Mastery or Performance Orientation: Russian Adaptation of the Approach to Instruction Scale (PALS) to Assess Classroom Goal Structures

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Abstract

The present study aims to examine the construct of the classroom goal structure. Achievement goal theory of motivation suggests that two types of classroom goal structures can be identified: mastery goal structure and performance goal structure.

The study presents the results of the Russian adaptation of the Approach to Instruction (Patterns of Adapted Learning Survey) scale which can be used to assess classroom goal structures from the perspective of teacher practices. The survey is built *on a data that* comes from a survey on a sample of fifth-grade teachers (N = 656) conducted in the fall of 2020. The study includes a description of the steps for adaptation of the scale into Russian. The study presents the results of confirmatory factor analysis and describes the adjustments to the initial model. The adapted scale demonstrated a good fit to the empirical data and adequate internal consistency.

The Russian-language version of the scale can be used by researchers in future studies of the educational environment in the classroom in the context of learning motivation. The scale could potentially be employed in future studies examining the factors that determine students' educational outcomes as well as the development of social-emotional skills.

Keywords

school, teacher practices, classroom goal structure, achievement goal theory, classroom goal structure, mastery orientation, performance orientation.

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Within the school curriculum, students are expected not only to achieve academic success but also to develop their social-emotional skills, such as their ability to be persistent, achieve identified goals, cooperate, and act with empathy and tolerance [OECD, 2021]. The school learning environment should enable students both to acquire the necessary academic knowledge and to develop social-emotional skills.

The achievement goal theory suggests that the educational environment can be characterised by its dominating achievement orientation: mastery goal orientation or performance goal orientation [Ames, 1992]. According to the achievement goal theory, those goal orientations determine the classroom goal structure [Ames, 1984; Meece, Anderman, Anderman, 2006; Bardach et al., 2019].

Teachers' instructional practices are one of the factors shaping the classroom goal structure [Stodolsky, Salk, Glaessner, 1991; Ames, 1992; Kaplan et al., 2002; Meece, Anderman, Anderman, 2006]. For instance, by displaying the work of the highest achieving students as an example, teachers promote the performance goal structure. Whereas by recognizing even the slightest progress of each student, teachers bring mastery goals to the forefront and promote the corresponding goal structure in the classroom. In addition to the above, the outlined instructional practices can also determine students' perception of the learning environment and subsequently influence their personal motivational beliefs about education [Ames, 1992; Urdan, Midgley, Anderman, 1998; Anderman et al., 2001; Friedel et al., 2007; Park et al., 2016; Lüftenegger et al., 2017; Fokkens-Bruinsma, van Rooij, Canrinus, 2020]. Motivational beliefs determine what value students attribute to their education, as well as the way they interpret their academic successes and failures [Anderman, Urdan, Roeser, 2003].

Studies demonstrate that the classroom goal structure correlates with students' emotional well-being [Baudoin, Galand, 2017; Johnson, Johnson, 2005], positive attitude towards school [Roeser, Midgley, Urdan, 1996], use of effective learning and self-regulation strategies [Wolters, 2004], self-efficacy [Murayama, Elliot, 2009], and growth mindset [Dweck, Leggett, 1988].

Even though the concept of classroom goal structure is highly significant for students' academic success and their personal development, research into it hasn't so far received the attention it deserves. Specifically, very few studies have explored this subject in Russia [Korotkevich, 2019; Maloshonok, Semenova, Terentyev, 2015; Nikitskaya, 2019]. In addition, most of those studies focus on the classroom goal structure from the students' perspective [Ames, Archer, 1998; Urdan, Midgley, Anderman, 1998; Patrick, Kaplan, Ryan, 2011; Skaalvik et al., 2017], and not on teachers' self-reports about their instructional practices.

The purpose of the present study is to adapt the tool for assessing the classroom goal structure from the perspective of teachers' instructional practices using a Russian sample.

1. Classroom goal structure: development and students' perception

Research into the classroom goal structure, as well as students' personal motivational beliefs, began in the 1980s. It was part of an effort to examine educational motivation and determine predictors of students' high academic achievement. Those studies led to the emergence of the achievement goal theory [Dweck, Leggett, 1988; Elliot, Harackiewicz, 1996], which studied different types of students' educational goals and the goal structure in the classroom [Ames, 1984; 1992].

