

5. IMPLICIT THEORIES OF INTELLIGENCE AND SCHOOL PERFORMANCE. A SYSTEMATIC REVIEW

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Abstract: *The aim of this paper was to shed a light upon the relationships between implicit theories of intelligence and school performance through a systematic review approach, which mainly used empirical studies on the connections between these constructs. In the first section of this review, we synthesized the necessary theoretical marks for understanding the concepts mentioned above, we analysed definitions, as well as models of implicit theories of intelligence, referring to the relevance for the educational field. Then, there is also an analysis on empirical studies in the international literature that addresses the central concepts of the paper in an educational context and a systematic review of the relationships between implicit theories of intelligence and school performance. The last section contains the final conclusions, the limits of this systematic review and future research directions.*

Key words: *implicit beliefs, implicit theories of intelligence, incremental theories, entity theories, school performance*

1. Conceptual clarification

One of the many challenges in conceptualizing implicit theories of intelligence and identifying relevant research in the literature is represented by the terminological incongruency, meaning that the theorists have used interchangeable terms, such as: implicit theories (Hong, Chiu, Dweck, Lin & Wan, 1999), lay theories (Molden & Dweck, 2006), mindsets (Dweck, 2006), naive theories (Miele & Molden, 2010). The first term used by Dweck and her collaborators was *theories* or *implicit beliefs* (Dweck & Leggett, 1988), the terminological alternative we opted for in the hereby paper. Furthermore, we will also use the synonym term of mindset, Dweck (2006) herself pleading in favour of this word, considering practical reasons.

The Implicit Theories (IT) represent belief systems which determine the interpretation of certain characteristics, personal or belonging to another individual, as well as particularities describing a situation. These aspects are especially useful when monitoring and processing information, or reacting to various events or circumstances. The implicit theories are not isolated ideas; actually, they successfully fulfil an organizing function, moulding together objectives, beliefs and behaviours in what it could be referred to as a meaning system (Hong, Chiu, Dweck, Lin and Wan, 1999; Molden & Dweck, 2006).

According to Miele & Molden (2010), mindsets create meaning systems; namely, they organize the objectives, attributes, helplessness feelings, belief in effort, etc., therefore outlining two thinking patterns, which respectively lead to specific behaviours. People's beliefs regarding the flexibility of attributes, such as intelligence, honesty, creativity or other characteristics, can be split into two

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categories: entity theories (fixed mindset) or incremental theories (growth mindset).

2. Implicit Theories of Intelligence, their classification and relevance in the educational field

An ever increasing interest of the researchers in the implicit beliefs of intelligence (ITI) has been noticed in the last two decades. Several researchers in the educational field have replicated Carol Dweck and her collaborators' studies, highlighting that, depending on the predominant implicit theories of intelligence, individuals are keener on one type of behaviour or another (Hong and co., 1999). When people consider intelligence as being immovable, they actually seek the validation of their abilities by reaching performance objectives or avoiding failure, high effort rate being regarded as an indicator of reduced abilities. Therefore, individuals manifesting entity theory (fixed mindset) with respect to intelligence, show a rather low level of perseverance when it comes to fulfilling tasks which could threaten their image. *Entity theories* are often associated with individuals who perceive intelligence as a fixed, uncontrollable, appointed at birth, relatively global and stable in time (Dweck & Leggett, 1988; Rattan and co., 2012). Those who exhibit high rates in fixed mindsets believe that intelligence cannot be changed by the learning process or through sustained effort and perseverance.

