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Reflections on the use of self-handicapping strategies in mathematics: literature review

Reflexões acerca do uso de estratégias autoprejudiciais em matemática: uma revisão da literatura

ABSTRACT

Self-handicapping strategies are performance configuration actions or choices capable of increasing individuals' opportunity to externalize (or excuse) failure and to internalize (accept credit for) success. They involve creating or declaring obstacles, either real or fictitious, before accomplishing a given task in order to justify individuals' likely poor performance and to reduce their accountability for a likely failure. The aim of the current research is to present reflections about ten studies focused on investigating the use of self-handicapping strategies in Mathematics; the analyzed studies were selected in SciELO, PsycINFO and ERIC databases. Results have evidenced several factors contributing to the adoption of self-handicapping strategies in Mathematics, such as classroom environment and support provided to students by teachers. Moreover self-esteem and self-efficacy, which can affect one's option for using self-handicapping strategies, were key variables to help better understanding the adoption of these strategies

Keywords: Self-handicapping strategies, Mathematics, Self-regulated learning.

RESUMO

As estratégias autoprejudiciais são ações ou escolhas de configuração de desempenho que aumentam a oportunidade de externalizar (ou desculpar) o fracasso e de internalizar (aceitar o crédito por) o sucesso. Elas envolvem a criação ou declaração de obstáculos, reais ou fictícios, antes da realização de uma tarefa para justificar um possível mau desempenho, diminuindo a responsabilidade do indivíduo pelo fracasso. Este texto tem como objetivo apresentar algumas reflexões acerca de dez pesquisas, com foco no uso de estratégias autoprejudiciais em Matemática, resgatadas das bases de dados das plataformas SciELO, PsycINFO e ERIC. Os resultados revelaram que vários fatores contribuem para a adoção de estratégias autoprejudiciais em Matemática, como o ambiente de sala de aula e o apoio que o professor oferece a seus alunos. Além disso, a autoestima e a autoeficácia, considerados algo que afeta a escolha pelo uso de estratégias autoprejudiciais, foram variáveis-chave para maior compreensão da adoção dessas estratégias.

Palavras-chave: Estratégias autoprejudiciais, Matemática, Autorregulação da Aprendizagem.

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Recebido em 18/03/2022

Aprovado em 31/08/2022

INTRODUCTION

Psychology, Education and Mathematics Education researchers have been conducting studies in recent decades to help better understanding the factors leading to school failure and to propose strategies to solve, or at least mitigate, this issue (Ganda & Boruchovitch, 2018). Thus, students' self-regulated learning has been advocated by several scholars (Panadero & Alonso-Tapia, 2014; Zimmerman & Moylan, 2009) as an interesting alternative achieve it.

Overall, individuals' self-regulation ability involves skills mobilized by them to self-manage their actions in order to be successful in a given endeavor. Self-regulation can be defined as the process encompassing monitoring, controlling and reflecting about learning (Zimmerman & Schunk, 2011). It helps students to be more autonomous in the educational context and to take the reins of their learning process.

However, new skills and abilities must be developed by individuals throughout life in order to solve emerging issues; in other words, self-regulated learning is a continuous process. Some individuals make efforts by directing their personal resources to overcome obstacles generated by emerging issues, whereas others develop the so-called self-handicapping strategies to justify their failures. By deliberately choosing to fail, these individuals protect themselves from the judgments of others, since they attribute the cause of their failure to external agents they may not have control over (Ganda; Boruchovitch, 2015; Mena, 2019).

According to Berglas and Jones (1978), self-handicapping strategies are performance configuration actions or choices capable of increasing individuals' opportunity to externalize (or excuse) failure and to

internalize (accept credit for) success. Although there are small differences among concepts used by scholars to define self-handicapping strategies, according to Sameer Babu and Selvamari (2018), most authors agree that they involve creating obstacles that will be held accountable (excuse) for individuals' likely poor performance in order to rule out their own accountability for their failure.

Procrastination is a common feature observed in students who often use self-handicapping strategies at school. They play, they do not make enough effort, they study at the last minute and, whenever they are unsuccessful in a given proposed or ongoing task, they attribute the cause of their failure to the strategies adopted by them (Midgley, Arunkumar & Urdan, 1996). The aforementioned authors also claim that the use of self-handicapping strategies is one of dropout students' profiles. These students are often not sure of their skills; therefore, they may intentionally use strategies to lead others to assume that their failure resulted from lack of effort, rather than from their limitations.