The achievement goal theory initially identified two types of personal goals in education: mastery goals and performance goals [Dweck, 1986; Nicholls, 1989]. Those who pursue mastery goals aspire to ongoing academic improvement, which is accompanied by a positive perception of effort [Ames, Archer, 1988]. Students with a mastery goal orientation enjoy completing difficult tasks, even if they make many mistakes in the process. Performance goals make students gravitate towards demonstrating their superiority. They are linked with the desire to reach externally imposed standards of success with minimal effort, which would indirectly attest to their high competence [Elliott, Dweck, 1988]. A student with a pronounced performance goal orientation would enjoy being the only one in the class who can answer the teacher's question.

The dichotomous model of classroom goal structure is analogous to students' personal motivational beliefs. The model identifies mastery goal structure and performance goal structure [Ames, 1992; Urdan, Midgley, Anderman, 1998; Wolters, 2004].

The mastery goal structure in the classroom encourages students to work towards a deep understanding of learning material and continual improvement of their skills [Ames, 1992]. In such a learning environment, mistakes are perceived as part of the learning process and students are given creative assignments associated with effort [Urdan, Midgley, Anderman, 1998]. The performance goal structure, on the contrary, implies that the purpose of studying is showcasing one's skills in comparison to the other students' skills, and thus encourages social comparison [Ames, 1992; Urdan, Midgley, Anderman, 1998]. Teachers in classrooms with performance goal structures are inclined to emphasise the importance of competition, announce grades publicly, and group students based on their academic performance [Park et al., 2018].

The classroom goal structure can affect the personal achievement motivation of students. When students perceive their classroom goal structure as mastery-oriented, they begin to mainly

pursue mastery goals [Wolters, 2004; Lüftenegger et al., 2017; Fokkens-Bruinsma, van Rooij, Canrinus, 2020]. Conversely, an environment with a pronounced orientation towards social comparison makes students focus on demonstrating their competence [Ames, 1984]. Based on this evidence, researchers see classroom goal structure as a space for interventions aimed at shifting students' orientations towards more adaptive ones — that is, towards mastery goal development [Ames, 1992].

At the same time, researchers note that students' ideas about classroom goal structure are, for the most part, subjective [Ryan, Gheen, Midgley, 1998; Midgley, Anderman, Hicks, 1995; Ames 1992]. Their perception of the classroom goal structure is influenced by teachers' approach to instruction. Teachers communicate information about a classroom goal structure to students through grading and reward systems, as well as the types of assignments offered to students [Ames, 1992].

Teachers choose their instructional practices and methodological approaches based on their beliefs about the effectiveness of these practices [Ames, 1992]. Teachers who are oriented towards the mastery goal structure aspire to instil in students the value of making effort in the learning process and the importance of a deep understanding of the learning material. Teachers oriented towards performance goal structure often motivate their students through competitiveness and normative grading [Kaplan et al., 2002; Meece, Anderman, Anderman, 2006].

However, researchers note that the same teacher can employ various practices depending on students' academic performance [Ames, 1992] or their gender [Butler, 2012; Skipper, Leman, 2017; Fokkens-Bruinsma, van Rooij, Canrinus, 2020].

2. Measuring a classroom goal structure: approaches to instruction

Most studies on the achievement goal theory concentrate on students' personal orientations [Anderman, Patrick, 2012]. A number of tools for measuring students' personal goal orientations have been developed. Their use was validated on various samples in countries including the USA, Belgium, Austria, and the Netherlands [Midgley, Anderman, Hicks, 1995; Midgley et al., 1998; Middleton, Midgley, 1997; Ryan, Gheen, Midgley, 1998; Baudoin, Galand, 2017; Bardach et al., 2019; Fokkens-Bruinsma, van Rooij, Canrinus, 2020].