On the contrary, *incremental theories* (growth mindset) refer to those beliefs or perceptions which present intelligence as a developable ability, improved by the effort which occurs during the learning process, being modifiable and controllable. Studies have proven time and time again that people who consider that intelligence and learning abilities can change are more likely to take on learning objectives, finding daring tasks as a growing opportunity, improving their abilities at the same time. In this case, the effort is the main tool for overcoming difficult situations, strenuous tasks being viewed as information sources about the learning process. Carol Dweck (2019) has emphasized that the growth mindset could form the core of a meaning system which could help individuals engage in thought processes and actions that bring them closer to their objectives. The incremental belief is mainly based on the fact that human attributes constantly change, and the students who possess such a view do not directly link failure to the stable conception of oneself, seeing the self as a dynamic structure (Chiu and co., 1997). On the other hand, the students who are guided by entity theories tend to have rigid self-conceptions, the self being regarded as fixed and unaltered. For such a student, failure becomes a permanent diagnosis method of personal defects and of the others, through externalized projection. The focus on the helplessness and incapacity determines them to inefficiently react, grounded in a low motivation to remedy faulty aspects and inadequate decisions. The latter are conditioned by the interest to uphold their statute and to protect the social self, altogether with mastery-avoidance goals, as well as failure avoidance through unacceptable strategies (Marksteiner, Nishen & Dickhäuser, 2021; Murphy & Dweck, 2010).

ITI have strong motivational consequences, possibly influencing the success in learning activities. Studies have proven that the theories on intelligence influence the pupils' and students' school behaviour. Empirical research on middle school

children has emphasized that the incremental perspective on intellectual abilities is strongly linked with self-regulation learning strategies and behaviours, as well as with a high level of efficiency and resilience and adaptive motivational profiles (Chen & Usher, 2013; Yeager & Dweck, 2012). Teenagers who believe that intelligence is a flexible quality prefer difficult tasks, because they perceive them as opportunities to develop themselves. These beliefs increase the probability of putting in effort and obtaining good academic results, failure becoming a challenge source and an attempt to overcome obstacles (Diaconu-Gherasim & Butnaru, 2013). However, numerous studies have pointed out that entity theories seem to be a risk factor for the academic course, as it is a positive predictor for complex tasks avoidance goals, fixed beliefs leading to feelings such as disappointment, hopelessness, helplessness and to the decreasing of emotional engagement (King & McInerney, 2014; Blackwell et al., 2007; De Castell & Kyrne, D., 2015).

3. Method

This report aims to offer a systematic review of the literature, covering published research papers which focus on the connection between ITI and school performance.

3.1. Literature searching

The research papers included in this systematic review have been gathered by searching the most relevant data bases, such Web of Science, Science Direct, Sage, Google Scholar, Eric Gov, using the following key-words (and their variations): *implicit theories of intelligence and school performance*. It has to be mentioned that this review covers especially the literature available in the last ten years, due to the fact that the research process has identified three meta-analyses which summarized the incipient studies. Another argument for this particular choice would be that, when it comes to implicit theories of intelligence, one can notice a higher number of empirical studies in the educational field especially in the last decade.

3.2. Selection of the studies

The studies included in this review have reported connections between the implicit theories and the school performance. We have encompassed only the studies that were conducted in an educational context, having as participants either pupils, or students. In other words, the studies included in this review have fulfilled the following *criteria*: (1) the concerned sample has been chosen from the pupils/students population, because, according to our scope, we intend to identify the published research papers which have examined ITI as predictors of school/academic performances; (2) the selected articles have analysed the link between one of or both categories of implicit beliefs and school/academic performance; (3) the ITI were measured with widely, valid and reliable research tools; (4) the studies were planned and conducted in the frame of correlational designs.

3.3. Categories of studies

For each article we have assessed the following information: (1) general details about the authors, title, publishing year of the article, the journal where it was published, and the abstract; (2) the participants involved in the study; (3) the

theoretical framework of the implicit theories; (4) study design (correlational) (5) assessment tools for the two constructs and (6) the measures variables. This information has been used to classify the articles and to extract the main results.

4. Results and discussions

Following the research process, we have selected 21 articles ($N=21$), out of which 18 are quantitative studies ($n=18$), three being meta-analyses ($n=3$). The studies which included students from special educational needs category, or from the high academic potential category/gifted students, studies that had a small number of students included or that did not mention the measures for one or more variables, as well as reviews and theoretical syntheses, have been excluded.