In other words, the adoption of self-handicapping strategies indicates students' withdrawal from school. However, it is not a gradual, unconscious withdrawal from school and learning. It is a deliberate process.

According to Garcia *et al.* (1995 *apud* Midgley, Arunkumar & Urdan, 1996), students must have reached a certain cognitive ability to enable them to differentiate ability from effort, before they can adopt self-handicapping strategies. Therefore, these strategies are more often used by senior Elementary School students.

The literature on this topic presents two main types of self-handicapping strategies,

namely: behavioral and verbal. Behavioral strategies - which are called “acquired impediments” or “behavioral self-handicapping” in the international literature - can decrease individuals’ chances of success. Among them, one finds: lack of sleep, drug and alcohol consumption, choosing debilitating performance circumstances, and strategic effort reduction before and during tasks. Verbal strategies - which are often called “claimed impediments” or “self-reported handicapping” - take place when individuals declare harmful conditions, such as social anxiety, pre-test anxiety, physical and psychological symptoms, and health issues (Leondari & Gonida, 2007).

The main difference between these self-handicapping strategies is associated with the likely harm caused to those who use them. Verbal strategies are less harmful than the behavioral ones, since they do not necessarily reduce the likelihood of individuals’ successful performance. When students take drugs before a given test, this behavior will be used as justification for their poor performance, although drug using actually leads to body reactions capable of impairing individuals’ concentration. On the other hand, students who only declare to be anxious can use this declaration as justification for their poor performance, but it does not reduce their chances of success (Hirt, Deppe & Gordon, 1991 *apud* Leondari & Gonida, 2007). Self-handicapping strategies - regardless of the type - are adopted by individuals who are too concerned with the judgment of others about their performance (Ganda & Boruchovitch, 2016; Sheppard & Arkin, 1989). Adopting these strategies is a self-protection mechanism, since individuals are often judged by society based on their performance (Covington, 2000).

This self-protection mechanism can emerge as self-worth, at school. According to

Covington (1992 *apud* Midgley, Arunkumar & Urdan, 1996), self-worth is based on students’ struggle to escape, at all costs, the “unaccomplished” label; therefore, they always adopt defensive behaviors to be safe from bad judgments. If they do poorly on a given test, they can say they did not study at all or that they studied in the last minute. If they do well despite having procrastinated, they are acknowledged as very accomplished individuals.

However, the need to self-worth by adopting self-handicapping strategies can be a mechanism used to hide low self-esteem or weak self-efficacy beliefs. According to Ganda and Boruchovitch (2016), individuals who use self-handicapping strategies to protect themselves are concerned with the judgment of others about their performance. Consequently, individuals with low self-esteem are more likely to adopt self-handicapping strategies.

However, students presenting these features, who adopt self-handicapping strategies, are more likely to have poor academic performance, a fact that, consequently, leads to low self-esteem and weak self-efficacy beliefs. In other words, it is a feedback system, since low self-esteem leads to the use of self-handicapping strategies that, in their turn, lead to decreased self-esteem (Zucherman, Kieffer and Knee, 1998; Miranda, Boruchovitch and Ganda, 2017).

Self-handicapping strategies can be adopted in any environment. However, schools are excellent contexts to help investigating these strategies since students are constantly confronted with tasks and situations that put information about their skills on display (Sameer Babu & Selvamari 2018).

Although self-handicapping strategies are associated with causality attributions,

they differ from this construct due to a time-related issue. Causal attributions take place after individuals have known the outcome of their task; they are used to explain or to help better understanding a given outcome, whereas self-handicapping strategies are adopted before the task and they work as proactive attempt to manipulate others' perceptions about factors (causes) leading to certain performance outcomes (Midgley, Arunkumar & Urdan, 1996).

The adoption of self-handicapping strategies has negative effects on individuals' cognitive, motivational, affective and social aspects (Ganda & Boruchovitch, 2018). If one focuses on the school, mainly on Math classrooms and on dominant beliefs that highlight contents in this discipline as "very important", "essential for life", but "very difficult", "intended for few" (Torisu & Ferreira, 2009), it is possible saying that the use of self-handicapping strategies by students in the Mathematics field is a recurrent strategy. Therefore, it is important understanding results in studies focused on investigating the use of self-handicapping strategies in Mathematics, since it can provide information to enable teachers to identify this issue and to help their students.