When it comes to classroom goal structure, the majority of existing studies evaluate it solely based on its perception by students [Throndsen, Turmo, 2013; Kamarova et al., 2017; Skaalvik et al., 2017; Baudoin, Galand, 2017]. However, researchers advise complementing data about the perceived classroom goal structure with teachers' self-reports of their instructional practices, as well as with classroom observations [Blumenfeld, 1992; Ryan, Gheen, Midgley, 1998].

This becomes possible with the Approach to Instruction scale, developed as part of the larger Patterns of Adapted Learning Survey (PALS) [Midgley et al., 2000]. The scale measures the dominant orientation of teachers' approach to instruction — whether it is aimed at developing a performance or mastery goal structure in the classroom. Even though the survey has undergone several changes, each revision has invariably included two scales: the Mastery Goal Orientation Scale, and the Performance Goal Orientation Scale [Midgley, Anderman, Hicks, 1995; Ryan, Gheen, Midgley, 1998; Midgley et al., 2000]. Items that are used to measure those orientations — especially on the Mastery Scale — vary across different authorial versions of the scale.

For instance, in the earliest edition of the survey, both the Mastery Goal Orientation Scale (Cronbach's alpha = 0.62) and the Performance Goal Orientation Scale (Cronbach's alpha = 0.73) contained seven items each [Midgley, Anderman, Hicks, 1995]. The items used in the scale of performance-focused instructional practices describe such approaches as comparing students based on their performance and encouraging those who do well — as will be the case in the following survey revisions, too. The items used in the scale of task-focused instructional practices include examples of encouraging 'academic courage' and mutual help between students.

In its later version, the Mastery Goal Orientation Scale contains six items (Cronbach's alpha = 0.78), while the Performance Goal Orientation Scale includes five items (Cronbach's alpha = 0.72). The Performance Goal Orientation Scale items describe an active comparison of students' skills. The Mastery Goal Orientation Scale items emphasise the importance of applied effort and the development of higher-order skills [Ryan, Gheen, Midgley, 1998].

2.1. Approach to Instruction (Patterns of Adaptive Learning Survey): current version of the survey

In its updated version, the Mastery Goal Orientation Scale contains four items (Cronbach's alpha = 0.69), while the Performance Goal Orientation Scale includes five items (Cronbach's alpha = 0.69) [Midgley et al., 2000]. All survey items are presented as personal statements. Participants are offered to evaluate their level of agreement with the statements on a five-point scale from 'Strongly disagree' to 'Strongly agree'.

The Mastery Approach to Instruction items describe three characteristics of the mastery goal structure: evaluating students' progress, providing them with an opportunity to choose assignments, and matching assignments to students' needs and skill levels. The Performance Approach to Instruction items describe such characteristics as comparing students according to their skill level and encouraging them to compete with each other. This survey was validated on a sample of 6th-grade maths teachers; the information about the sample size is not available [Midgley et al., 2000].

Studies of approaches to instruction within the framework of the achievement goal structure theory were conducted on American [Urdan, Midgley, Anderman, 1998; Wolters, Daugherty, 2007; Wolters, Fan, Daugherty, 2010; Park et al., 2016] and Norwegian samples [Throndsen, Turmo, 2013]. Researchers note that the original scale may have insufficient internal consistency, and believe that further modification is necessary [Wolters, Daugherty, 2007; Wolters, Fan, Daugherty, 2010]. For instance, they offer to leave out two items from the original scale, in order to have three items on the Mastery Approach to Instruction scale (Cronbach's alpha = 0.66) and four items on the Performance Approach to Instruction scale (Cronbach's alpha = 0.76) [Wolters, Daugherty, 2007]. The present study is based on the 2000 version of the Approach to Instruction (PALS) survey [Midgley et al., 2000].

3. Methodology

3.1. Adaptation of the Approach to Instruction (PALS) scale into the Russian language

The translation of the original survey from English into Russian was done by a professional translator with native proficiency in Russian. To avoid ambiguity in the interpretation of concepts and instructional practices, the researchers conducted four cognitive interviews with mathematics, history, Russian language, and literature teachers from rural and urban schools. The interviews exposed that two items from the original scale made participants experience difficulties in interpretation: 'I give special privileges to students who do the best work' and 'I display the work of the highest achieving students as an example'. Those items were left out of the survey. As a result, the scale included seven items, four on the Mastery Approach to Instruction scale and three on the Performance Approach to Instruction scale. This version of the scale is used for the survey and for examining the psychometric properties of the tool.

