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Autoeficácia geral percebida e motivação para aprender em adolescentes do Ensino Médio

Tainá Rossi; Aline Trevisol; Daniela dos Santos-Nunes;
Naiana Dapieve-Patias; Jean Von Hohendorff

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Tainá Rossi*

IMED, Rio Grande del Sur, Brasil
ORCID: <https://orcid.org/0000-0002-4131-4247>

Aline Trevisol

IMED, Rio Grande del Sur, Brasil
ORCID: <https://orcid.org/0000-0002-7721-5144>

Daniela dos Santos-Nunes

IMED, Rio Grande del Sur, Brasil
ORCID: <https://orcid.org/0000-0002-9650-0469>

Naiana Dapieve-Patias

Universidade Federal de Santa Maria, Rio Grande del Sur, Brasil
ORCID: <https://orcid.org/0000-0001-9285-9602>

Jean Von Hohendorff

IMED, Rio Grande del Sur, Brasil
ORCID: <https://orcid.org/0000-0002-7414-5312>

Resumo

A autoeficácia diz respeito às crenças que cada indivíduo tem sobre suas capacidades de desempenho. Já a motivação para aprender é considerada um construto importante que estimula o indivíduo a realizar suas tarefas. Neste estudo, objetivou-se verificar a correlação entre autoeficácia e motivação intrínseca e extrínseca em adolescentes, investigando possíveis diferenças nas médias por gênero e faixas etárias distintas — adolescentes mais novos (de 14 a 16 anos) e mais velhos (de 17 a 19 anos). Participaram do estudo 296 adolescentes de 14 a 19 anos ($M = 16.03$; $DP = 0.96$), 57 % do gênero feminino, estudantes de Ensino Médio de escolas públicas (66 %) e privadas (34 %). Foram utilizadas uma ficha de dados sociodemográficos, a Escala de Autoeficácia Geral Percebida e a Escala de Motivação para Aprender. Análises descritivas, correlação de Pearson e teste t de Student para amostras independentes foram realizados. Houve correlação positiva entre autoeficácia e motivação intrínseca, e correlação negativa entre autoeficácia e motivação extrínseca, sendo que as meninas apresentaram médias mais altas na motivação intrínseca e os meninos médias mais altas na motivação extrínseca. Os adolescentes do gênero masculino obtiveram maiores médias de autoeficácia quando comparados com as meninas, e não houve diferença estatisticamente significativa quanto às faixas etárias dos adolescentes. Portanto, estabelecer estratégias nas escolas é fundamental, uma vez que a autoeficácia e a motivação podem interferir no processo de aprendizagem dos adolescentes.

Palavras-chave: autoeficácia; adolescentes; Ensino Médio; motivação intrínseca; motivação extrínseca.

* Naiana Dapieve Patias, Avenida Roraima, 1000, Prédio 74B, Departamento de Psicologia da Universidade Federal de Santa Maria (UFSM), CEP: 97105-900, Santa Maria-RS, Brasil. Telefone: (55 55) 3220-9231. naiana.patias@ufsm.br

Autoeficacia general percibida y motivación para aprender en adolescentes de educación media

Resumen

La autoeficacia se refiere a las creencias que cada individuo tiene acerca de sus propias capacidades para ejecutar una tarea, mientras que la motivación para aprender se considera un constructo de notoria importancia debido a que estimula al individuo a realizar sus tareas. Teniendo en cuenta estos dos conceptos, el objetivo de este estudio fue identificar la correlación entre la autoeficacia y la motivación intrínseca y extrínseca en adolescentes por medio de un análisis de las posibles diferencias en las medias por género y por franjas etarias —adolescentes de 14 a 16 años y de 17 a 19 años—. En total, participaron 296 adolescentes de 14 a 19 años ($M = 16.03$; $DE = .96$) —57 % de género femenino—, estudiantes de educación media de escuelas públicas (66 %) y privadas (34 %). Específicamente, se utilizó una ficha de datos sociodemográficos, la Escala de Autoeficacia General Percibida (EAGP) y la Escala de Motivación para Aprender (EMA-EM), instrumentos con los que se realizó un análisis de correlación de Pearson y el test t de Student para muestras independientes. Como resultados, se observó una correlación positiva entre la autoeficacia y la motivación intrínseca, una correlación negativa entre la autoeficacia y la motivación extrínseca, medias más altas para la motivación intrínseca en las mujeres y para la motivación extrínseca en los hombres, y medias más altas en autoeficacia en los hombres. No se encontraron diferencias estadísticamente significativas entre las franjas etarias. Con esto, resulta fundamental establecer estrategias para las escuelas que tengan en cuenta que la autoeficacia y la motivación pueden interferir en el proceso de aprendizaje de los adolescentes.