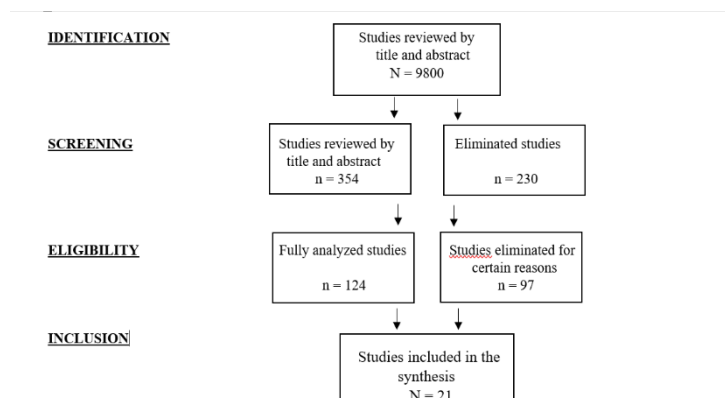


Fig. 1. Selection of the studies: the relationship between the implicit theories of intelligence and school performance

Tab. 1. The list of studies covered in the systematic review

No. crt.	Author and title of article	Journal/ Source	Year of publication
1.	Adamson, I., Gudakovka, N., & Svence, G., <i>Implicit theories of intelligence and academic achievement: review of two studies in Latvia</i>	„Problems of Psychology in the 21st Century”, 14(1), 7-17	2020
2.	Blackwell, L. S., Trzesniewski, K. H., and Dweck, C. S., <i>Implicit theories of intelligence predict achievement across an adolescent transition: a longitudinal study and an intervention</i>	„Child Development”. 78, 246-263	2007
3.	Burnette, J. L., O'Boyle, E. H., VanEpps, E. M., Pollack, J. M., & Finkel, E. J., <i>Mind-sets matter: A meta-analytic review of implicit theories and self-regulation</i>	„Psychological Bulletin”, 139(3), 655-701	2013
4.	Chen, J., <i>Implicit Theories, Epistemic Beliefs, and Science Motivation: A Person-Centered Approach</i>	„Learning and Individual Differences”, 22, 724-735	2012
5.	Claro, S., Paunesku, D. & Dweck, C. S., <i>Growth mindset tempers the effects of poverty on academic achievement</i>	„Proc. Natl. Acad. Sci. U.S.A.”, 113, 8664-8668	2016
6.	Costa, A. & Faria, L., <i>Implicit theories of intelligence and academic achievement: A meta-analytic review</i>	„Frontiers in Psychology”, 9, article 829	2018