In order to adapt the scale, a survey of 5th-grade teachers was conducted. The teachers expressed their level of agreement with the statements on a six-point Likert-type scale from 'Strongly disagree' to 'Strongly agree' (Appendix 1).

3.2. Sample

The survey was administered in the autumn of 2020. The sample consisted of 656 fifth-grade teachers of mathematics and the Russian language from 372 schools situated in four regions of the Russian Federation.

4. Results

4.1. Factor structure of the survey

The structure of the survey was verified using confirmatory factor analysis (CFA). Following the original theoretical model, two factors were identified: Mastery Goal Orientation (4 indicators) and Performance Goal Orientation (3 indicators). However, the goodness-of-

fit statistics lay outside the acceptable range, which indicated poor fit of the original model — Model 1 (Table 1).

Table 1. **CFA Model Fit Indices**

Model	χ^2	df	χ^2/df	CFI	TLI	RMSEA	SRMR
1	111.849	13	8.5	0.903	0.843	0.110 [0. 092; 0.129]	0.079
2	54.413	12	4.5	0.958	0.927	0.075 [0.055; 0.096]	0.045

In order to transform Model 1, we used modification indices, which offer improvements based on empirical data. Specifically, we added residual correlation between two items: 'Students who get good grades are pointed out as an example to others' (4) and 'I help students understand how their performance compares to others' (6), which almost halved the Chi-square value of the model: the difference between the two Chi-square values equalled 54.4 (Table 1). The addition of correlation between these statements was justified by theoretical premises. Both statements illustrate an instructional practice that implies the creation of a competitive environment in the classroom and comparing students with each other [Kaplan et al., 2002].

The difference between the Chi-square values of the original model (Model 1) and the model with added residual correlation (Model 2) proved to be statistically significant (Table 2), which means that Model 2 has a better goodness of fit.

Table 2. **Chi-Square Comparison of CFA Models**

	Model 1	Model 2	Difference between models
Chi-square	111.8	54.43	57.4
Degrees of freedom	13	12	1
P-value			.000

The addition of the residual correlation changed the remaining indices of fit of Model 2, with the new values within the recommended range (Table 1). Thus, the factor structure of the theoretical model was confirmed by the data gathered from the survey of teachers in Russia. Table 3 presents the items' factor loadings obtained from the confirmatory factor analysis.

Table 3. **Confirmatory Factor Analysis Results (Factor Loadings of Items)**

	Model 1	Model 2
Mastery Goal Orientation Factor		
1. I give a wide range of assignments, matched to students' needs and skill level.	1.000	1.000
2. I make a special effort to recognize students' individual progress, even if they are below grade level.	0.892 (0.078)*	0.878 (0.075)
5. During class, I often provide several different activities so that students can choose among them.	1.098 (0.094)	1.084 (0.090)
7. I consider how much students have improved when I give them report card grades.	0.764 (0.072)	0.740 (0.069)
Performance Goal Orientation Factor		
3. I encourage students to compete with each other.	1.000	1.000
4. I point out those students who do well as a model for the other students.	1.867 (0.174)	0.601 (0.109)
6. I help students understand how their performance compares to others.	2.022 (0.195)	0.669 (0.115)

Note. Standard errors are given in parentheses.

4.1.1. Mastery Goal Orientation Factor

This factor, represented by four statements in the survey, reflects teachers' orientation towards creating the mastery goal structure in the classroom, and, as a result, developing a deeper understanding of the learning material by their students. High values of this factor indicate that a teacher aims to create an environment where students recognize the importance of effort in the learning process. Besides, such a teacher strives to give students assignments that are matched to students' interests and skill levels. Those teachers support the autonomy of their students and provide them with an opportunity to choose assignments they are interested in. Low values of this factor indicate that a teacher doesn't aim at creating an environment where students understand the value of education and where their engagement is key to the learning process.

