

**EÖTVÖS LORÁND UNIVERSITY OF SCIENCES  
FACULTY OF EDUCATION AND PSYCHOLOGY**

**DOCTORAL PROGRAMME IN PSYCHOLOGY**

Head of programme: Prof. Dr. Oláh Attila C.Sc

***Socialization and Social Processes Programme***

Head of programme: Prof. Dr. Hunyady György MHAS

**PHD DISSERTATION**

**SUMMARY**

**PAJOR GABRIELLA**

**ACHIEVEMENT MOTIVATION IN ADOLESCENCE**

**WITHIN THE FRAMEWORK OF ACHIEVEMENT GOAL THEORY**

supervisor: Dr. N. Kollár Katalin PhD

2013

## 1 INTRODUCTION

Students' relationship with school learning has always been diverse in terms of motivation. Some of them moderately enjoy classroom activities and learning, while others are keen on doing the work. Some do what they are required to do, others work just to avoid punishment. For some students learning, seeking knowledge is a part of their norms and values, and they enjoy school work, even if not every moment of it. There are students who are motivated by competition. They do not only want to learn, but they are eager to show in grades, results what they have achieved, and wish to stand out. Some student are afraid of failure, they learn to avoid bad grades, dropping.

Why does one student want to learn, the other does not? Why is efficiency important for one, and is not for another? What role do teachers and classmates play in this complex system of achievement motivation?

The first and most important task is to understand the nature of achievement motivation. Students differ in their motives, goals, efforts, beliefs of learning and knowledge, persistence, in their attitude to success, failure, and learning, therefore it is a complicated task to create a proper theoretical framework on the field of achievement motivation. Through understanding students' motives to achieve we can help making education more effective. The purpose of our dissertation was the following: to gather useful information about the nature of achievement motivation that may serve as a starting point of a long-term scientific research in order to make learning in schools more adaptive.

In order to start the research a theoretical base was needed, which was sophisticated enough, its concepts were clearly defined, and grabbed the essence of the nature of achievement motivation. Achievement Goal Theory satisfies these criteria. Another reason why Achievement Goal Theory was a good choice is its impact on studies concerning achievement motivation in mainstream research. Therefore using it as a theoretical framework we are able to compare our results with international results. This last aspect is significant, because we believe that the nature of achievement motivation can only be understood within the social context. Student' achievement motivation is evidently influenced by the micro context—family, teachers, classmates, the climate and ethos of the school—, but also the macro context can be determinative: society's beliefs and notions about achievement, its attitude to learning, and the characteristics of its educational system.

## 2 THE AIMS OF THE RESEARCH

The main goal of our series of research was to put Achievement Goal Theory (Elliot, A. J., Church, M. A., 1997) to empirical test. The theory is the main paradigm of mainstream researches in the field of achievement motivation, therefore makes it possible to join the mainstream with our results. We started to investigate the achievement goal structure of Hungarian adolescents in 2008.

Three studies, built on each other, were conducted, our dissertation is a detailed documentation of these studies. In the pilot study the main aim was to test the legibility of the

2x2 achievement goal framework on a sample of Hungarian secondary school students, and to test the validity and reliability of a self-constructed achievement motivation questionnaire. Besides studying *achievement goals*, we started the investigation of the connection between goals and *attribution of success and failure*, based on the theory of Bernard Weiner (1979). We have also studied the relationship between goals and *reactions to failure*, *attitude to school and learning*, and also *academic performance*. The main study, conducted in 2011, was supplemented by the investigation of the relationship between goals and a new variable, namely *social support*. Figure 1. illustrates the system of studied variables.