The aim of the current study was to perform a literature review comprising studies focused on investigating the use of self-handicapping strategies in the Mathematics field.

M E T H O D O L O G Y

The scientific literature comprises several studies focused on investigating the use of self-handicapping strategies at school. However, the initial hypothesis of the current study was that this number was small, mainly in the Mathematics field. A search for studies on this topic was performed in 2021, in three

different databases – SciELO, PsycINFO and ERIC –, based on using the following keywords: "estratégias autoprejudiciais" and "matemática"; "self-handicapping" and "Mathematics"; and "avoidance strategies" and "Mathematics". Results of the conducted searches have corroborated the study hypothesis.

The search based on the aforementioned keywords did not find any study in the SciELO database. The PsycINFO database, in its turn, provided the following total number of studies, based on keywords such as "estratégias autoprejudiciais" and "matemática" = 0; "self-handicapping" and "Mathematics" = 0; "avoidance strategies" and "Mathematics" = 2. ERIC database provided 12 studies, based on these very same keywords. One of them had already been found in the search performed in PsycINFO database; thus, it was only taken into consideration once. Another study, although with a different title, presented the results of a survey that had already been accounted for. A third study was discarded for addressing self-handicapping strategies from a perspective different from the herein investigated one (i.e., Mathematics). Thus, in the end, ERIC database provided nine studies. Three of them explicitly presented keywords "self-handicapping" and "Mathematics" or "Math" in the title. Two presented the keyword "self-handicapping" in the title, but "Mathematics" only appeared in the abstract. The opposite happened in three studies, namely: the keyword "Mathematics" was explicit in the title, whereas "self-handicapping" only appeared in the abstract. One study presented keywords "avoidance strategies" and "Mathematics" in the title. One article only presented these keywords in the abstract. Thus, ten studies were analyzed, in total: one from PsycINFO database and nine from ERIC database.

The selected articles were carefully read. This procedure enabled grouping articles connected to each other - mainly when it comes to aims and results - into categories. In addition to include the studies found in the search conducted in the aforementioned databases, these categories also included other studies focused on investigating self-handicapping strategies whose discussions – although they did not focus on Mathematics - intertwined with discussions observed in articles comprising the current analysis corpus.

RESULTS AND DISCUSSIONS

Given the space limitations in the current study, it will not present details of each study. The table below presents general information about them.

Table 1 – General information about the selected studies

Name of the journal (J) and the event (E), and country of the journal or event	Study title, publication year
Annual Meeting of the American Educational Research Association (E) – United States	An Assessment of the Self-Protective Function of Self-Handicapping, 1993
Annual Meeting of the Southeastern Psychological	Science Anxiety as a Function of Personality, Gender Roles, Experience with Science, 2000

Association (E) – United States	
Annual Meeting of the American Educational Research Association (E) – United States	The Relationship between High School Mathematics Classroom Environment and Student Self-Handicapping, 2001
<i>Sex Roles: A Journal of Research</i> (J) – Switzerland	Blatant Stereotype Threat and Women's Math Performance: Self-Handicapping as a Strategic Means To Cope with Obtrusive Negative Performance Expectations, 2002
<i>Journal of Educational Psychology</i> (J) – United States	The Classroom Environment and Students' Reports of Avoidance Strategies in Mathematics: A Multimethod Study, 2002
<i>Elementary School Journal</i> (J) – United States	Teacher Discourse and Sixth Graders' Reported Affect and Achievement Behaviors in Two High-Mastery/High-Performance Mathematics Classrooms, 2002
<i>McGill Journal of Education</i> (J) – Canada	Associations between Students' Perceptions of Mathematics Classroom Environment and Self-Handicapping in Australian and Canadian High Schools, 2004
<i>British Journal of Educational Psychology</i> (J) – England	Predicting Academic Self-Handicapping in Different Age Groups: The Role of Personal Achievement Goals and Social Goals, 2007
<i>Community College Review</i>	Achievement Goal Orientations of Community College Mathematics Students and the

(J) – United States	Misalignment of Instructor’s Perceptions, 2012
<i>European Journal of Psychological Assessment</i> (J) – United States	Measurement of metacognitive knowledge of self, task, and strategies in mathematics, 2012

Source: Elaborated by the authors

Data presented in the table above have evidenced that seven of the ten studies were published in journals, whereas three were published in annals of events carried out in the Psychology field. The oldest study was published in 1993, whereas the most recent ones were published in 2012. Moreover, 2002 and 2012 (n = 2, each) were the years accounting for the largest number of publications. American journals were the ones mostly publishing studies. The United States was also the country where all three Psychology events mentioned in Table 1 took place.