Palabras clave: autoeficacia, adolescentes, educación media, motivación intrínseca, motivación extrínseca.

Perceived overall self-efficacy and motivation to learn in high school teenagers

Abstract

Self-efficacy is the belief each one has about their performance abilities. Motivation to learn is considered an important construct that encourages individuals to perform their tasks. This study aimed to verify the correlation between self-efficacy and intrinsic and extrinsic motivation in teenagers, investigating potential differences related to gender and age - younger (14 to 16 years) and older (17 to 19 years) teenagers. 296 adolescents from 14 to 19 years old ($M=16.03$; $SD=0.96$) participated in the study, 57% female, 66% were students from public schools and 34% from private schools. The instruments used were: a sociodemographic data questionnaire, the Perceived General Self-Efficacy Scale and the Scale for Evaluation of Motivation to Learn for high school students. Descriptive analyses, Pearson correlation and Student's t-test for independent samples were performed. The results indicated a positive correlation between self-efficacy and intrinsic motivation, and a negative correlation between self-efficacy and extrinsic motivation. Girls showed higher averages in intrinsic motivation and boys higher averages in extrinsic motivation. Male participants achieve higher means of self-efficacy when compared to girls, and there was no statistically significant difference regarding age. The establishing of strategies in schools is important, once self-efficacy and motivation can interfere in the teenagers' learning process.

Key words: self-efficacy, teenagers, high school, intrinsic motivation, extrinsic motivation.

Introduction

Albert Bandura's cognitive social theory is considered a theory of both learning and motivation. Learning and motivation can be understood as a result of mutual interactions between personal, behavioral and environmental factors. The self-efficacy is a key component of motivation in social cognitive theory, and it is considered the prime reason for motivated action (Cook & Artino Jr., 2016).

Self-efficacy is the group of beliefs that one has about their ability to produce and perform. This component has been studied by Bandura in Cognitive Social Theory and is known as one of the most influential intrapersonal representatives of human behavior. Self-efficacy beliefs define people's feelings, thoughts, motivation, and behavior (Bandura, 1978), and can regulate how much effort individuals spend and how long they persist in the face of obstacles and aversive experiences. Therefore, the higher the perceived self-efficacy, the more

active the individual's efforts tend to be (Bandura, 1978; Rodrigues & Barrera, 2007).

The expectation of social self-efficacy is based on four sources of information: 1) personal experiences; 2) vicarious learning; 3) verbal persuasion and 4) physiological status. Personal experiences are expectations of effectiveness acquired through repeated success or failure, in which the negative failure impact is reduced or increased. Vicarious learning is the performance through watching the other's life experiences, successful or unsuccessful. Verbal persuasion is an attempt to influence human behavior through suggestion and leads the individual to believe or not that he/she can handle the situation. Finally, physiological status, caused by anxiety, stress, and fear, can lead one to judge itself with few abilities (Bandura, 1994; Bandura, 1978; Bzuneck, 2009; Nunes, 2008; Rodrigues & Barrera, 2007).

Self-efficacy begins to be improved and validated in childhood, especially at school, where knowledge and skills are acquired, allowing children to learn how to master their cognitive skills (Bandura, 1994; Bong & Skaalvik, 2003). Therefore, the offer of tools that allow the acquisition of skills in childhood it is essential to develop positive beliefs regarding their abilities (Medeiros, Loureiro, Linhares, & Maturano, 2003).

Traditionally, adolescence is a stage of many physical, psychological, and social changes. In this phase, usually the problems are highlighted, and the skills and principles that must be promoted at this age are overlooked (Cerqueira-Santos, Mello Filho, & Koller, 2014; Schoen-Ferreira, Aznar-Farias, & Silveiras, 2010). Positive self-efficacy is associated with academic skills and reduced emotional or behavioral problems. Thus, empowering healthy positive skills in adolescence can help boys and girls to develop properly in early adulthood (Franco & Rodrigues, 2018; Oliva, Ríos, Antolín, Parra, Hernando, & Pertegal, 2010).