7.	De Castella, K. & Byrne, D., <i>My intelligence may be more malleable than yours: the revised implicit theories of intelligence (self-theory) scale is a better predictor of achievement, motivation, and student disengagement</i>	„Eur J Psychol Educ”, 30, 245-267	2015
8.	Destin, M., <i>Do Student Mindsets Differ by Socioeconomic Status and Explain Disparities in Academic Achievement in the United States?</i>	„AERA open”, 5(3)	2019
9.	Diaconu-Gherasim, L. R., Tepordei, A.-M., Mairean, C., & Rusu, A., <i>Intelligence beliefs, goal orientations and children’s academic achievement: Does the children’s gender matter?</i>	„Educational Studies”, 45(1), 95-112	2019
10.	Diseth, Å., Meland, E., & Breidablik, H. J., <i>Self-beliefs among students: Grade level and gender differences in self-esteem, self-efficacy and implicit theories of intelligence.</i>	„Learning and Individual Differences”, 35, 1-8	2014
11.	Jiang, S., Liu, R. D., Ding, Y., Fu, X., Sun, Y., Jiang, R., & Hong, W., <i>Implicit Theories and Engagement in Math Among Chinese Adolescent Students: A Moderated Mediation Model of Intrinsic Value and Academic Self-Efficacy</i>	„Frontiers in psychology”, 11, 1325	2020
12.	Kornilova, T., Kornilov, S., & Chumakova, M., <i>Subjective evaluations of intelligence and academic self-concept predict academic achievement: evidence from a selective student population</i>	„Learning and Individual Differences”, 19(4), 596-608	2009
13.	Li, P., Zhou, N., Zhang, Y., Xiong, Q., Nie, R., & Fang, X., <i>Incremental Theory of Intelligence Moderated the Relationship between Prior Achievement and School Engagement in Chinese High School Students</i>	„Frontiers in Psychology”, 8, article 1703	2017
14.	Liu, W., C., <i>Implicit Theories of Intelligence and Achievement Goals: A Look at Students’ Intrinsic Motivation and Achievement in Mathematics</i>	„Frontiers in Psychology”, 12:593715	2020
15.	Magno, C., <i>Implicit Theories of Intelligence, Achievement Goal Orientation, and Academic Achievement of Engineering Students</i>	„The International Journal of Research and Review”, vol. 9	2012
16.	Rickert, N. P., Meras, I.L., & Witkow, M. R., <i>Theories of intelligence and students’ daily self-handicapping behaviors</i>	„Learning and Individual Differences”, 36, 1-8	2014
17.	Romero, C., Master, A., Paunesku, D., Dweck, C. S., & Gross, J. J., <i>Academic and Emotional Functioning in Middle School: The Role of Implicit Theories. Emotion</i>	„Emotion” Advance online publication	2014
18.	Tarbetsky, A. L., Collie, R. J. & Martin, A. J., <i>The role of implicit theories of intelligence and ability in predicting achievement for Indigenous (Aboriginal) Australian students</i>	„Contemporary Educational Psychology”, 47, 61-71	2016

19.	Sisk, V. F., Burgoyne, A. P., Sun, J., Butler, J. L., & Macnamara, B. N., <i>To What Extent and Under Which Circumstances Are Growth Mind-Sets Important to Academic Achievement? Two Meta-Analyses</i>	„Psychological Science”, 29(4), 549-571	2018
20.	Su, A., Wan, S., He, W. & Dong, L., <i>Effect of Intelligence Mindsets on Math Achievement for Chinese Primary School Students: Math Self-Efficacy and Failure Beliefs as Mediators</i>	„Frontiers in psychology”, 12, 640349	2021
21.	Wang, D., Yuan, F. & Wang, Y., <i>Growth mindset and academic achievement in Chinese adolescents: A moderated mediation model of reasoning ability and self-affirmation</i>	Current Psychology”, 1-10	2020

According to the selection undertook for this review, we come to the conclusion that there is a series of empirical studies which have provided empirical evidences that implicit theories of intelligence foresee achievement (for example, Romero et al., 2014; Costa & Faria, 2018). Generally, research papers which examine the different response models regarding student beliefs have suggested that incremental theories, as opposed to entity theories, have the tendency to be associated with better school results (for example, Blackwell, 2007; Romero et al., 2014; Tarbetsky et al., 2016; Bostwick, 2017; Burnette et al., 2013 – on a smaller scale). The results, however, are mixed, considering that there are studies which deny implicit theories as a significant predictor for learning performance in school (Kornilova & Chumakova, 2009; Todor, 2014; Magno, 2012). The growth mindset of the students positively predicts engagement and performance in mathematics (Bostwick et al., 2018), lecture (Alesi et al., 2016), music (Müllensiefen et al., 2015), better results in final school tests (Blackwell, 2007; Yeager & Dweck, 2012; Rissanen et al., 2019).