4.1.2. Performance Goal Orientation Factor

This scale is made of three statements and reflects a teacher's orientation towards creating a performance goal structure in the classroom. Teachers with high scores on this scale are inclined to create classroom conditions that encourage social comparison, in which students can compare their achievements with those of their peers. Low values indicate that teachers are not likely to compare students with one another, and do not view competition as the main way to increase motivation.

4.2. Reliability assessment

The reliability of the scales was assessed using the Cronbach's alpha coefficient. Both scales demonstrated adequate reliability: the coefficient was 0.726 for the Mastery Goal Orientation Scale, and 0.713 for the Performance Goal Orientation Scale. In other words, items within each scale are related and measure the same single construct.

4.3. Application of the scales

The Russian adaptation of the Approach to Instruction (PALS) scale can be used to evaluate the classroom learning environment when studying educational motivation. The scale, together with the evaluation of students' perceptions of the classroom goal structure, can help to understand the motivational climate of a learning environment.

The potential application area for this scale is research into the factors of students' social-emotional skill development and the improvement of their academic achievements. In particular, the scale could help to identify the specific features of a learning environment conducive to developing social-emotional competencies of the students, supporting their psychological well-being, and improving their academic performance.

5. Conclusion

The classroom goal structure can be mastery-oriented or performance-oriented. It influences students' personal educational motivation and the dynamics of relationships in the classroom. For instance, mastery-oriented instructional practices are aimed at creating an environment where students value the deep understanding of learning material, while performance-oriented instructional practices contribute towards an environment where students compete and compare themselves with their peers. International studies confirm the important role of instructional practices in the development of students' social-emotional skills [OECD, 2021].

This study presents the results of the Russian adaptation of the Approach to Instruction (PALS) scale (the 2000 version) and the evaluation of the scale's goodness of fit. The process of the survey adaptation included its translation into the Russian language, as well as conducting a series of cognitive interviews with potential respondents. The result is a Russian-language model of the scale consisting of two factors: Mastery Goal Orientation Factor (4 indicators) and Performance Goal Orientation Factor (3 indicators). Confirmatory factor analysis with the addition of residual correlation between the two items on the Performance Goal Orientation Scale confirmed the structure of the original model.

The results of the Cronbach's alpha reliability test showed adequate internal consistency between the two factors (0.726 for the Mastery Goal Orientation Factor and 0.713 for the Performance

Goal Orientation Factor). The internal consistency of the subscales of the original survey was slightly improved (0.69 for both factors).

Thus, we have obtained a two-factor version of the scale, where the mastery goal orientation factor reflects a teacher's ambition to develop a classroom learning environment that values effort and is sensitive to the interests of the students, while the performance goal orientation factor reflects a teacher's ambition to develop an environment encouraging the achievement of high normative results.

The limitations of the study stem from the fact that the analysis has been performed on an unrepresentative sample. Consequently, the findings cannot be generalised to all middle school teachers in Russia. The model needs to be reproduced using other samples in the future in order to confirm the results.

The adapted Russian-language survey can be used to study teachers' approaches to instruction on Russian samples, as well as to conduct cross-cultural comparisons of learning environments. It is also recommended to complement studies of the classroom goal structure that are based on teachers' self-reports with data on students' perceptions of the classroom goal structures and classroom observations.

The study was implemented in the framework of the Basic Research Program at the National Research University Higher School of Economics (HSE University).

Appendix 1
Approach to Instruction Survey

Please indicate the extent to which you agree or disagree with the following statement on a scale of 1 to 6, where 1 = 'Strongly disagree', 6 = 'Strongly agree'.

No.	Statements						
1	I give a wide range of assignments, matched to students' needs and skill level.	1	2	3	4	5	6
2	I make a special effort to recognize students' individual progress, even if they are below grade level.	1	2	3	4	5	6
3	I encourage students to compete with each other.	1	2	3	4	5	6
4	I point out those students who do well as a model for the other students.	1	2	3	4	5	6
5	During class, I often provide several different activities so that students can choose among them.	1	2	3	4	5	6
6	I help students understand how their performance compares to others.	1	2	3	4	5	6
7	I consider how much students have improved when I give them report card grades.	1	2	3	4	5	6

Key
Mastery Orientation Goals: 1, 2, 5, 7.
Performance Orientation Goals: 2, 4, 6.