Individuals with different self-efficacy beliefs show distinct levels of cognitive, social and emotional skills, which contribute to better self-perceptions and help achieve desired outcomes (Bong & Skaalvik, 2003). Positive self-efficacy beliefs can help in professional decision making, on the other way, negative beliefs can lead individuals to avoid certain activities because they do not feel capable (Bzuneck, 2009; Nunes, 2008). Besides, self-efficacy may influence students' motivation to learn, and strategies and methods of learning (Bzuneck, 2009).

Studies confirm that self-efficacy may change according to individuals' gender and age (Baptista, Alves, & Santos, 2008; Lopes & Teixeira, 2012; Martins, Coimbra, Fontaine, & Barrera, 2018; Matias, Rolim, Kretzer, Schmoelz, & Vasconcellos, 2009; Mendes, Nascimento, & Costa-Lobo,

2017; Silva, Beltrame, Viana, Capistrano, & Oliveira, 2014). Brazilian studies have found higher averages in overall perceived self-efficacy in boys when compared to girls (Lopes & Teixeira, 2012; Matias et al., 2009; Silva et al., 2014). On the other hand, some researches did not identify differences in the levels of general self-efficacy concerning gender (Baptista et al., 2008; Sbicigo, Teixeira, Dias, & Dell'Aglío, 2012).

In general, the results found in the literature suggest that there is no agreement concerning the relationship between gender and self-efficacy. The difference in the results may be associated with the use of different instruments or to the different contexts in which the research was conducted. Surveys also disagree regarding the influence of age. Two Brazilian studies observed no statistically significant differences between age and self-efficacy in public school students (Lopes & Teixeira, 2012) and children aged seven to 10 years (Silva et al., 2014).

Different definitions and theories regarding motivation can be found in the literature. Motivation is generally defined as a process focused on achieving one or more goals, which involves both the start and maintenance of the required activity, to finally achieve the target (Cook & Artino Jr., 2016). To Cook and Artino Jr. (2016) there are four recurring themes among the different contemporary theories of motivation to learn (i.e., Expectation-Value Theory, Self-Determination Theory, Social-Cognitive Theory, Achievement Goal Theory, and Self-Determination Theory): (1) beliefs about competence - related to the question "Can I do this?"; (2) value related to what will be achieved from the learning task - "Do I want to do this?" and "What will happen (good or bad) if I do this?"; (3) assignment - the result was achieved from external or internal causes and (4) social-cognitive interactions, that is, motivation implies interactions between an individual and a broader social context.

Intrinsic motivation drives people to act only to satisfy their curiosity and/or desire to master the content or activity. Thus, the pleasure of studying, meeting colleagues, and sharing experiences are related to intrinsic motivation. Extrinsic motivation is driven by social purposes, and it is connected to the excuses used by students to study: the rewards, the fear of punishment, or only to take the tests (Cook & Artino Jr., 2016; Ribeiro, Prasniski, Gallon, & Santos, 2016).

After this explanation, and considering the importance of self-efficacy and motivation to learn, the present study aimed to examine the potential correlation between perceived general self-efficacy and intrinsic and extrinsic motivation in high school students from southern Brazil.

Also, to investigate whether there are differences in averages between male and female teenagers and between age groups: younger (14 to 16 years) and older (17 to 19 years) adolescents.

Method

This is a quantitative, cross-sectional, correlational and comparative study (Breakwell, Hammond, Fife-Schaw, & Smith, 2010).

Participants

Public and private schools were contacted through the researchers' contact network. Thus, it is a convenience and non-probabilistic sample. 296 high school students from public (66%) and private (34%) schools participated in the study. Age ranged from 14 to 19 years ($M = 16.03$; $SD = 0.96$) and 57% were female. Most of the teenagers attended the second year (48%), 29% were students of the third year and 23% were in the first year of high school. Only high school students with a maximum age of 19 years were included in the study. School inclusion students, previously indicated by the teachers of each class, did not participate in the study.