**Figure 1.**  
**The system of studied variables**

### 3 THEORETICAL BACKGROUND: ACHIEVEMENT GOAL THEORY

In order to understand the presently prevailing Achievement Goal Theory (Elliot, A. J., Church, M. A., 1997) we need to look back on the 80s, when the first theory of achievement goals was introduced. Dweck and Leggett (1988) as a starting point of the social-cognitive model of achievement motivation identified two key patterns of student behavior, critical in terms of achievement. These two patterns theorize the experience that two students with similar abilities show different performance in challenging situations. Challenge is defined by the authors as a situation where the student has to perform after failure. Helpless students react to these situations with anxiety, low performance, lack of motivation. On the other hand, mastery oriented students react to these situations with intrinsic motivation and high performance. The authors asked why students with similar abilities perform in different ways when the outcome is uncertain. The key to the answer to their question was the notion of goals that give a frame to interpret situations and reactions to them. Two types of goals were

identified in achievement situations in schools. One is the performance goal, in case of which the goal is to get a positive judgment of one's performance. The other is the mastery/learning goal, in case of which the goal is to improve one's abilities.

The next step in building up the theory was to answer, why people set different goals in the same situation. Dweck and Leggett (1988) found the key to the answer to this question in the different implicit theories of ability. According to the entity theory of ability, ability is stable, unchangeable, according to the incremental theory, it is alterable, improvable. The authors presume that in achievement situations helpless students set goals to prove their abilities, because they think abilities cannot be improved. In contrast, mastery oriented students set learning goals to improve their abilities, because they think abilities are improvable. What happens in achievement situations? In the case of performance goals the underlying question is this: "do I have the ability to be successful?" In case of success there is no problem, the student considers him- or herself successful. In case of failure, the diagnosis is low ability. In the case of mastery goals the underlying questions are these: "how can I most effectively solve the problem? How can I improve my abilities?" The explanation of a failure is not enough or not proper effort, strategy. Dweck and Leggett presume that different theories of ability and goal settings lead to different outcomes in achievement situations. Entity theory and performance goals were presumed to be related to maladaptive outcomes, for example lack of persistence, low performance, low level of intrinsic motivation, especially after failure. Incremental theory and mastery goals were presumed to be related to adaptive outcomes, such as high persistence, high performance, intrinsic motivation even in situations of failure.

Studies concerning achievement goals lead to controversial results, since performance goals had not clearly predicted maladaptive, and mastery goals adaptive outcomes (see Elliot, E. S., Dweck, C. S., 1988, Stipek, D. , Gralinski, J. H., 1996). The biggest controversy concerned performance goals, results indicated a need to modify the social-cognitive model. The theory could not explain the positive effects of performance goals, explored by many studies, especially the correlation between academic performance and performance goals (Cury et al, 2006). Therefore, in 1997 Elliot and Church introduced the hierarchical model of approach and avoidance achievement motivation.

Experts on Achievement Goal Theory, both theoretical and empirical, considered both performance and mastery goals as appetitive forms of motivation. Elliot and Church (1997) pointed out that this is in contrast with classic theories of achievement motivation (eg. Atkinson, McClelland, Murray), which emphasize that performance in an achievement situation can be aimed to approach success and to avoid failure as well. According to Atkinson's theory of achievement motivation (1993), motives can be classified in two groups: One group of motives are aimed at maximizing certain contentment, they can be characterized by a tendency of approach. The other group of motives is aimed at minimizing pain, avoiding the negative consequences. In terms of achievement the motif to reach success is called achievement motivation, the other is the motif to avoid failure. Elliot and Church, combining the classic theories of achievement motivation with the social-cognitive model, introduced and distinguished the notions of performance-approach, and performance-avoidance goals. The new model is based on the idea that goals are manifestations of the more abstract motives, since the authors consider achievement goals cognitive-dynamic manifestations of

two competence-related motives (motives of achievement and of failure avoidance). According to the new model achievement motives do not directly influence outcomes, but indirectly, through achievement goals.

Elaborating on the hierarchical model, Elliot and Church (1997) developed the revised paradigm of achievement goals, the *2x2 Achievement Goal Theory*. Based on the revised model (Elliot and Murayama, 2008, Cury et al, 2006) with two dimensions four achievement goals can be identified. The performance-mastery dimension, that is the definition dimension, represents how one defines competence. In case of performance goals, competence is evaluated relative to a normative standard, that is, how one performs compared to others. In case of mastery goals, competence is evaluated relative to an intrapersonal standard, so the person focuses on learning, and development, rather than others. The valence dimension of competence is the base of the approach-avoidance dimension, so competence may be valenced in terms of whether it is focused on a positive possibility to approach, or a negative possibility to avoid. In case of approach goals the aim is a positive outcome (success), so the individual considers himself to be competent when the problem is solved, or he performs better than the others. In case of avoidance goals the aim is avoiding a negative outcome (failure), so the individual considers himself to be competent when he does not make any mistakes, does not fall behind, or does not perform worse than the others. Therefore the 2x2 paradigm includes four types of achievement goals (table 1): mastery-approach (focused on attaining task-based or intrapersonal competence), performance-approach (focused on attaining normative competence), mastery-avoidance (focused on avoiding task-based or intrapersonal incompetence), performance-avoidance (focused on avoiding normative incompetence).