Ādamsons, Gudaskovska & Svence (2020) have completed two studies, involving Latvian middle school and high school students, in order to explore the relationship between mathematics performance and implicit theories of intelligence. The research results indicate some meaningful contradictions. In the first study ($N1=258$), the results point to a negative correlation between the fixed mindset and academic achievement. Similar results had been obtained previously by De Castella & Byrne (2015), who noticed that academic performances are positively correlated with incremental theories, whereas they are negatively linked to the entity ones. The second study ($N2=165$) has highlighted a positive, statistically significant connection between implicit theories, academic self-efficiency and the school performance of students in mathematics, but the results are not similar when the performance domain is language and language acquisition. Therefore, the results are rather discrepant. Nevertheless, the conclusions are in accordance with Dweck’s statements (2017; 2019), who believes that individuals can have different perspectives about their abilities when considering different learning fields.

In the case of students with poor school results, ITI seem to have a special significance. In a recently conducted study in Singapore, Liu C. W. (2021) has assessed the implicit theories of intelligence and the mastery-approach goals

orientation to understand the intrinsic motivation of the students and academic performance in mathematics. The researched concerned 1.201 students, aged 13-17, who have shown academic regression. Based on structural equations modelling, the researchers have indicated that the incremental mindset has predicted mastery-approach goals, and these, in turn, have predicted the intrinsic motivation and mathematics performance.

The majority of the authors analysed series of mediators and moderators which are involved in the relationship between implicit theories of intelligence and school performance. For example, Jiang et al. (2020) have considered that students' academic engagement and academic self-efficiency are possible mediators between implicit beliefs of intelligence and school results. Controlling the age and the gender variables ($N=170$ Chinese teenagers), the results have shown positive associations between the implicit theories of intelligence among students and their involvement in mathematics. Moreover, self-efficiency has served as a moderator in the link between ITI and intrinsic motivation.

While investigating the mediating role of the reasoning capacity in the relationship between ITI and school performance, and the moderating role of self-affirming on 1828 Chinese teenagers, Wang, Yang & Wang (2020) have noticed that the growth mindset has been positively associated with academic achievements. More exactly, the reasoning capacity has partially mediated this connection. Furthermore, ITI have significantly predicted school achievements in the case of teenagers who possess a high level of self-affirmation, whereas it has not the same function for those with a low level of self-affirmation. The moderated mediation analysis has shown once again that direct and indirect relationships between the growth mindset and the academic achievements have been moderated by self-affirmation. The indirect effect of the growth mindset on academic achievement, through the reasoning capacity, has been stronger in the case of teenagers presenting a high level of self-affirmation, compared to those with a low level of self-affirmation. These results could be explained in light of the fact that students with a growth mindset also display a higher level of self-efficacy (Diseth, Meland & Breidablik, 2014).

Dweck and her collaborators (Dweck & Leggett, 1988; Dweck, 2000) have stated that mindsets are antecedents for achievement goals. This is due to the fact that a mindset creates a belief system which triggers a certain achievement goal. According to this theoretical framework, it can be noticed that there is a consistent body of empirical studies (Bempechat, Londra & Dweck, 1991; Robins & Pals, 2002) which have studied the relationship between ITI and school performance explained by the goal orientation theory (Eliot, 1999; Elliot & McGregor, 2001). Generally speaking, the results indicate that incremental theories of intelligence predict mastery-approach goals, while entity theories are a good predictor for performance-avoidance goals (Chen, 2012). A regression model based on implicit theories of intelligence and goal orientation, recently used in a study, explains 13,8% of the mathematics performance variation (Liu, 2021). Another study, performed by Diaconu-Gherasim et al. (2019) in Romania, on a number of 362 middle-school students, has shown that the incremental theory positively predicted

the academic achievement, whereas the entity theories have negatively done so. Moreover, the positive connection between the incremental theory and academic achievement has been fully mediated by performance-approach goals and performance-avoidance goals.