References

Ames C. (1992) Classrooms: Goals, Structures, and Student Motivation. *Journal of Educational Psychology*, vol. 84, no 3, pp. 261–271. doi :10.1037/0022-0663.84.3.261

Ames C. (1984) Achievement Attributions and Self-Instructions under Competitive and Individualistic Goal Structures. *Journal of Educational Psychology*, vol. 76, no 3, pp. 478–487. doi:10.1037/0022-0663.76.3.478

Ames C., Archer J. (1988) Achievement Goals in the Classroom: Students' Learning Strategies and Motivation Processes. *Journal of Educational Psychology*, vol. 80, no 3, pp. 260–267. doi:10.1037/0022-0663.80.3.260

Anderman E.M., Eccles J. S., Yoon K.S., Roeser R., Wigfield A., Blumenfeld P. (2001) Learning to Value Mathematics and Reading: Relations to Mastery and Performance-Oriented Instructional Practices. *Contemporary Educational Psychology*, vol. 26, no 1, pp. 76–95. doi:10.1006/ceps.1999.1043

Anderman E.M., Urdan T., Roeser R. (2003) *The Patterns of Adaptive Learning Survey: History, Development, and Psychometric Properties*. Paper presented at Indicators of Positive Development Conference (Washington, DC, 2003, March 12–13).

Anderman E.M., Patrick H. (2012) Achievement Goal Theory, Conceptualization of Ability/Intelligence, and Classroom Climate. *Handbook of Research on Student Engagement* (eds S.L. Christenson, A.L. Reschly, C. Wylie), Boston, MA: Springer, pp. 173–191.

Bardach L., Lüftenegger M., Yanagida T., Schober B., Spiel C. (2019) The Role of Within-Class Consensus on Mastery Goal Structures in Predicting Socio-Emotional Outcomes. *British Journal of Educational Psychology*, vol. 89, no 2, pp. 239–258. doi:10.1111/bjep.12237

Baudoin N., Galand B. (2017) Effects of Classroom Goal Structures on Student Emotions at School. *International Journal of Educational Research*, vol. 86, January, pp. 13–22. doi:10.1016/j.ijer.2017.08.010

Blumenfeld P.C. (1992) Classroom Learning and Motivation: Clarifying and Expanding Goal Theory. *Journal of Educational Psychology*, vol. 84, no 3, pp. 272–281. doi:10.1037/0022-0663.84.3.272

Butler R. (2012) Striving to Connect: Extending an Achievement Goal Approach to Teacher Motivation to Include Relational Goals for Teaching. *Journal of Educational Psychology*, vol. 104, no 3, pp. 726–742. doi:10.1037/a0028613

Dweck C.S. (1986) Motivational Processes Affecting Learning. *American Psychologist*, vol. 4, no 10, pp. 1040–1048. doi:10.1037/0003-066X.41.10.1040

Dweck C.S., Leggett E.L. (1988) A Social-Cognitive Approach to Motivation and Personality. *Psychological Review*, vol. 95, no 2, pp. 256–273. doi:10.1037/0033-295X.95.2.256

Elliott E. S., Dweck C. S. (1988) Goals: An Approach to Motivation and Achievement. *Journal of Personality and Social Psychology*, vol. 54, no 1, pp. 5–12. doi:10.1037//0022-3514.54.1.5

Elliot A. J., Harackiewicz J. M. (1996) Approach and Avoidance Achievement Goals and Intrinsic Motivation: A Mediational Analysis. *Journal of Personality and Social Psychology*, vol. 70, no 3, pp. 461–475. doi:10.1037/0022-3514.70.3.461

Fokkens-Bruinsma M., van Rooij E.C.M., Canrinus E.T. (2020) Perceived Classroom Goal Structures as Predictors of Students' Personal Goals. *Teachers and Teaching*, vol. 26, no 1, pp. 88–102. doi:10.1080/13540602.2020.1740195

