



# **THE LINKS BETWEEN THE 9TH GRADE STUDENTS' ACHIEVEMENT GOALS ORIENTATIONS AND PERCEIVED SCHOOL ENVIRONMENT**

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# Introduction



- In the stage of middle adolescence school/ education goals become salient for students. However, their salience reduce in the period of late adolescence (Lanz & Rosnati, 2002; Massey et al, 2008).
- From the perspective of achievement motivation (Elliot, 1997, 2006; Law, Elliot, & Murayama, 2012), achievement goals are considered to be as cognitive-dynamic goals focused on competence. It is assumed that any achievement goal has two separate aspects of competence:
  - the definition (mastery-performance);
  - and the valence of competence (approaching or avoiding) (2 x 2 model).
- One of the key aspects of goal formulation is the ability to match them to internal and environmental resources and constraints.
- Diverse educational interactions and connections at school are an important environment / medium to develop capabilities to create and pursue academic goals, particularly for adolescents (Madjar, North, Karakus, 2019; Lerang, Ertesvåg, & Havik, 2019).



# Achievement goal framework

(Elliot & Murayama, 2008)



**The mastery–performance and approach–avoidance distinction which leads to four types of achievement goals:**

- **mastery-approach** goals refer to the students' intent to acquire and master the content of learning material
- **mastery-avoidance** goals relate to the desire to avoid failure mastering the content of learning material
- **performance-approach** goals pertain to the desire to outperform other students or peers
- **performance-avoidance** goals refer to the intent to avoid being outperformed by classmates or other students

# Which of goal orientations are more optimal in terms of development?

## Mastery-approach and mastery-avoidance goals

- are consistently associated with adaptive patterns of learning: cognitive, motivational, and behavioral educational outcomes (Wolters, 2004);
- are positively associated with conceptual change and deep and shallow processing strategies (Ranellucci, et al., 2013; Senko, 2016; Gonida, et al., 2019);
- serve as a stronger predictor of positive psychological outcomes (Benita, Roth, & Deci, 2014; Schweder, 2019).

## Performance-approach goals:

- the evidence about the correlates has not been as consistent; it was found out to be negatively associated with conceptual change and were not associated with processing strategies.

## Performance-avoidance goals

- are associated with maladaptive patterns of learning; help avoidance and self-handicapping; were negatively associated with deep processing strategies and conceptual change (Urduan & Midgley, 2001; Hulleman, et al., 2010; Huang, 2011; Ranellucci, et al., 2013).

Pursuing mastery-approach goals is more beneficial for students' deeper learning, well-being and long-term outcomes than pursuing performance goals (Kaplan & Maehr, 2007; Senko & Dawson, 2017; Elliot & Hulleman, 2017; Bardach, et al., 2018).



# Perceived school environment: students' perceived school goal structures



- School / Classroom goal structure refers to goal-related messages made salient by the policies, practices, and communication strategies that teachers employ with students (Ames, 1992; Skaalvik & Skaalvik, 2011, 2013; Park, et al., 2018)
- It is students' subjective interpretations of the context that create the goal structure and that affect students' reactions (e.g., Bardach, et al., 2019)
- The goal structure indicates the type of goal achievement which is enhanced by the experience of educational activities in a certain learning environment (Wolters, 2004)
- Two dimensions of goal structures (Patrick, et al., 2011):
  - a **mastery goal structure** emphasizing the development of competence;
  - and a **performance goal structure** emphasizing the demonstration of competence (p. 368)



# Students' perceived school goal structures



Two aspects were distinguished which are influenced by the high- and low-mastery-oriented teachers:

- (a) differences in teachers' apparent implicit theories of how students learn, and
- (b) the interface between the social and affective climate of the classrooms with the academic dimension (Meece, et al., 2006).
- Students adopt the achievement goals that match the goals stressed in their environment: a mastery goal structure stimulates a mastery goal orientation among the students, and a performance goal structure stimulates a performance goal orientation (Ames & Archer, 1988; Wolters, 2004; Meece et al., 2006; Skaalvik & Skaalvik, 2011, 2013; Park, et al., 2018).
- School/ classroom goal structures are under teachers' control - knowing which contextual emphases are associated with students' adoption of maladaptive performance-avoidance goals and it provides valuable information for practitioners (Bardach, et al., 2019).



