subscale scores were formed by summing the results on the relevant items: autonomy (7 items), competence (5 items) and relatedness (8 items).

Intrinsic motivation (or intrinsic goal orientation) was measured using one of the six motivation scales adapted from Pintrich & DeGroot’s (1990) Motivated Strategies for Learning Questionnaire (MSLQ). It consisted of 4 items on which responses were made on a 5-point Likert scale ranging from 1 “strongly disagree” to 5 “strongly agree”. An overall result is obtained by averaging the responses to all four items.

Procedure. All scales were administered in a paper-pencil form and filled-in in a group classroom setting as a part of a larger study (within the project *Methods and models in the education of preschool children*).

Results and Discussion

Descriptive statistics presented in *Table 1* show that the study participants on average used much more mastery approach learning orientation than mastery avoidance, though the relative variability of mastery avoidance orientation was much higher (CV = 41.54% vs. 14.29% for mastery approach).
Satisfaction of all three basic psychological needs was on average in the upper half of the possible interval, and the average intrinsic motivation of participants in the study was also rather high.

Table 1 Descriptive statistics

	min	max	M	SD
Goal orientation				
mastery approach	3	15	13,10	1,873
mastery avoidance	3	15	6,54	2,716
Basic psychological needs				
autonomy	14	35	25,79	3,902
relatedness	19	40	33,25	4,945
competence	10	25	20,53	2,926
Instrinsic motivation	1,5	5	3,86	0,676

As can be seen from *Table 2*, the criterion variables had mainly low correlations with the observed predictors, but most of these correlations were statistically significant and in expected direction. Mastery approach goal orientation had the highest positive correlation with intrinsic motivation ($r=0.403$, $p<0.01$). Correlations with autonomy and competence were positive and low but still statistically significant, while the correlation with relatedness was non-significant. Mastery avoidance had a highest correlation (negative) with autonomy ($r=-0.323$, $p<0.01$), and the correlation with relatedness was also the only non-significant correlation with this criterion variable.

Because predictor intercorrelations were also significant, and in some cases higher than those between predictors and criterion variables, possible issues of multicolinearity were checked by calculating two indicators of multicolinearity: tolerance indicators and VIF (variance inflation factors). Both indicators were acceptable, with tolerance larger than 0.20 and all VIF measures smaller than both 10 (Kline, 2005) and 4 (O'Brien, 2007) for all the variables used, which suggested there was no problem with multicolinearity in the study.

Table 2 Correlations between all measured variables

	mastery avoidance	autonomy	relatedness	competence	intrinsic motivation
mastery approach	-0,042	0,140*	0,112	0,205**	0,403**
mastery avoidance	1	-0,323**	-0,092	-0,253**	-0,158*
autonomy		1	0,291**	0,428**	0,176**
relatedness			1	0,594**	0,137*
competence				1	0,167**

* p<0,05

**p<0,01

Both criterion variables, as well as all three basic psychological needs, were significantly correlated with intrinsic motivation, as expected. Because experiences of autonomy and competence (relatedness also, but with a more distal role) are essential for intrinsic motivation, as implicated by Deci and Ryan (2000), and intrinsic motivation is expected to be important for a person to adopt a mastery-avoidant or mastery-approaching goal orientation (Cury et al., 2006), we wanted to examine the implicated mediational role of intrinsic motivation. However, not all assumptions for mediational analysis were met (some steps in estimating mediational effect by conducting several multiple regressions, following Baron and Kenny's (1986) proposed procedure, were non-significant). Therefore, in order to answer our research questions, we conducted two separate hierarchical regression analyses.

The results show that 13.8% of mastery avoidant goal orientation can be explained by the basic psychological needs (autonomy and competence), but intrinsic motivation does not make additional contribution to the explanation of this goal orientation. Not having a sense of control over their studying process, and without a sense of efficacy or a need for competence being met, students are more likely to engage in mastery avoidant goal orientation, worrying about not being able to learn and master everything the study program requires from them.
In explaining mastery approach goal orientation, basic psychological needs (competence only) explain 3.8% of the variance, with intrinsic motivation explaining additional 12.7% in the second step of the hierarchical regression analysis. It seems that for student's orientation to developing competence and gaining knowledge while studying, having an intrinsic motivation (participating in a task for reasons such as challenge and curiosity) is more important than having the three basic psychological needs met.

Table 3 Hierarchical regression analysis

	mastery approach		mastery avoidance	
	ΔR^2	β	ΔR^2	β
Step 1				
Basic psychological needs	0,038*		0,138**	
autonomy				-0,265**
relatedness				
competence		0,167*		-0,213**
Step 2				
Instrinsic motivation	0,127**	0,365**	0,005	

* p<0,05

**p<0,01

Conclusion, suggestion and recommendations

In order to predict goal orientations, which explain intentions or causes for a student's pursuit in an achievement situation, resulting in different patterns of cognition, affect and behavior (positive if optimal goal orientations are adopted and negative if are not), we tested the hypotheses that the satisfaction of the three basic psychological needs (for autonomy, competence and relatedness) may be the reason for adopting particular achievement goal. Our results indicated that not having a need for autonomy and competence met explains 13.8% of adopting mastery avoidance goal orientation, indicating that it is important to develop context of autonomy and competence support during study period in order to increase the probability of students not adopting this non-optimal goal orientation. On the other hand, only satisfaction of the need for competence in the educational context explains the mastery approach goal orientation adoption, but with only 3.8%. Intrinsic motivation is more important for this goal orientation, making a student's participation in the task an end all to itself. However, this relationship, although expected and reasonable, may partly stem from conceptual similarity of these two constructs, so it should be further explored and explained.

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