Friedel J.M., Cortina K.S., Turner J.C., Midgley C. (2007) Achievement Goals, Efficacy Beliefs and Coping Strategies in Mathematics: The Roles of Perceived Parent and Teacher Goal Emphases. *Contemporary Educational Psychology*, vol. 32, no 3, pp. 434–458. doi:10.1016/j.cedpsych.2006.10.009

Johnson D.W., Johnson R.T. (2005) New Developments in Social Interdependence Theory. *Genetic, Social, and General Psychology Monographs*, vol. 131, no 4, pp. 285–358. doi:10.3200/MONO.131.4.285-358

Kamarova S., Chatzisarantis N.L., Hagger M.S., Lintunen T., Hassandra M., Papaioannou A. (2017) Effects of Achievement Goals on Perceptions of Competence in Conditions of Unfavorable Social Comparisons: The Mastery Goal Advantage Effect. *British Journal of Educational Psychology*, vol. 87, no 4, pp. 630–646. doi:10.1111/bjep.12168

Kaplan A., Middleton M. J., Urdan T., Midgley C. (2002) Achievement Goals and Goal Structures. *Goals, Goal Structures, and Patterns of Adaptive Learning* (ed. C. Midgley), Lawrence Erlbaum Associates, pp. 21–53.

Korotkevich E.R. (2019) Uchebnaya motivatsiya sovremennogo studenta v kontekste teorii dostizheniya tseley [Educational Motivation of the Modern Student in the Context of Achievement Goal Theory]. *Obrazovatel'nye resursy i tekhnologii*, vol. 28, no 3, pp. 27–32. doi: 10.21777/2500-2112-2019-3-27-32

Lüftenegger M., Tran U.S., Bardach L., Schober B., Spiel C. (2017) Measuring a Mastery Goal Structure Using the TARGET Framework: Development and Validation of a Classroom Goal Structure Questionnaire. *Zeitschrift für Psychologie*, vol. 225, no 1, pp. 64–75. doi:10.1027/2151-2604/a000277

Maloshonok N., Semenova T., Terentyev E. (2015) Uchebnaya motivatsiya studentov rossiyskikh vuzov: vozmozhnosti teoreticheskogo osmysleniya [Academic Motivation among Students of Russian Higher Education Establishments: Introspection]. *Voprosy obrazovaniya / Educational Studies Moscow*, no 3, pp. 92–121. doi: 10.17323/1814-9545-2015-3-92-121

Meece J.L., Anderman E.M., Anderman L.H. (2006) Classroom Goal Structure, Student Motivation, and Academic Achievement. *Annual Review of Psychology*, vol. 57, pp. 487–503. doi:10.1146/annurev.psych.56.091103.070258

Middleton M.J., Midgley C. (1997) Avoiding the Demonstration of Lack of Ability: An Underexplored Aspect of Goal Theory. *Journal of Educational Psychology*, vol. 89, no 4, pp. 710–718. doi:10.1037/0022-0663.89.4.710

Midgley C., Anderman E., Hicks L. (1995) Differences between Elementary and Middle School Teachers and Students: A Goal Theory Approach. *The Journal of Early Adolescence*, vol. 15, no 1, pp. 90–113. doi:10.1177/0272431695015001006

Midgley C., Kaplan A., Middleton M., Maehr M.L. et al. (1998) The Development and Validation of Scales Assessing Students' Achievement Goal Orientations. *Contemporary Educational Psychology*, vol. 23, no 2, pp. 113–131. doi:10.1006/CEPS.1998.0965

Midgley C., Maehr M.L., Hruda L.Z., Anderman E. et al. (2000) *Manual for the Patterns of Adaptive Learning Scales*. Ann Arbor: University of Michigan.