	APPROACH	AVOIDANCE
MASTERY	<ul style="list-style-type: none"> <li>- The goal is to master a task, to learn, to understand, to develop</li> <li>- <i>Intrapersonal standards</i>: to reach the self-set goals</li> </ul>	<ul style="list-style-type: none"> <li>- The goal is to avoid not mastering a task, not understanding something</li> <li>- <i>Intrapersonal standards</i>: to avoid not reaching the self-set goals</li> </ul>
PERFORMANCE	<ul style="list-style-type: none"> <li>- The goal is to outperform others</li> <li>- <i>normative standards</i>: better grades than others, better performance than others</li> </ul>	<ul style="list-style-type: none"> <li>- The goal is not to be outperformed by others</li> <li>- <i>normative standards</i>: not worse grades than others, not worse performance than others</li> </ul>

**Table 1.**  
**Interpretation of achievement goals in the 2x2 Achievement Goal Theory**

## 4 PARTICIPANTS

A total of 2003 secondary school students participated in the three studies (pilot study: 531, main study: 1076, follow-up study: 396). Most students were enrolled in 10th and 11th grades. We looked up schools that belonged to the mainstream of public education, considered to be conventional both structurally and in terms of their curriculum. Conventional structure was defined by having traditional classes and having 4, 6, or 8 grades. Conventional curriculum was defined by curricula based on the Hungarian National Base Curriculum, so the chosen schools were not alternative or reform schools in any ways.

## 5 MEASURES

1. Achievement Goal Questionnaire: three different Achievement Goal Questionnaires were used during the studies, all of which were self-constructed based on the literature. Their detailed description is part of the dissertation.
2. Goodenow Classroom Belonging and Social Support Scale (Zétényi, 2002)
3. Success-Failure Attribution Questionnaire: self-constructed, based on Weiner's attribution theory (1979).
4. Two items measuring attitude to learning and school
5. Four items measuring reactions to failure

## 6 AIMS AND HYPOTHESES OF THE PILOT STUDY

In the pilot study our most important aim was to investigate whether the goal structure of the 2x2 Achievement Goal Theory (Elliot and Church, 1997) was identifiable on a sample of Hungarian adolescents.

*HYPOTHESIS: The Achievement Goal Questionnaire is a valid and reliable instrument to measure achievement motivation in educational settings. With its use the four types of achievement goals can be measured: mastery-approach, performance-approach, mastery-avoidance, and performance-avoidance.*

## 7 DISCUSSION OF THE RESULTS OF THE PILOT STUDY

The Achievement Goal Questionnaire, based on the 2x2 Achievement Goal Theory (Elliot and Church, 1997) to measure achievement motivation, was found valid and reliable, but our hypothesis has to be rejected. Factoranalysis confirmed the four-factor structure, but the content of the factors is different from goals defined by the 2x2 model. The following achievement goals emerged on our sample: performance goals, mastery-approach goals, mastery-avoidance goals, and a fourth type that we called outcome goals (the follow-up study focuses on this type of goals).

The most important difference between the structure and functioning of the Hungarian secondary school students and of those presented in the mainstream studies is that performance-approach and performance avoidance-goals cannot be separated on a

phenomenological level, therefore, it is useless to define the two goals as separate constructs. If we neglect the importance of the approach-avoidance dimension in case of performance goals, then our study may seem to support the perspective that it is useless to make a difference between the two types of performance goals, because they obstruct adaptive functioning in school anyway. With respect to academic efficiency, our results prove that the more a student can be characterized by performance goals, the lower grade average he or she produces. With respect to attribution, our strongest result is that the more a student can be characterized by performance goals, the more he or she attributes his or her failure to weak abilities.