# Fig. 1 Associations between goal structure and goal orientation



## Mastery goal structure stimulates

- students are encouraged with task-based and self-referential criteria;
- emphasize skill development, allow students to retake tests until they understand all materials, and group students based on interests;
- educators implicitly or explicitly signal that they value effort and goal perseverance, help establish high-quality relationships between teachers and students

## Mastery goal orientation students:

value practice, invest greater effort, and persist at academic tasks, tend to attribute failure to lack of effort; more likely to demonstrate greater passion and perseverance for long-term goals.

## Performance goal structure stimulates

- Teachers tend to emphasize outperforming others,
- post students' grades publicly, or group students based on grades.

## Performance goal orientation students:

are more likely to procrastinate, are less likely to persist, tend to attribute failure to lack of fixed ability, are less gritty and earn lower report card grades. (Ames, Archer, 1988, Wolters, 2004; Park, et al., 2018)



# Students' goals orientation stability and change



The results concerning goal stability are diverse:

- In the beginning of adolescence most students show less effort and maladaptive learning strategies (Blakemore & Choudhury, 2006; Suttner-Brandenberger, et al., 2019);
- students become less oriented towards mastery goals within a school year; and across an educational transition.
- Other findings show that according to the correlation between two measurement points the achievement goals or goal orientations remain from moderate to highly stable over time (Tuominen-Soini, et al., 2011).



# Research problem

- Metaanalysis of research over the past 30 years showed that the relations between school goal structures and achievement goals are robust and largely unbiased.
- *“A clear pattern emerged from metaanalysis: of particular relevance, the researchers were able to confirm that each achievement goal is most closely related to its matching goal structure”* (Bardach, et al, 2019. p. 54).
- **However, the understanding of the relation between goal structures and achievement goals is insufficient** (Bardach, et al., 2019). In particular, little is known about the associations between school goal structures and students’ achievement goals over a school year in pandemic situation with emphasis on distance learning.



# Goals and hypothesis of this study



**Goal 1: to investigate the 9<sup>th</sup> grade students achievement goal orientations and perceived school goal structure mean change over a school year: in autumn and spring semesters.**

- Earlier studies reveal reduction in mastery goals at the end of the school year;
- However, it is not clear how Covid-19 pandemic situation with emphasis on distance learning affected students' motivation at W2; different learning contexts might affect motivation and learning processes differently;
- Therefore, no hypotheses formulated for Goal 1.



# Goals and hypothesis of this study



**Goal 2: to evaluate the (strength of the) relationship between the 9<sup>th</sup> grade students perceived school goal structures and achievement goals in two measurement waves ( W1 and W2)**

- H1: the perceived mastery goal structure stimulates a mastery goal orientation (MAp and MAv) among the students and a performance goal structure stimulates a performance goal orientation (PAp and PAv) in W1 and W2.
- H2: the relation is negative between perceived performance goal structure and mastery goal orientation (MAp and MAv) and between perceived mastery goal structure and performance goal orientation (PAp and PAv) in W1 and W2.