Murayama K., Elliot A.J. (2009) The Joint Influence of Personal Achievement Goals and Classroom Goal Structures on Achievement-Relevant Outcomes. *Journal of Educational Psychology*, vol. 101, no 2, pp. 432–447. doi:10.1037/a0014221

Nicholls J.G. (1989) *The Competitive Ethos and Democratic Education*. Cambridge, MA: Harvard University. doi:10.5860/choice.27-1049

Nikitskaya M.G. (2019) Issledovaniya tseley dostizheniya i napravlennosti v kontekste uchebnoy motivatsii [Study on Achievement Goals and Orientation in the Context of Learning Motivation]. *Journal of Modern Foreign Psychology*, vol. 8, no 2, pp. 26-35. doi: 10.17759/jmfp.2019080203

OECD (2021) Beyond Academic Learning: First Results from the Survey of Social and Emotional Skills Paris: OECD. doi:10.1787/92a11084-en

Park D., Gunderson E.A., Tsukayama E., Levine S. C., Beilock S.L. (2016) Young Children's Motivational Frameworks and Math Achievement: Relation to Teacher-Reported Instructional Practices, But Not Teacher Theory of Intelligence. *Journal of Educational Psychology*, vol. 108, no 3, pp. 300–313. doi:10.1037/edu0000064

Park D., Yu A., Baelen R.N., Tsukayama E., Duckworth A.L. (2018) Fostering Grit: Perceived School Goal-Structure Predicts Growth in Grit and Grades // Contemporary Educational Psychology. Vol. 55. September. P. 120–128. doi:10.1016/j.cedpsych.2018.09.007

Patrick H., Kaplan A., Ryan A.M. (2011) Positive Classroom Motivational Environments: Convergence between Mastery Goal Structure and Classroom Social Climate. *Journal of Educational Psychology*, vol. 103, no 2, pp. 367–382. doi:10.1037/a0023311

Roeser R. W., Midgley C., Urdan T. C. (1996) Perceptions of the School Psychological Environment and Early Adolescents' Psychological and Behavioral Functioning in School: The Mediating Role of Goals and Belonging. *Journal of Educational Psychology*, vol. 88, no 3, pp. 408–422. doi:10.1037/0022-0663.88.3.408

Ryan A.M., Gheen M.H., Midgley C. (1998) Why Do Some Students Avoid Asking for Help? An Examination of the Interplay among Students' Academic Efficacy, Teachers' Social–Emotional Role, and the Classroom Goal Structure. *Journal of Educational Psychology*, vol. 90, no 3, pp. 528–535. doi:10.1037/0022-0663.90.3.528

Skaalvik E.M., Federici R.A., Wigfield A., Tangen T.N. (2017) Students' Perceptions of Mathematics Classroom Goal Structures: Implications for Perceived Task Values and Study Behavior. *Social Psychology of Education*, vol. 20, no 3, pp. 543–563. doi:10.1007/s11218-017-9382-1

Skipper Y., Leman P.J. (2017) The Role of Feedback in Young People's Academic Choices. *International Journal of Science Education*, vol. 39, no 4, pp. 453–467. doi:10.1080/09500693.2017.1294783

Stodolsky S.S., Salk S., Glaessner B. (1991) Student Views about Learning Math and Social Studies. *American Educational Research Journal*, vol. 28, no 1, pp. 89–116.

Throndsen I., Turmo A. (2013) Primary Mathematics Teachers' Goal Orientations and Student Achievement. *Instructional Science*, vol. 41, no 2, pp. 307–322. doi:10.1007/s11251-012-9229-2

Urdan T., Midgley C., Anderman E.M. (1998) The Role of Classroom Goal Structure in Students' Use of Self-Handicapping Strategies. *American Educational Research Journal*, vol. 35, no 1, pp. 101–122. doi:10.3102/00028312035001101

Wolters C. A. (2004) Advancing Achievement Goal Theory: Using Goal Structures and Goal Orientations to Predict Students' Motivation, Cognition, and Achievement. *Journal of Educational Psychology*, vol. 96, no 2, pp. 236–250. doi:10.1037/0022-0663.96.2.236

Wolters C.A., Daugherty S.G. (2007) Goal Structures and Teachers' Sense of Efficacy: Their Relation and Association to Teaching Experience and Academic Level. *Journal of Educational Psychology*, vol. 99, no 1, pp. 181–193. doi:10.1037/0022-0663.99.1.181

Wolters C.A., Fan W., Daugherty S. (2010) Teacher-Reported Goal Structures: Assessing Factor Structure and Invariance. *The Journal of Experimental Education*, vol. 79, no 1, pp. 1–29. doi:10.1080/00220970903292934