The implicit theories of intelligence and their impact on school results seem to be relevant in specific contexts, such as those determined by socioeconomic status (SES) and poor school results (educational risk). Socioeconomic differences, expressed through factors such as parents' educational level, background, family environment, have been analysed as moderators in the relationship between the implicit beliefs of intelligence and school performance. Broadly speaking, students with disadvantaged backgrounds show a tendency towards self-limiting beliefs on their capacities (for example, Tarbetsky, Collie & Martin, 2016; Sisk, 2018). Expanding the aforementioned research studies, Claro, Paunesku and Dweck (2016) have ascertained that the growth mindset is a strong achievement predictor and it has a positive relationship with achievement, regardless the socioeconomic category, at least in the case of Chilean students. Furthermore, the results have suggested that participants coming from low income families have lower chances of developing incremental beliefs about their own abilities, compared to students originating from economically endowed families. To put it another way, there has been noticed that there is a negative interaction between the family income and implicit beliefs, when it comes to predicting test scores ($B = -.020$; $p < .001$ for the linguistic field and $B = -.018$; $p < .001$ for mathematics). Thus, a lower family income increases the damaging effects of the fixed mindset or, on the contrary, the growth mindset can contribute to the cushioning of negative effects of economic deprivation on school performances. Nevertheless, results have shown that, in some cases, belief sets of intelligence can temperate or amplify the effects of poverty. As an explanation for these results, we can consider the family environment, namely the mindset that the parents pass over to their children.

For example, the results of a study performed by Romero et al. (2014) have shown that a higher level of education in the case of the mother moderates the connection between the participants' growth mindset and the probability of choosing a more challenging mathematics class. More recently, similar results have been obtained by Destin et al. (2019) as well, in a study carried out in the United States which encompassed 4.828 eighth and ninth grade students, from 61 public high schools. Correlational analyses have proven a link between the educational level of the mother and the entity beliefs of the children. Students with high-level SES backgrounds got lower scores with respect to fixed mindset, compared to those who come from low-level SES backgrounds. Moreover, entity beliefs explain 7% of the relationship between SES and school performance. Other studies have proven that SES has mediated the link between growth mindset and performance, the effect of growth mindset on marks being more consistent among younger students (Alvarado, Rodríguez Ontiveros & Ayala Gaytán, 2019). The study accomplished by Haimovitz & Dweck (2017) has underlined correlations between the beliefs of children and parents, meaning that the reaction of parents when faced with the failure of their children passes on the mindset type that characterizes them to the

latter. The school performance was relevant for certain studies: Davis et al. (2011) suggested that implicit theories of intelligence regarding mathematics abilities can negatively predict helplessness only for the students who are at risk of school underachievement, and entity beliefs can guide students with high-level academic self-efficiency to focus on developing personal competitiveness, which can have a positive impact.

An important number of studies analysed the connection between implicit theories of intelligence, self-regulation and their impact on school results. For example, Burnette et al. (2013) have performed a meta-analysis based on the self-control theory (Carver & Scheier, 1998) to investigate the links between implicit theories of intelligence and self-regulation, the latter being constructed in light of three processes: goal establishing, goals appliance and their monitoring. Meta-analytical results ($k=113$) have indicated that implicit theories predict distinct self-regulation processes which, in turn, predict goal achievement. A very important aspect for the school environment, mentioned by the authors, is the ego threatening, which has significantly moderated the association of incremental theories with performance goals, this negative connection being especially strong in the presence vs. the absence of ego threatening: $B = -.104$, $p < .05$. Therefore, implicit theories can support a weak direct association with academic achievements (Burnette et al., 2013).

Sisk et al. (2018) conducted a meta-analysis ($k=273$; $N=365,915$) which examines the power of the relationship between mindset and academic achievement, and potential moderating factors (SES, an educational risk situation). The average meta-analytical correlation between growth mindset and academic results was very weak ($r = .10$). The developing stage of the students was a statistically significant moderator, whereas SES, the educational risk level and school performance do not show meaningful connections.