# Sample



Ongoing longitudinal “Goals Lab” study on adolescent goals (2019-2021, led by dr. Rasa Erentaitė)

- Mixed-quota sampling: SES context X achievement (low, medium, high)
- 36 gymnasiums across Lithuania (6 in a major city, 21 urban, 9 non-urban)
- **1268** 9th grade students (51,7% females), who participated in W1 and W2 (sample retention 95,4%)
- Age at W1 - between 14 and 16 (M = 14.87 SD = 0.39)
- Homogenous ethnically (> 98% Lithuanian)
- Diverse family and socio-economic settings:
  - 67% live with two parents; 22% parental divorce, 4% loss, 4% migration
  - 12.9% receive free nutrition at school (on a national level – 13.7%)



# Methods



Comprehensive online survey instrument developed for the study

Data collection:

- For W1: November 4-26, 2019 (online during regular classes at schools)
- For W2: April 17-May 24, 2020 (online during Covid 19 quarantine period)

Instruments used for the current analysis:

- For **achievement goals orientations**
  - a revised Achievement Goal Questionnaire (AGQ-R) assessment tool (Elliot & Murayama, 2008)
- For **perceived school environment**
  - the Perceived School Goal Structures scale (Park, et al., 2018)

## Reliability of the instruments (Cronbach's alpha)

AGQ-R subscales	Items no.	Cronbach's alpha
MAp	3	0,832
MAv	3	0,763
PAp	3	0,834
PAv	3	0,779
<b>Perceived School Goal Structures</b>		
Goal structure M	6	0,812
Goal structure P	5	0,816



# Data analyses



- Descriptives calculated using SPSS v. 23
- Cross-lagged path analysis carried out with Mplus 7.4
- MLR estimator was used
- TYPE=COMPLEX option was used to control for non-independence of observations (clustered within classes)
- Missing data handled with FIML