The analyzed studies were divided into the following schooling levels: seven studies were conducted with students enrolled in classes whose level corresponded to basic education in Brazil, i.e., to elementary and high school; one study comprised higher education students; one study was conducted with a mixed group of participants, which comprised elementary and higher education students; and finally, one study did not provide information about its participants’ schooling level. Overall, data have evidenced that participants in the analyzed studies had already reached cognitive maturity to use self-handicapping strategies; thus, they were able to understand the difference between intelligence and effort, as mentioned by Garcia *et al.* (1995, *apud* Midgley, Arunkumar & Urda, 1996).

The research reading procedure enabled noticing aspects, mainly the ones associated

with research aims and results, which connected the analyzed studies to each other. Based on this perception, it was possible creating categories of analysis to group studies in the herein analyzed corpus, which are connected to each other and to other research focused on self-handicapping strategies. The herein developed categories of analysis are described below.

Affectivity and school environment –

This category grouped articles that associated the adoption of self-handicapping strategies with affective factors and school environment. According to Dorman, Adams and Ferguson (2001), Turner *et al.* (2002), Turner *et al.* (2003) and Dorman and Ferguson (2004), affective aspects associated with classroom environment have contributed to higher or lower adoption of self-handicapping strategies by students. Teachers were highlighted in this environment as the ones whose speeches and practices aimed at providing affective-motivational support to students were effective in avoiding the use of these strategies. These results corroborate - to some extent - results observed by Şahin and Çoban (2020), according to whom, the likelihood of using self-handicapping strategies decreases in positive school environments, where teachers’ behaviors are guided by the will to create a safe environment and where students can achieve success.

The focus of the current study lied on the Mathematics classroom. However, it is worth emphasizing that affective-motivational aspects have been considered by several researchers as fundamental tools to create favorable learning environments (Ribeiro, 2010; Eccius-Wellmann & Ibarra-Gonzalez, 2020). In the specific case of Mathematics, which is a discipline feared by many, the role played by affectivity in the teacher-student

relationship may be even more relevant to help mitigating the use of self-handicapping strategies.

Affectivity can be understood from several perspectives: attitudes and values, moral and ethical behavior, personal and social development, motivation, interest and attribution, tenderness, interrelation, empathy, constitution of subjectivity, feelings and emotions (Ribeiro, 2010). Thus, self-esteem, which is seen as a feeling observed in affective transactions taking place in the classroom, has impact on students' decision to use (or not) self-handicapping strategies. According to Lima (2016), Marini and Boruchovitch (2014) and Yavuzer (2015), students with low self-esteem tend to use self-handicapping strategies more often as instrument to protect their value as individuals. Therefore, actions aimed at increasing students' self-esteem are welcome and they should be implemented by everyone in the school, including teachers.

Another interesting conclusion about this discussion lies on the fact that the classroom is a very suitable space to investigate the incidence of self-handicapping strategies, since the activities developed in it make students constantly question their skills and conditions to successfully perform the proposed tasks (Sameer Babu; Selvamari, 2018).

Gender – Gender stands out in the discussion about the use of self-handicapping strategies in Mathematics, in this category. It happened in three of the ten selected studies. Based on one of these studies (Brownlow, Rogers & Jacobi, 2000), men were more likely to adopt self-handicapping strategies than women, as well as they tended to blame external agents for their poor performance. This outcome is in compliance with the one observed by Yu and McLellan (2019), who showed that boys adopted self-handicapping

strategies more often due to their stronger will to preserve their image in the academic and social domains.

The other two selected studies (Dorman & Ferguson, 2004; Leondari & Gonida, 2007) did not find significant gender-related difference in the use of these strategies.

Although Yavuzer (2015) did not focus on Mathematics, her gender-related results differed from the previous ones. The aforementioned author concluded that women were more likely to use self-handicapping strategies than men.