During the main phase of our series of studies we chose to further investigate the dilemmas emerged in the literature and as results of the pilot study. As a first step modification of the Achievement Goal Questionnaire were conducted. The modifications, which took two directions, focused on performance goals. First of all, restricted by the rules of Hungarian, we made efforts to word the items of the questionnaire so that they indicated goals, not emotions (Elliot and Murayama, 2008). We achieved this zeal least in the case of mastery-avoidance goals. Secondly, with respect to some items, the reference to grades was exchanged by reference to performance, based on Elliott and Murayama's suggestions in order to conform to a narrow definition of the 2x2 paradigm. This narrow definition states that performance goals are about comparing one's competence to others, and not about reaching the highest grades, points. This meant that the notion and factor of outcome goals was put aside but not rejected in the main study. The main reason to do so was our pursuit to compare our result with the mainstream of studies in the field of achievement goals. Our attempt to integrate outcome goals in the model was realized in the follow-up study.

## 8 AIMS AND HYPOTHESES OF THE MAIN STUDY

Taking the results of the pilot study into consideration, the second phase of the research was started in autumn in 2011. Two main changes were executed. First of all, a new variable was added to the ones—achievement goals, attributions of success and failure, reactions to and expectations after failure, attitude to school and learning—already investigated: the impact of social support on achievement motivation. Secondly, modifications of the measures were carried out.

**HYPOTHESIS 1:** *Achievement goals of Hungarian adolescents display a unique structure. Instead of the four types of achievement goals defined by the 2x2 Achievement Goal Theory, three types can be identified: mastery-approach, mastery-avoidance, performance goals. Our hypothesis is supported, besides our pilot study, by Elliot and Murayama (2008), who have noted that empirical studies often record high correlations between performance-approach and performance-avoidance goals.*

**HYPOTHESIS 2:** We expect performance-approach and performance-avoidance goals to merge into one construct, therefore performance goals will not predict academic performance, because avoidance goals show a negative relationship with academic performance based on the mainstream literature. Based on the Multiple Goal Perspective we expect the best

academic performance from students characterized by a high level of mastery-approach goals and a low level of performance goals.

HYPOTHESIS 3: Performance goals can be characterized by attributing success to external causes (eg. luck), failure to internal, uncontrollable causes (eg. ability). Mastery-approach and mastery avoidance goals can be characterized by an adaptive pattern of attribution: attributing success and failure to internal, controllable causes, to efforts on the first place.

HYPOTHESIS 4: Mastery-approach goals are related to maintained motivation and perseverance, performance approach goals are related to decreased motivation and lack of perseverance.

HYPOTHESIS 5: Mastery goals are related to positive attitude to learning, since in their case competence is evaluated based on acquired knowledge. *Attitude to school in case of performance goals is determined by the perceived level of social support. Therefore in case of performance goals, those students like going to school better who are supported by their teachers and classmates. Social support does not play an important role in case of mastery goals, because knowledge and personal development is the key to motivation and achievement. The schools taking part in the research definitely consider learning as an important value.*

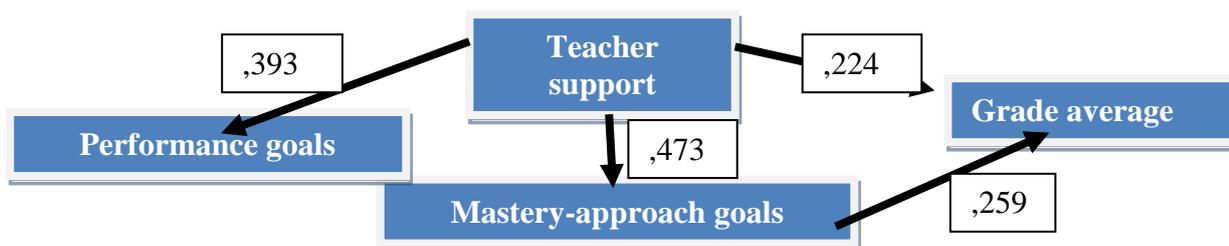
HYPOTHESIS 6: Among the factors of social support, teacher support has the strongest relationship to, and is the best predictor of achievement goals. *Classroom belonging and peer support are weaker predictors of goals.*

HYPOTHESIS 7: Teacher support is strongly related to academic achievement, therefore students with high level of performance goals and high level of teacher support perform better than those with low level of teacher support.