Instruments

Sociodemographic data questionnaire. Built for this study, gathered information regarding the participant's gender, age, and education.

Perceived General Self-Efficacy Scale (EAGP) (Sbicigo et al., 2012, translated and adapted from Schwarzer & Jerusalem, 1995). Aims to assess the perception of self-efficacy, that is, the individual's belief about their abilities (cognitive, motivational, affective, and behavioral), to achieve a goal, to deal with a situation, or to perform a task. It is a self-report instrument, with 10 items answered in Likert format (1 - not true about me / 4 - it's totally true about me). The final score is the sum of the value of each item, and there is no cutoff point. The general scale achieved a Cronbach's alpha of 0.85 in a study with adolescents, aged 12 to 18 years, from public schools in the south of Brazil (Sbicigo et al., 2012). In the current study, Cronbach's alpha was 0.84, indicating evidence of validity and reliability to assess self-efficacy in teenagers.

Scale for Evaluation of Motivation to Learn for high school students (Neves & Boruchovitch, 2007). Instrument with 34 statements answered in a three-point Likert scale (never, sometimes and always), 17 statements evaluate Intrinsic Motivation (MI) ($\alpha = 0.86$) and another 17 assess

Extrinsic Motivation (ME) ($\alpha = 0.80$). The overall motivation score is the sum of all items. The score of each type of motivation is the sum of the MI and ME items separately. In the present study, Cronbach's alpha values were: 0.65 for the total scale, 0.76 for extrinsic motivation and 0.85 for intrinsic motivation.

Procedures

This study is part of a larger survey entitled "What Motivates Adolescents to Learn and Stay in School," which was approved by the Ethical Research Committee of a private college under the number CAAE 56453116.4.0000.531. The research objectives and the logistics of data collection were presented to the invited schools to obtain their consent.

The schools that agreed to participate in the study signed an Institutional Consent Form. Then, dates and times were scheduled to invite students to participate. During the meeting with the students, the project objectives and voluntary participation were highlighted. Those who accepted, received two copies of the Free and Informed Consent (TCLE) for the guardian signature and the Free and Informed Approval for adolescent signature. Information about anonymity and the confidentiality of the information collected, according to Resolutions 466/2012 (Brazil, 2012) and 510/2016 (Brazil, 2016), were also clarified to the participants.

Before that, the research team returned to the schools to pick up the signed documents and to set the data collection dates, according to the students' free time and school's time and space availability. The collection happened in the classrooms of the respective schools, collectively, with an average duration of 30 minutes.

Data analysis

The Kolmogorov-Smirnov test was applied, considering p values > 0.05 , to verify the normality of the data. Parametric analyses were performed considering the normal distribution of self-efficacy and motivation to learn scores. Initially, descriptive (i.e., means, standard deviations) and Pearson correlation coefficients were performed using the Statistical Package for the Social Sciences (SPSS) version 22.0. Pearson's correlation analysis verified the possible correlation between perceived overall self-efficacy and intrinsic and extrinsic motivation to learn. Then, age was computed in groups (i.e., 14 to 16 years, younger adolescents and 17 to 19 years, older adolescents), considering the median.

After computing the variables, Student's t -test for independent samples was performed to verify possible differences between general self-efficacy and intrinsic and extrinsic motivation considering age and gender. Effect size

analysis (Cohen's d) was performed between groups that showed statistically significant differences.

Results

The results indicated a weak and positive correlation between perceived general self-efficacy and intrinsic motivation ($r = 0.25$; $p < 0.001$) and a weak and negative correlation between perceived general self-efficacy and extrinsic motivation ($r = -0.13$; $p = 0.03$). Male adolescents had higher self-efficacy comparing to girls, with effect size $d = 0.40$. No statistically significant difference was found between younger and older adolescents. All results are presented in Table 1.

The results from motivation to learn, considering gender were: girls showed higher intrinsic motivation (effect size $d = -0.39$) and boys achieved higher extrinsic motivation (effect size $d = 0.26$) when compared to the other group. There was no significant difference between age groups in motivation to learn. The results are presented in Table 2.