The incidence of different results about the use of self-handicapping strategies by men and women can be explained based on Midgley, Arunkumar and Urdan (2001). According to them, the use of self-handicapping strategies is linked to students' specific features, such as their overall motivations and attitudes towards learning; to the way they see and describe themselves as students; to the environment they are inserted in and to their self-beliefs. In other words, one should focus more on the idiosyncrasies of each individual, such as the environment it lives in, than on its gender, at the time to investigate the frequency of self-handicapping strategies' adoption.

The nationalities of students who participated in the aforementioned studies were taken into consideration to defend the ideas presented at the end of the previous paragraph. Dorman and Ferguson (2004) conducted a study with Canadian and Australian students. Leondari and Gonida (2007) investigated Greek students. Yu and McLellan (2019) investigated English students, whereas Yavuzer (2015) conducted a study with Turkish students. This variety of nationalities also presupposes a variety of cultures, values, beliefs, as well as ways of being and doing that affect individuals' behavior.

Based on the inconsistencies observed in the impact of gender on the use of self-handicapping strategies, and on the importance of this variable, future studies should more accurately investigate them, since data yet to be collected have important psychoeducational implications and may be better instrumented in favor of gender, with regards to the use of self-handicapping strategies.

Self-related constructs – Self-related constructs were considered important variables capable of influencing the adoption of self-handicapping strategies in Mathematics. Mesa (2012), for example, concluded that participants were interested in developing competencies, believed in their ability to handle challenging tasks in the Mathematics field, avoided using self-handicapping strategies, and showed positive mathematical self-concept. According to Efklides and Vlachopoulos (2012), there was correlation between self-concept measurements in Mathematics and mathematical skills. They also concluded that participants' awareness of their difficulties in Mathematics led to the adoption of avoidance strategies. Since self-concept is a set of beliefs and representations about oneself, which guide individuals' behavior and enable them to play different roles in their lives (Oliveira, 2000), and since the use of self-handicapping strategies can be seen as individuals' behavior towards tasks feared by them, the association observed between these constructs seems to be coherent.

Self-efficacy beliefs are another *construct* that was not directly mentioned in the analyzed studies, despite its relevance as variable capable of contributing to the adoption of self-handicapping strategies. These beliefs refer to individuals' judgments about their skills to perform tasks in a specific domain (Bandura, 1992; Bzuneck, 2001;

Pajares, 1996); they are less general than the self-concept.

Steinhauer *et al.* (1993), for example – which is the first on our list – used two mathematical tests among the adopted data collection instruments. Students who overestimated their skills took the tests and did not resort to self-handicapping strategies, although they chose the easiest questions. The option made for the easiest questions may be an indication that these students had less robust self-efficacy beliefs to solve the most difficult questions. This factor seems even more coherent if one takes into account that self-efficacy beliefs “specifically refer to peculiarities of the situation, [...] and actions to be implemented in a given task to be analyzed in detail” (Bzuneck, 2001, p. 117). On the other hand, students who underestimated their skills used self-handicapping strategies to prevent their low skills from coming to light. Therefore, although Steinhauer *et al.* (1993) did not address self-efficacy beliefs, we believe that this is an interesting reflection that should be the focus of future research. It is worth emphasizing that the literature in this field (Boruchovitch, 2014; Zimmerman & Schunk, 2011; Schunk & Greene, 2018) advocates that school and academic performance result from several cognitive, metacognitive, motivational (achievement goals, causality attributions, self-efficacy), affective and social factors.

FINAL CONSIDERATIONS

The adoption of self-handicapping strategies can have severe implications for students' academic achievement in all disciplines. Consequently, students can be affected in other aspects of their lives. In the specific case of Mathematics, which is a discipline many students have a hard time

succeeding in, using these strategies can be a way out for many students to protect themselves from the judgments of others about their skills. Therefore, it is important conducting studies focused on investigating the use of self-handicapping strategies in Mathematics.

However, despite the importance of this topic, the present article has shown that the number of studies focused on investigating the use of self-handicapping strategies in the Mathematics field remains small, even at international level. This issue gets even more unsettling if one takes into consideration the number of Brazilian studies about this topic.

The important role played by social environment as element capable of strongly influencing the use (or not) of self-handicapping strategies is another topic that should be addressed in future studies. Schools must be understood as spaces inserted in a larger social context, whose events have direct impact on students' behavior. Some of the herein reviewed studies have highlighted this importance.