## 9 DISCUSSION OF THE RESULTS OF THE MAIN STUDY

One of the main questions of the main study was how the structure of achievement goals changed by the modification of the Achievement Goal Questionnaire, which meant the removal of the items related to striving for good grades. Our first hypothesis was supported by the factor analysis, three goals were identified on the sample of adolescents: performance, mastery-approach, mastery-avoidance goals. The results of the pilot study were reinforced in terms of the categories of achievement goals: performance-approach and performance-avoidance goals cannot be considered as separate constructs.

With respect to academic performance, the most important result is that mastery-approach goals predict grade average, the effect of performance goals is minimal, what is more it disappears when the model is supplemented by the factors of teacher support. The following connections were found between academic performance, achievement goals and social support, based on analyses of regression:



Results of correlations indicate the most apparently that achievement goals influence academic performance together not independently. It is true for all three goal orientations—even mastery-avoidance—that students getting high points on the scales perform better than students low on the scales. This means that any type of a goal is better than not having a goal. When we compared combined groups of achievement motivation, already the number of students belonging to the groups showed that goals “move” together: if a student gets high scores on one scale, then he or she gets high scores on the other two as well. There are only a few students in the sample who are high on one scale and low on the other two. Students reaching high scores on all three perform better than students reaching low scores on all three scales. Analyses of regression imply that it is mastery-approach goal orientation that determines academic performance, getting high scores on this scale predicts good grades.

The three types of goals show different patterns of attribution of success and failure, although the correlations between them are weak. It is only mastery-approach goal orientation that has almost strong correlation with attributing success to efforts, which supports our hypothesis 3, which predicted that mastery-approach goals were related to attributing success to internal, controllable causes. On the contrary, mastery-avoidance goals show a significant, although weak correlation to attributing failure to internal causes. With respect to learning it is very important that we found a negative correlation between mastery-approach goals and attributing success to luck, and attributing failure to task difficulty (external, uncontrollable cause).

Correlations between performance goal orientation and attribution are significant but weak. Still, only performance goals are correlated with attributing success to ability. Results of t-tests prove that basically motivated and unmotivated students differ, and the biggest winners and losers are high and mastery-approach students. High mastery-avoidance students are most likely to attribute failure to weak ability, while low mastery-avoidance students are least likely to attribute failure to weak ability.

Reactions to failure, attitude to school and learning also support the results so far that the pattern of most adaptive behaviour is related to mastery-approach goals. This type of goal orientation is related to maintained motivation, which means that students who strive to learn, to develop are able to make efforts after an unsuccessful exam, unsolved problem. Mastery-approach goal orientation predicts attitude to learning and school, although t-tests show, that highly motivated and slightly motivated students differ in the strength of their attitude, and the losers are again low mastery-approach students (they like learning and school the least). There is an interaction between performance goals and teacher support in connection with attitude to school. There is no difference between high and low performance goal orientation if the

perceived teacher support is low. However, if the perceived teacher support is high, then highly performance goal oriented students like going to school significantly better. Teacher support plays a stronger role in attitude to school in case of performance goals rather than mastery goals. Teacher support is the only factor of social support that has a marked influence on all goal orientations, which means that the teachers' attention, positive feedback, acknowledgement enhances achievement motivation.