The results of both studies performed by Sisk and her collaborators are consistent with those obtained by Costa & Faria (2018), who achieved a meta-analysis which was built on the connection between implicit theories of intelligence and academic achievement, including 46 studies and a number of 412,022 pupils and students. The results of the meta-analysis have proven a weak to moderate range for the association between implicit theories and school results (general performance, $r = .07$), based on the Pearson coefficient (r), indicating that ITI are generally positively connected to academic results, on a small scale. A noteworthy aspect about data collecting is that there is a statistically insignificant connection between implicit theories of intelligence and self-reported school results. Besides, results have revealed that students who believe that their intelligence is flexible have more chances of obtaining better grades. Additionally, gender has proven to be an insignificant moderator, while in the case of educational level, results have presented a moderate association when it comes to middle-school children. The studies have been analysed from a culturally environmental point of view, as well. Thus, Asian students reported a positive association between incremental beliefs and achievements, while those from North America presented negative entity beliefs and academic results correlations. An interesting aspect that the authors have

emphasized is that the studies performed on European population report a connection between positive entity theory and school results. A plausible explanation that could support these results is the tendency of Europeans to convey an academically competitive society, which could influence the outlook of the students on their own intellectual abilities, determining them to focus rather on individual results and to appreciate positive school assessment (Costa & Faria, 2018).

4. General conclusions, limits and directions for future research

The quantitative studies and the three meta-analyses shed some light on valuable information about the relevance of implicit theories of intelligence for predicting school performance. The first two meta-analyses (Costa & Faria, 2018; Sisk et al., 2018) do not support Carol Dweck's idea (2008) on the profound effects that implicit beliefs have on school results. Other than that, Burnette et al. (2013) have come to the conclusion that implicit theories of intelligence are moderately connected to achievements, as shown by certain studies, but the effect is considered to be mostly indirect. As a further matter, Costa & Faria (2018) have noticed that the connection between implicit beliefs of intelligence and the results of the students has not been moderated by gender; however, there has been a moderate association in the case of middle-school students. Additionally, it seems that the measure used in the ITI assessment has a special effect on research results; the use of Dweck's original scale is recommended, instead of the adapted ones, as well as specific scales adjusted for the educational field, not the generally used measures for implicit theories, due to the fact that scores prove a connection with school results achievement. For the most part, the three meta-analyses have proven that the effect magnitude is inconsistent, the majority of the results have low values, suggesting a very weak link between implicit theories of intelligence and academic achievement.

At the same time, the results are inconsistent when it comes to implicit theories of intelligence as a predictor of school performance, even in the case of recent studies, which were not included in the aforementioned meta-analyses. Thus, the authors tried to explain these relationships taking into consideration some moderators and mediators, such as family financial situation, background, academic self-efficacy, goal orientation, previous school results. As mentioned above, a pertinent explanation for these mixed results resides in the differences between measuring instruments for implicit theories, the two factors being assessed through general statements on the perspective about personal abilities, more often than not (De Castella & Byrne, 2015). Another explanation for the results incongruity is linked to age categories, meaning that the two implicit theories factors can vary, depending on the developing stage. It is noteworthy that certain empirical studies have focused on specific principles of the theory which debates the way implicit beliefs of intelligence affect students, such as facing challenging situations, hypothetically anticipating the effects only for some students. Some results presented in meta-analyses or empirical studies have supported these hypotheses, suggesting that there are significant effects for students with high educational risk and disadvantaged socioeconomic status. Another attention-worthy aspect deals

with studies' results that considered the cultural context as a moderator, more specifically the competitiveness idea viewed as a characteristic of the school climate, which is indirectly transmitted through the educational system, and curricular standards specificity. Therefore, contrary to all expectations, European studies have shown that entity theories are associated with high school performance, as opposed to Asian or USA research, where entity beliefs seem to be considered a relevant predictor for poor school results.

This systematic review has, admittedly, certain limits. The study was performed with the help of access-friendly data bases; thus, the possibility of overlooking the analysis of relevant studies from other sources arises. Other omissions can be blamed on availability limits regarding access to full-text articles and the search algorithms. With respect to future research directions, we aim to expand the already existing research sets and to investigate the relationships between implicit theories and school performance, in light of certain series of mediating and moderating factors, in the case of middle-school students in Romanian schools.

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