There are important educational implications surrounding this discussion. Students are more likely to use self-handicapping strategies to protect themselves from a likely poor outcome in classrooms where teachers significantly use performance-oriented instructional practices (e.g., emphasis on students' grades, skills and social comparison), since such an outcome can affect their social image. "What might teachers and peers think about me if I do poorly?" is a question that "vulnerable" students may ask themselves. On the other hand, in the case of teachers whose practices are guided by actions focused on emphasizing affective aspects, such as valuing individual efforts - regardless of gender -, extrinsic motivation factors, as well as actions aimed at improving individuals' self-esteem and at

increasing self-efficacy beliefs, among others, can help students to adopt fewer avoidance strategies, as evidenced in some studies.

REFERENCES

- Bandura, A. (1992). Exercise of personal agency through the self-efficacy mechanism. In: Schwarzer, R. (Ed.). *Self-efficacy: Thought control of action* (pp. 3-38). Hemisphere Publishing Corp.
- Berglas, S. & Jones, E. E. (1978). Drug choice as a self-handicapping strategy in response to noncontingent success. *Journal of Personality and Social Psychology*, 36(4), 405-417.
- Boruchovitch, E. (2014). Autorregulação da aprendizagem: contribuições da Psicologia Educacional para a formação de professores. *Revista Quadrimestral da Associação Brasileira de Psicologia Escolar e Educacional*, 18(3), 401-409.
- Brownlow, S., Rogers, M.I. & Jacobi, T. (1997). Science Anxiety as a Function of Personality, Gender Roles, Experience with Science. *Sex-Roles*, 42, 139-141.
- Bzuneck, J. A. (2001). As crenças de auto-eficácia e o seu papel na motivação do aluno. In Boruchovitch, E. & Bzuneck, J. A. (Eds.), *A motivação do aluno: Contribuições da psicologia contemporânea* (pp. 116-133). Petrópolis, RJ: Vozes.
- Covington, M. V. (2000). Goal Theory, Motivation, and School Achievement: An Integrative Review. *Annual Review of Psychology*, 51, 171 – 200.
- Dorman, J. P., Adams, J. E. & Ferguson, J. M. (2001). The Relationship between High School Mathematics Classroom Environment and Student Self-Handicapping. *Annual Meeting of the American Educational Research Association*, Seattle.
- Dorman, J. P. & Ferguson, J. M. (2004).

- Associations between Students' Perceptions of Mathematics Classroom Environment and Self-Handicapping in Australian and Canadian High Schools. *McGill Journal of Education*, 39(1), 69-87.
- Eccius-Wellmann, C. & Ibarra-Gonzalez, K. P. (2020). Dependencia de la calificación de una evaluación diagnóstica en matemáticas con aspectos afectivos por la comisión de errores. *Bolema*, Rio Claro, 34(67), 544-563.
- Efklides, A. & Vlachopoulos, S. P. (2012). Measurement of metacognitive knowledge of self, task, and strategies in mathematics. *European Journal of Psychological Assessment*, 28(3), 227-239.
- Ganda, D. & Boruchovitch, E. (2018). Autorregulação da aprendizagem: principais conceitos e modelos teóricos. *Psicologia da Educação*, 46, 71-80.
- Ganda, D. R; Boruchovitch, E. (2015). Self-handicapping strategies for learning of preservice teachers. *Estudos de Psicologia*, 32(3), 417-425.
- Ganda, D. R. & Boruchovitch, E. (2016). As Atribuições de Causalidade e as Estratégias Autoprejudiciais de Alunos do Curso de *Pedagogia*. *Psico-USF*, 21(2), 331-340.
- Leondari, A. & Gonida, E (2007). Predicting academic self-handicapping in different age groups: the role of personal achievement goals and social goals. *British Journal of Educational Psychology*, 77, 595 - 611.
- Lima, C. M. (2016). *O uso de estratégias autoprejudiciais nos cursos de licenciatura*. Orientadora: Evely Boruchovitch. Trabalho de Conclusão de Curso (Graduação em Pedagogia) —Faculdade de Educação, Universidade Estadual de Campinas, Campinas.
- Mena, R. O. S. (2019). *Estudo das relações entre as estratégias de self-handicapping, autoestima, autoeficácia e o rendimento acadêmico*. Funchal: Universidade da Madeira (dissertação de mestrado).
- MESA, V. (2012). Achievement Goal Orientations of Community College Mathematics Students and the Misalignment of Instructor Perceptions. *Community College Review*, 40(1), 46 - 74.
- Midgley, C., Arunkumar, R. & Urda, T. C. (1996). If I don't well tomorrow, there's a reason: predictors of adolescents. Use of academic self-handicapping strategies. *Journal of Educational Psychology*, 88(3), 423 - 434.
- Midgley, C. & Urda, T. (2001). Academic self-handicapping and achievement goals: A further examination. *Contemporary Educational Psychology*, 26(1), 61-75.
- Miranda, L. C., Boruchovitch, E. & Ganda, D. R. (2017). Contributos para a validação da escala de estratégias autoprejudiciais em alunos no ensino secundário português. *Revista Amazônica*, 19(2), 8 - 22.
- Oliveira, G. C. (2000). Autoconceito do adolescente. In Sisto, F. F., Oliveira, G. C. & Oliveira, L. D. T. *Leituras de psicologia para formação de professores* (pp.58-69). Petrópolis, RJ: Vozes.
- Pajares, F. (1996). Self-efficacy beliefs in academic settings. *Review of Educational Research*, 66, 543-578.
- Panadero E., & Alonso-Tapia J. (2014). How do students self-regulate? Review of Zimmerman's cyclical model of self-regulated learning. *Anales de Psicologia*, 30, 450-462.
- Ribeiro, M. L. (2010). A afetividade na relação educativa. *Estud. Psico*, Campinas, 27(3), 403-412.
- Şahin, F.; Çoban, Ö. (2020). Effect of School Climate, Students 'Self-Handicapping Behaviors Effect of School Climate, Students 'Self-Handicapping Behaviors and Demographic