## 9.1 THE 3D ACIEVEMENT GOAL PARADIGM, OR THE REVISION OF THE ACIEVEMENT GOAL THEORY

After the pilot study, oriented by Elliot and Murayama (2008), we decided to put aside the notion *outcome goals*, in case of which the goal is to get good grades, or high points. But this did not only mean the reduction of the theoretical framework, but—comparing results of the pilot study and the main study—the power of goals to predict academic performance decreased. While in the pilot study, the four types of goals could explain 24% of the variance of grade average, the three types of goals in the main study could explain 16% of the variance of grade average. Therefore we lost information by narrowing the definition of achievement goals. That is why we decided to broaden again the achievement goal framework, so by creating the 3D Achievement Goal Theory (table 2) a new type of goal orientation—**outcome goal orientation**—was added to the paradigm of 2x2 Achievement Goal Theory. The original conception was changed so that besides defining competence along normative and intrapersonal standards, absolute standards were added to the definition. Namely:

- In case of performance-approach goals the goal is normative competence (outperform others),
- In case of mastery-approach goals the goal is intrapersonal competence (getting knowledge, advancing relative to personal standards),
- In case of performance-avoidance goals the goal is avoiding normative incompetence (not to be outperformed by others),
- In case of mastery-avoidance goals the goal is avoiding intrapersonal incompetence (avoiding not understanding something, not advancing, making mistakes relative to personal standards),
- In case of outcome-approach goals the goal is competence defined by absolute standards (getting good grades, high scores, high percentages on tests),
- In case of outcome-approach goals the goal is competence defined by absolute standards (getting good grades, high scores, high percentages on tests),
- In case of outcome-avoidance goals the goal is avoiding incompetence defined by absolute standards (not getting bad grades, low scores, low percentages on tests),

The 3D theory is new not only in terms complementing the types of goals, but its name indicates that achievement goals are to be interpreted in relationship to each other, not independently of each other, so individuals can be characterized by a pattern of achievement goals. Therefore all types of goals play a role in one's life, but not to the same extent. In practice this means that we can only understand a students' achievement motivation if we identify the achievement goals structure characteristic of him or her.

	APPROACH	AVOIDANCE
MASTERY	- The goal is to master a task, to understand an idea, to advance, to learn	- The goal is to avoid misunderstanding, to avoid making mistakes
	- <i>intrapersonal standards</i> : one's own level of achievement, knowledge	
PERFORMANCE	- the goal is to outperform others	- the goal is to avoid being outperformed by others
	- <i>normative standards</i> : others' performance	
OUTCOME	- the goal is a good grade, high scores, high percentage on tests	- the goal is avoiding bad grades, low scores, low percentage on tests
	- <i>absolute standards</i> : scores, grades, percentages	

**Table 3.**  
**Goal constructs of 3D Achievement Goal Theory**

## 10 AIMS AND HYPOTHESES OF THE FOLLOW-UP STUDY

The main aim of the follow-up study was to prove the validity of the 3D Achievement Goal Theory.

**HYPOTHESIS 1:** *The framework of achievement goals can be extended by a third dimension of goals. Besides performance goals and mastery goals outcome goals can be identified, in case of which competence is defined by absolute standards. The three dimensions of goals are measurable by the 3x2 Achievement Goal Questionnaire.*

**HYPOTHESIS 2:** *Although the 3x2 Achievement Goal Questionnaire was designed to measure six types of achievement goals, based on our former studies we expect to identify five types in case of Hungarian secondary school students: mastery-approach, mastery-avoidance, performance, outcome-approach and outcome-avoidance goals.*

## 11 DISCUSSION OF THE RESULTS OF THE FOLLOW-UP STUDY

The most important aim of the follow-up study was testing the validity of the 3D Achievement Goal Theory, and the reliability of 3x2 Achievement Goal Questionnaire. Factor analysis supported our hypothesis that it is adequate to complement the framework of goals with a third dimension of goals. Outcome goals make up separate factor, but approach and avoidance items merge into one type of goal. Therefore our second hypothesis has to be rejected, because Hungarian adolescents' achievement motivation can be interpreted along four types of achievement goals: mastery-approach, mastery-avoidance, performance, and outcome goals. Mastery-avoidance items of the questionnaire do not work as a scale, because only two items construe the factor, therefore, we were unable to examine its relationship with other variables. Yet, we consider mastery-avoidance goal orientation as a separate goal construct of the 3D paradigm of achievement goals.