# Results

## Achievement goals orientations

### Descriptive Statistics

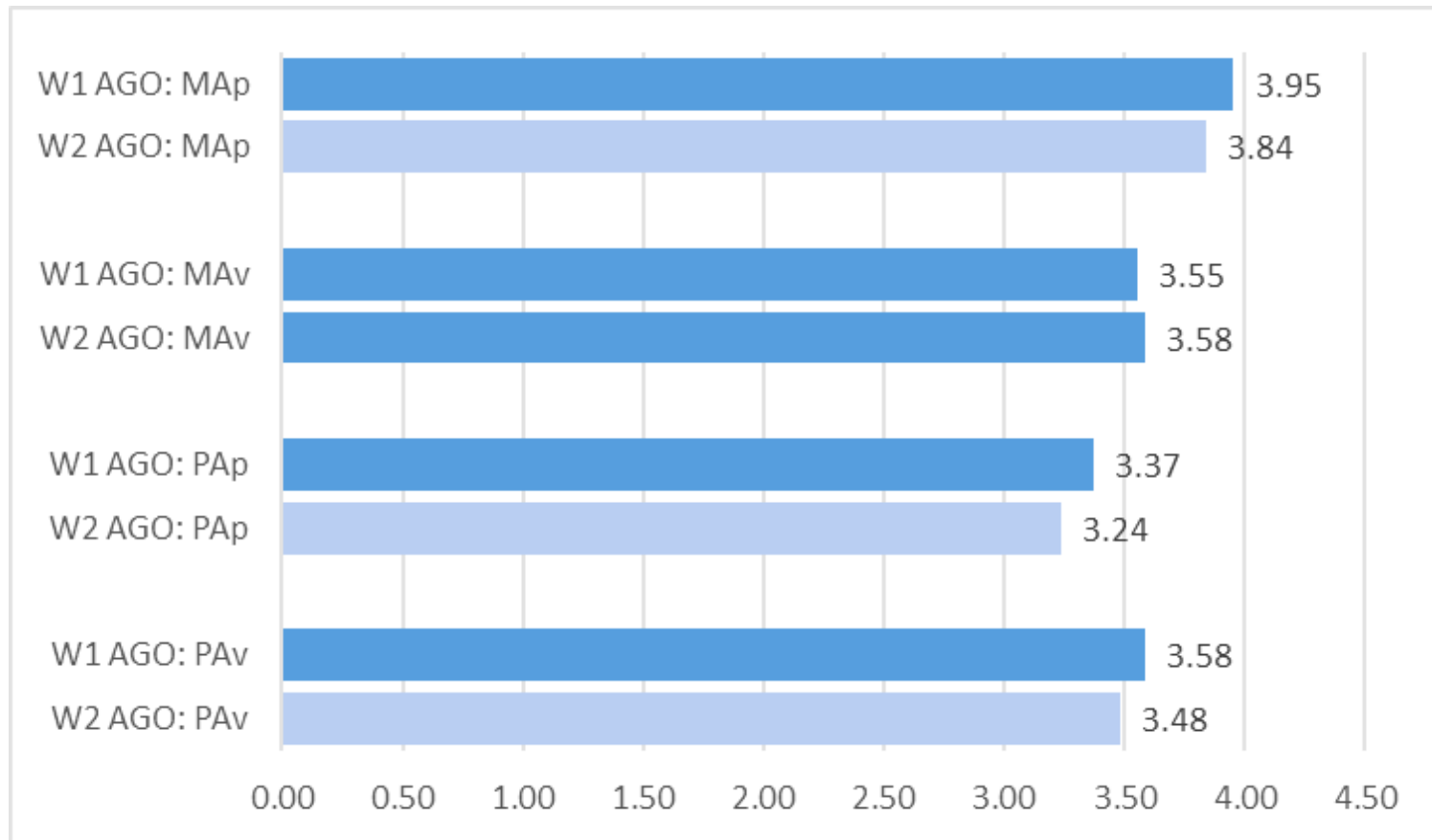


Variable	M	SD	Possible range
MAp W1	3.95	0.85	1.00–5.00
MAp W2	3.84	0.88	1.00–5.00
MAv W1	3,55	0.94	1.00–5.00
MAv W2	3.58	0.87	1.00–5.00
PApW1	3.37	1.04	1.00–5.00
PApW2	3.24	1.05	1.00–5.00
PAv W1	3.58	0.98	1.00–5.00
PAv W2	3.48	1.00	1.00–5.00



# Results

## Achievement goals orientations W1-W2 means comparison



Different color indicates statistically significant difference between means at W1 and W2, (paired samples t test,  $\alpha = 0.01$ )