- Characteristics on Students' Achievement and Demographic Characteristics on Students' Achievement. *Inquiry in Education*, 12(2), 1 – 20. , 2020.
- Sammer Babu, M; & Selvamari, S. (2018). How does academic self-handicapping relate o achievement in mathematics? a small scale study among indian school chult. *Educational quest: an international journal of education and applied social Science*, 9(3), 233 – 238.
- Schunk, D. & Greene, J. A. (2018). *Handbook of self-regulation of learning and performance*. 2 ed. New York: Routledge.
- Sheppard, J.A. & Arkin, R.M. (1989). Determinants of self-handi-capping: task importannce and effects of preexisting handicaps of self-generated handicaps. *Personality and Social Psychology Bulletin*, 15(1), 101–112.
- Steinhauer, A. (1993). An Assessment of the Self-Protective Function of Self-Handicapping. *Biennial Meeting of the Society for Research in Child Development*, Nova Orleans, Março, 1993.
- Torisu, E. M. & Ferreira, A. C. (2009). A teoria social cognitiva e o ensino-aprendizagem da matemática: considerações sobre as crenças de autoeficácia matemática. *Ciências e Cognição*, 14(3), 168-177.
- Turner, J. C. et al. (2003). Teacher Discourse and Sixth Graders' Reported Affect and Achievement Behaviors in Two High-Mastery/High- Performance Mathematics Classrooms. *The Elementary School Journal*, 103(4), 357–382.
- Turner, J. C. et al. (2002). The classroom environment and students' reports of avoidance strategies in mathematics: A multimethod study. *Journal of Educational Psychology*, 94(1), 88–106.
- Yavuzer, Y. (2015). Investigating the Relationship between Self-Handicapping Tendencies, Self-Esteem and Cognitive Distortions. *Educational Sciences: Theory and Practice*, 15(4), 879-890.
- Yu, J. & McLellan, R. (2019). Beyond academic achievement goals: the important of social achievement in explaining gender differences in self-handicapping. *Learning and individual differences*, 69, 33 – 44.
- Zimmerman B. J., & Moylan A. R. (2009). Self-regulation: where metacognition and motivation intersect. In D. J. Hacker, J. Dunlosky & A. C. Graesser. *Handbook of Metacognition in Education* (pp. 299-315). Nova York, NY: Routledge.
- Zimmerman, B. & Schunk, D. (2011). *Handbbok of self-regulation of learning and performance*. Nova Iorque: Routledge.
- Zuckerman, M., Kieffer, S. C. & Knee, C. R. (1998). Consequences of self-handicapping: Effects on coping, academic performance, and adjustment. *Journal of Personality and Social Psychology*, 74(6), 1619–1628.