Concerning the framework, one important question is how mastery-approach goals and outcome goals differ. Our results show that they correlate strongly, and also show similarities in their attribution pattern. With respect to attribution and reactions to failure, students with high and low levels of mastery-approach and outcome goals show almost exactly the same averages. These results are important in many ways. If we go back to the original idea of goals, Dweck and Leggett (1988) assumed that mastery goals ensure students such a system of motivation that leads to the most adaptive functioning at school, and in learning, because success can only be achieved by striving to broaden one's knowledge, to understand deeply the material. In fact from an educational point of view, the theory suggested that teachers' best interest is to arouse the desire to know, the desire to advance, and to decrease external motives in learning. Students should not want to be better than others, they should not strive for grades, points, or percentages. But is it possible to separate these motives at school? Based on our study, the answer is definitely negative. The motivation to learn goes hand in hand with the motivation to achieve good grades, high percentages. In our sample (N=396) there was not one person characterized by a low level of mastery-approach goal orientation and a high level of outcome goal orientation, and there were only 7 student with a high level of mastery-approach goal orientation and a low level of outcome goal orientation. At the same time 55 students show high levels of mastery-approach and outcome goals at the same time, 47 students low levels of mastery-approach and outcome goals at the same time. Students with high on both perform significantly better than those with high on only one.

Investigating goals and academic performance, analyses of regression explored that the 3D model can explain the relationship between them better than the 2x2 model. This result supports the assumption that outcome goals have an important place in the framework of goals, otherwise useful information—both quantitative and qualitative—is lost. The results of the main study led to the conclusion that with respect to both academic achievement and attribution of success and failure, mastery-approach goals orientation is the most adaptive. Therefore the best way of motivating is make students focus on their own development and on broadening their knowledge. Results of the follow-up study suggest that although in many ways performance goal orientation is the least adaptive form of motivation, such external incentives as grades, points can result in adaptive functioning.

The results of the follow-up study confirm the results of the main study in showing that performance goals are connected to a pattern of attribution which may predict underachievement. Whitley and Frieze (1985) relying on a meta-analysis of independent studies, reached the conclusion that successful students attribute responsibility to ability and efforts, while less successful students are more likely to attribute responsibility to difficulty of task, which is also a characteristic of performance goal orientation. Moreover, less successful students are more likely to attribute failure to uncontrollable reasons, and this is why performance oriented students in the Hungarian sample can be identical with what Dweck and Leggett (1988) called “helpless” students. Following this chain of thoughts, helpless students set goals to prove their abilities, for the reason that they consider abilities to be uncontrollable and stable. Also, performance goals show a relationship with the expectation of further failures after an unsuccessful task, and with decreased motivation to learn. On the contrary, mastery-approach and outcome goals are related to increased efforts and belief in success even after failure. We believe that the next stage of studies should be investigating the relationship between implicit theories of abilities and of achievement goals.

## 12 CONCLUSIONS

The most important aim of our series of studies was the empirical testing of the 2x2 Achievement Goal Theory (Elliot and Church, 1997), and to join and catch up with the mainstream of the field of achievement motivation. We hope to open a new field of studies in Hungarian motivation research, and our perspective goal is to make use of the results for school practice.

### 12.1 STRUCTURE OF ACHIEVEMENT GOALS

The structure of achievement goals of Hungarian adolescents does not correspond to the four types of goals defined in the 2x2 Achievement Goal Theory. Factor analyses at different stages of the research confirmed that performance-approach and performance avoidance goals are not two separate constructs. Mastery-approach goals are definitely a separate type of goals, but mastery-avoidance goal orientation still needs confirmatory testing. The reason for this is that in the follow-up study, in contrast with the pilot and main studies, we were unable to create a scale, so could not obtain more information about the goal type. It is important to study mastery-avoidance goals further, because the mainstream literature mostly neglects this type of goal orientation, although Elliot and Murayama (2008) have proven it to be a separate construct.