# Results

## Perceived school goal structures

### Descriptive Statistics

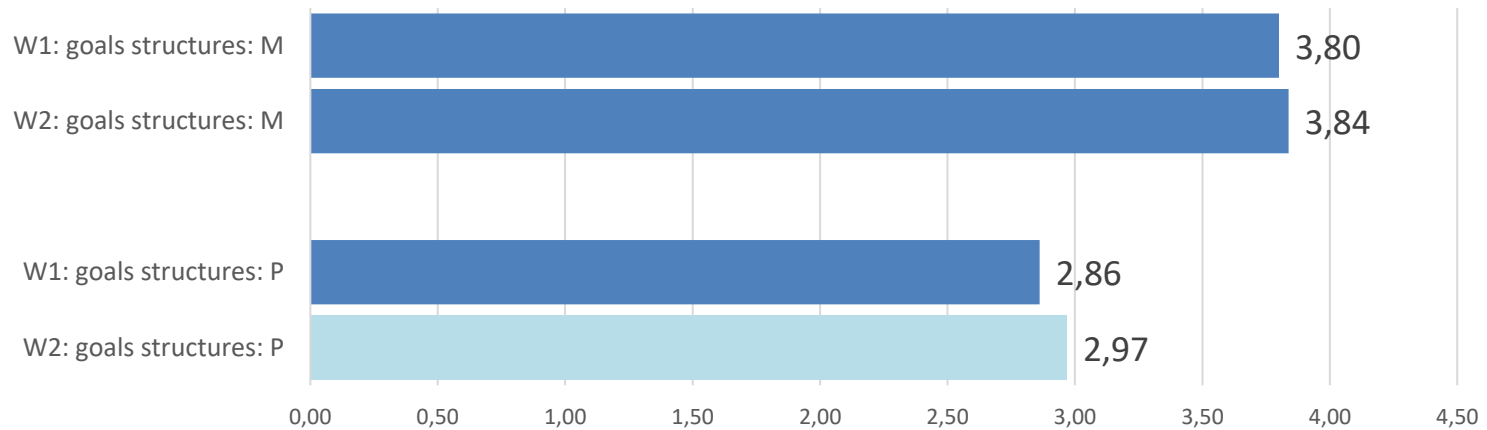


Variable	M	SD	Possible range
Goal structure M W1	3.80	0.76	1.00–5.00
Goal structure M W2	3.84	0.78	1.00–5.00
Goal structure P W1	2.86	0.93	1.00–5.00
Goal structure P W2	2.97	0.98	1.00–5.00



# Results

## Perceived school goal structures W1-W2 means comparison



Different color indicates statistically significant difference between means at W1 and W2, (paired samples t test,  $\alpha = 0.001$ )