Discussion

The main purpose of this study was to verify if there is a correlation between self-efficacy and motivation to learn (intrinsic and extrinsic) in high school teenagers. Besides,

to identify potential differences in the average of the constructs among males and females and between different age groups. The results show a correlation between intrinsic motivation and self-efficacy and among extrinsic motivation and self-efficacy. Gender influenced both variables, and there was no statistically significant difference when considering the differences in age.

In this study, adolescents with higher self-efficacy had higher intrinsic motivation, while those with low self-efficacy showed higher extrinsic motivation. According to the literature, people with a bigger sense of self-efficacy have more optimistic beliefs and tend to be more motivated to achieve success in their actions; thus, they can see challenges positively (Rodrigues & Barrera, 2007). A study conducted in São Paulo evaluated elementary school students from public schools. The results corroborate the present study, verifying the same association between self-efficacy and extrinsic and intrinsic motivation (Martinelli & Sassi, 2010). In general, self-efficacy is important for achieving greater intrinsic motivation for learning, which is essential for academic success, because it does not depend on external factors to step in.

The boys in this research showed higher self-efficacy when compared to girls. This result corroborates previous research that obtained the same findings (Baptista et al., 2008; Lopes & Teixeira, 2012; Matias et al., 2009). An international survey, for example, evaluated 675 adolescents, aged between 13-19 years, and found that boys had higher

Table 1.

Total Perceived General Self-Efficacy Scale score according to gender and age

		M	SD	<i>t</i>	<i>gl</i>	<i>P</i>	<i>d</i>
Gender	Male	31.63	4.64	3.403	278	< .01	.40
	Female	29.69	4.99				
Age	Younger	30.63	5.00	0.569	163	.57	-
	Older	30.27	4.77				

Table 2.

Intrinsic and extrinsic motivation according to gender and age group

		M	SD	<i>t</i>	<i>gl</i>	P	d
Intrinsic Motivation							
Gender	Male	37.93	5.66	-3.27	292	.001	-.39
	Female	40.07	5.45				
Age	Younger	39.37	5.74	1.03	292	.30	-
	Older	38.62	5.34				
Extrinsic Motivation							
Gender	Male	29.72	4.71	2.18	292	.03	.26
	Female	28.51	4.63				
Age	Younger	29.13	4.72	0.54	290	.59	-
	Older	28.80	4.64				

self-efficacy. The authors believe that girls, no matter how old, feel the emotions more intensely than boys (Bacchini & Magliulo, 2003).

A possible explanation for this difference may be related to features traditionally attributed to both genders. Girls are educated to be passive and subservient (De Souza, Baldwin, & da Rosa, 2000), which may facilitate a self-perception associated with the inability to perform many activities. On the other hand, boys are trained to be active, energetic and more controlling person (Minayo, 2005), which increases the chances of perceiving themselves as powerful and capable of performing any activity. Therefore, it is possible to infer that the role attributed to each gender can influence the perception of self-efficacy.

Women often attribute their achievements to luck, chance, or others (Baptista et al., 2008). Besides that, they tend to feel emotions more intensely, to be less optimistic (Bacchini & Magliulo, 2003) and more vulnerable to some psychological problems (Castro, Ponciano, & Pinto, 2010). An important aspect related to adolescence and that may be associated with girls' self-efficacy, mostly, is body image (Bacchini & Magliulo, 2003). This aspect may contribute to low self-efficacy in girls, since puberty and the consequent body changes may promote dissatisfaction with their own body.

The findings of this study also indicated that girls have higher intrinsic motivation, while boys have higher extrinsic motivation. The results are consistent with another study which found that females had lower failure rates than males and higher intrinsic motivation. In contrast, the boys presented higher extrinsic motivation, which led them to believe that their poor school performance could be explained by their bad relationship with teachers, or by other factors not associated with themselves (Paiva & Boruchovitch, 2010). Furthermore, according to Cook and Artino Jr. (2016), contemporary motivation theories indicate that the construct cannot be fully explained exclusively as a singular phenomenon, because it requires interactions between the individual and their social context.

Considering the existing dialogue between individual and contextual factors, the relation found between motivation and gender can also be understood from social and gender point of view. Dedication to studying and activities that require concentration tend to be considered as female activities. Thereby, girls could have more intrinsic motivation due to the stimulus to study, received from family and society.