In the 3D Achievement Goal Theory we proposed to include outcome goals into the framework of achievement goals, and our results supported the new model. Our research revealed that outcome goals, similarly to performance goals, are not separable into approach and avoidance types. Therefore Hungarian secondary school students' achievement motivation can be characterized within the following structure of goals:

TYPES OF GOAL ORIENTATIONS	DEFINITION
<b>PERFORMANCE</b>	students' competence is defined by the relative achievement compared to peers
<b>OUTCOME</b>	students' competence is defined by such objective indicators of achievement as grades, points, percentages
<b>MASTERY-APPROACH</b>	students' competence is defined by the acquired knowledge, by the perceived level of development
<b>MASTERY-AVOIDANCE</b>	students' competence is defined by the avoidance of failure, of improper or incomplete solution of tasks

We have proven that the above mentioned structure of goals is a system of goals in interaction. Results supporting the Multiple Goal Perspective (Barron and Harackiewicz, 2001) reveal that goals in interaction have an influence on student behaviour, and there are goals whose concurrent high level predicts the best grade average, which is the most important indicator of success in our educational system. The student with high levels of both

mastery-approach and outcome goals does better at school than those who are high on only either. Nevertheless, mastery-approach goal orientation *predicts* academic performance and attitude to school and learning, so if the student lacks the motif to advance, to acquire knowledge, then success becomes insecure, and depends more on external factors like teacher support or expectations.

The results—especially those that show the distribution of different combinations of achievement goals—convinced us that it is fruitless to study goals independent from each other and from the social context. Although mainstream literature revealed many connections between goals and other variables, in a different context—namely in Hungarian social-cultural-educational context—part of these results is uninterpretable. Moreover, it is impossible to categorize students into only one category of goal orientations because all goals influence behavior and thinking at the same time simultaneously but in a separate way. Each student can be characterized with a profile of achievement goals, which shows the extent to which each goal orientation characterizes him or her. After revealing how each achievement goals influence processes and outcome variables, the next step should be to investigate the joint influence of achievement goals.

Future research should address the question how different school contexts—schools with a strong emphasis on competition versus schools focusing on cooperation and individual ways of development; schools where the value of knowledge and learning is evident for all, versus schools where students consider them as unavoidable nuisance—create different goal structures. Our sample was made of high achiever students who consider learning and knowledge values, which limits the generalizability of our results, since the social environment expects these students to perform well, so their achievement motivation is strong in general. It is necessary to explore whether the goal structure of students with low levels of achievement motivation is different from what our research has revealed.

## 13 LITERATURE

- BARRON, K. E., HARRACKIEWICZ, J. M. (2001): Achievement goals and optimal motivation: testing multiple goal models. *Journal of Educational Psychology*, 80, 5. 706-722.
- CURY, F., ELLIOT, A. J., DA FONSECA, D., MOLLER, A. C. (2006): The social-cognitive model of achievement motivation and the 2x2 achievement goal framework. *Journal of Personality and Social Psychology*, 90, 4. 666-679.
- DWECK, C. S., LEGGETT, E. L. (1988): A social-cognitive approach to motivation and personality. *Psychological Review*, 95, 2. 256-273.
- ELLIOTT, E. S., DWECK, C. S. (1988): Goals: an approach to motivation and achievement. *Journal of Personality and Social Psychology*, 54, 1. 5-12.
- ELLIOT, A. J., CHURCH, M. A. (1997): A hierarchical model of approach and avoidance achievement motivation. *Journal of Personality and Social Psychology*, 72. 218-232.
- ELLIOT, A. J., MCGREGOR, H. A., GABLE, S. (1999): Achievement goals, study strategies, and exam performance: a mediational analysis. *Journal of Educational Psychology*, 91, 3. 549-563.
- ELLIOT, A. J., MURAYAMA, K. (2008): On the measurement of achievement goals: critique, illustration and application. *Journal of Educational Psychology*, 100, 3. 613-628.
- STIPEK, D., GRALINSKI, J. H. (1996): Children's beliefs about intelligence and school performance. *Journal of Educational Psychology*, 88, 3. 397-407.
- WEINER, B. (1979): A theory of motivation for some classroom experiences. *Journal of Educational Psychology*, 71, 1. 3-25.
- WHITLEY, B. E., FRIEZE, I. H. (1985): Children's causal attributions for success and failure in achievement settings: a meta analysis. *Journal of Educational Psychology*, 77, 5. 608-616.
- ZÉTÉNYI, Á. (2002): A tanulási eredményességet befolyásoló tényezők vizsgálata. PhD disszertáció. ELTE. Budapest.