# Results

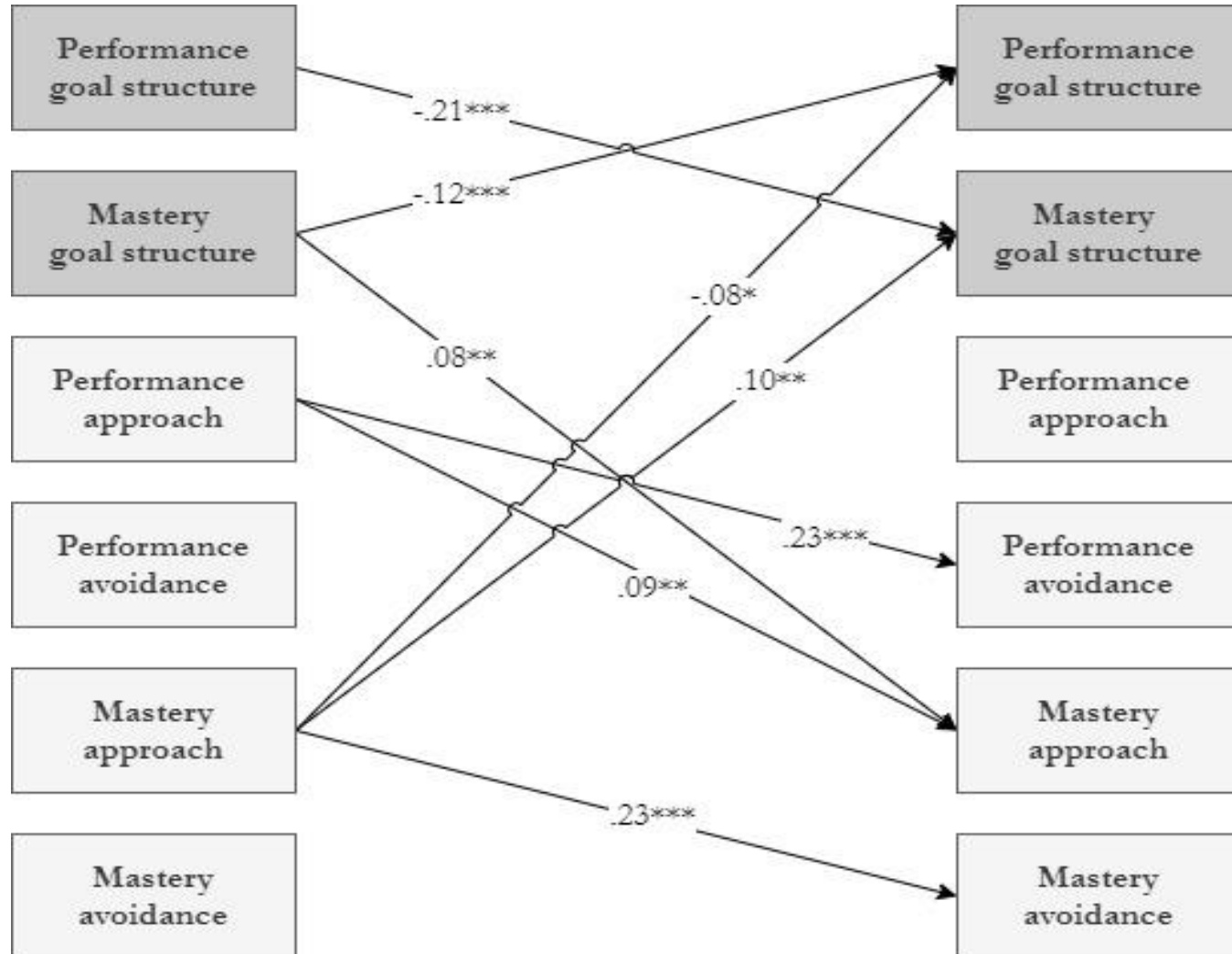
## Correlations between study variables



	W2 AGO: PAP	W1 AGO: MAv	W2 AGO: MAv	W1 AGO: MAp	W2 AGO: MAp	W1 AGO: PAv	W2 AGO: PAv	W1: goals structures: M	W2: goals structures: M	W1: goals structures: P	W2: goals structures: P
W1 AGO: PAP	,451**	,394**	,250**	,376**	,223**	,745**	,405**	,140**	,070	,118**	0,053
W2 AGO: PAP		,189**	,397**	,190**	,338**	,372**	,766**	0,031	,094**	,066	,083**
W1 AGO: MAv			,382**	,527**	,296**	,489**	,207**	,250**	,145**	-0,005	-0,025
W2 AGO: MAv				,392**	,646**	,258**	,466**	,207**	,246**	-0,037	-0,007
W1 AGO: MAp					,522**	,359**	,197**	,431**	,288**	-0,090**	-,137**
W2 AGO: MAp						,181**	,368**	,301**	,403**	-,122**	-,135**
W1 AGO: PAv							,399**	,156**	,077	,085**	0,040
W2 AGO: PAv								0,050	,119**	0,044	,083**
W1: goals structures: M									,507**	-0,272**	-,287**
W2: goals structures: M										-0,345**	-,460**
W1: goals structures: P											,532**

\*\*Correlation is significant at the level  $p < 0.001$  (2-tailed)

# Cross-lagged path analysis



Note. Saturated model. Model includes non-significant cross-lagged paths between all variables and within-time correlations.



## Limitations



- All reports are based on subjective self-reports.
- The measures used did not consider certain content areas or specific subjects.

## Strengths

- The present study is unique in examining the differences in students' goal orientation and perceived school goal structure change over a school year in Covid-19 pandemic situation with emphasis on distance learning.
- This study has a clear practical orientation and helps to scientifically support schools seeking for adaptive patterns of learning: cognitive, motivational, and behavioral educational outcomes, stimulate a mastery goal orientation among the students and preventing students' adoption of maladaptive performance-avoidance goals.



# Conclusions 1



Mean-level changes were observed in students achievement goals orientations over a school year:

- Students became less oriented towards mastery-approach and performance goals, while their orientation towards mastery-avoidance goals remained stable at the end of the school year.
- The results also show that students, on average, perceived more performance goal structure at school at the end of the school year.

These dynamics may reflect a complex interplay of individual and school level factors, such as normative change, school burnout and change in the learning contexts during Covid-19 pandemic (classroom vs distance learning).

## Conclusions 2

Our findings also help to disentangle the links between school goal structures and students' achievement goals over a school year.

- Specifically, perceived performance school goal structure negatively predicted mastery goals structure and mastery goal structure negatively predicted performance goal structure, but positively predicted mastery approach goals orientation among students.
- At the same time, higher mastery approach orientation in students was related to higher perceived mastery school goal structure and lower performance school goal structure over time, as well as higher mastery avoidance orientation among students.
- Performance approach orientation was not related to school goal structures, but it predicted higher performance avoidance and, to a lesser extent, mastery approach orientation among students at the end of the school year.



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