The low motivation to learn in teenagers may be related to learning difficulties. One study conducted with elementary students – 275 with learning disabilities and 275 without difficulties – found that learning disabilities are not always related to poor or deficient performance,

but lack of motivation and interest in learning. The student can avoid engaging in complex activities because he/she is afraid of revealing a low competence or learning disability, although it is the lack of motivation and interest that leads to this escape response. This is important because it demonstrates that motivation is associated with the belief in learning (Pereira, 2015).

In this study, no significant correlations were found between age and self-efficacy and motivation variables. The literature points out divergence regarding the influence of age on self-efficacy. Ortiz and Gándara (2002) believe that there are differences in self-efficacy when considering age because it tends to decrease when children reach puberty. This is because adolescence is a stage of intense transformations that happen both in the body, in the academic and social domains.

Therefore, there is a tendency for self-efficacy to decrease with increasing age. An explanatory hypothesis for the lack of relationship between these variables in the present study may be the age groups investigated (14 to 16 years and 17 to 19 years). Although the range between the minimum age of the first group and the maximum of another is five years, the upper limit of the first and the lower limit of the second group are close. Such closeness may have exerted influence on age-related outcomes.

In the present sample, no statistically significant differences were found between age and motivation to learn. This result was also found by Pansera, Valentini, Souza, and Berleze (2016), in a sample of 142 children, aged 9 and 10 years. However, in another study, with 120 elementary students, aged between 8 and 14 years old, the results indicated higher levels of intrinsic motivation in younger children compared to older ones (Paiva & Boruchovitch, 2010). Overall, it is necessary to investigate more about the influence of age, because there is no consensus in the literature.

In concluding this study it was possible to understand that the perceived overall self-efficacy and intrinsic motivation to learn are positively associated. This is a consistent result. Analyzing the concept of perceived overall self-efficacy (i.e., beliefs each person has about his/her performance and making skills; Bandura, 1978) and of intrinsic motivation (i.e., pleasure in studying, meeting colleagues, and sharing experiences; Ribeiro et al., 2016), it is easy to recognize that both concern internal factors.

The opposite relationship was found between perceived overall self-efficacy and extrinsic motivation. The performance of individuals with low self-efficacy seems to be linked to the environmental and not to internal variables. This result is also coherent. The perceived low overall self-efficacy - intrapersonal component of behavior - could

guide the individual to seek environmental rewards. This situation may be inappropriate in the adolescence context because the teenager should enjoy studying, once he/she will not always get rewards or punishments.

Boys in this sample had higher self-efficacy than girls. These results indicate that it is necessary to plan interventions to increase girls' self-efficacy. Such interventions should not only focus on singular experiences but the context. Conceptions about gender can influence girls' perception of self-efficacy, thus, discussions about gender roles, especially about that one assign to the female gender, should be part of the school routine.

The results also indicated that girls had higher intrinsic motivation and boys have higher extrinsic motivation, which may indicate that girls find more pleasure in studying. No differences were noticed in motivation by age group, indicating that students have the same level of motivation in adolescence, regardless of the age group. However, given the lack of consensus on the results of age studies, further research should be conducted.

The findings of this study should be applied with caution, given the limitations. In data collection, only self-report measures were used and the adolescent was the single informant. Future studies may include multiple informants (e.g. parents and/or teachers) and can also assess additional teenagers' features, such as school performance, school failure, symptoms of depression, anxiety and stress, and social support network. Institutional characteristics, such as infrastructure, available teaching resources, school climate, fulltime or part-time shifts, etc. can be considered as well. Additionally, this researches may apply more advanced techniques of data analysis, such as multiple linear regression.

The sample of this study came from the same State of Brazil and reflects the particularities of this context, which can make it difficult to generalize results. Besides that, the correlation between the evaluated variables may have been found due to the sample size. Future studies with larger, more diverse, and wide age samples may be conducted to deepen knowledge about self-efficacy and motivation to learn. It is necessary to invest in strategies to enhance students' self-efficacy and intrinsic motivation, considering the primary role of education for the future of children and adolescents. The current overview of elementary and high education in Brazil reveals the existence of an educational pattern, an evaluation system focused on external rewards (i.e. grades) and unaware of individual differences and interests. In this scenario, low levels of self-efficacy and intrinsic motivation can gain space, making students' development and learning more difficult.

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