Autoeficacia y vivencias académicas en estudiantes universitarios

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Resumen

El objetivo de este estudio fue establecer las relaciones existentes entre las dimensiones del constructo de autoeficacia en conductas académicas y vivencias académicas de estudiantes de pregrado de diversas universidades chilenas. Con un muestreo de tipo no probabilístico, participaron 405 estudiantes de psicología, ingeniería y pedagogía. Se aplicó la escala de autoeficacia en conductas académicas y el cuestionario de vivencias académicas, y tras un análisis de correlaciones y de correlaciones canónicas entre las variables, se encontraron relaciones directas entre todas las dimensiones de autoeficacia en conductas académicas y vivencias académicas, excepto en las de autoeficacia académica y dificultades personales, en donde la relación fue inversa. Los hallazgos concuerdan con estudios previos en lo que se refiere a las correlaciones entre variables; y se encontraron tres dimensiones canónicas que describen a los estudiantes según su carrera universitaria: autoeficacia real vs. vivencia académica basada en estrategia de estudios; estilo de comunicación y excelencia vs. estilo personal e interpersonal; y atención general vs. valoración de la carrera y de la institución.

Palabras clave: Autoeficacia académica, vivencias académicas, adaptación universitaria.

Self-efficacy and academic experiences with university students

Abstract

The aim of this study was to analyze the relationship between the dimensions of the self-efficacy construct in academic behaviors and academic experiences with undergraduate students. 405 students of Psychology, Engineering and Pedagogy from various Chilean universities participated. The sampling was non probabilistic. The Self-efficacy Scale in Academic Behaviors and the Academic Experiences Questionnaire were applied. Analysis of correlations between variables and canonical correlations were performed. Direct relationships were found between the dimensions of self-efficacy in academic behaviors and academic experiences, except in academic self-efficacy and personal difficulties, where an inverse relationship was found. The findings were consistent with previous studies which refer to correlations between variables. There were three canonical dimensions describing students according to their university studies: real self-efficacy vs. academic experience based on study strategy; communication style and excellence vs. personal and interpersonal style, and general attention vs.

Key words: academic self-efficacy, academic experiences, university adaptation.

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Autoeficácia e vivências acadêmicas em estudantes universitários

Resumo

O objetivo deste estudo foi estabelecer as relações existentes entre as dimensões do construto de autoeficácia em comportamentos acadêmicos e vivências acadêmicas de estudantes da graduação de diversas universidades chilenas. Com uma amostra de tipo não probabilística, participaram 405 estudantes de psicologia, engenharia e pedagogia. Aplicaram-se a escala de autoeficácia em comportamentos acadêmicos e o questionário de vivências acadêmicas; após uma análise de correlações e de correlações canônicas entre as variáveis, constataram-se relações diretas entre todas as dimensões de autoeficácia em comportamentos acadêmicos, exceto nas de autoeficácia acadêmica e dificuldades pessoais, em que a relação foi inversa. Os achados concordam com estudos anteriores no que se refere às correlações entre variáveis; constataram-se três dimensões canônicas que descrevem os estudantes segundo seu curso universitário: autoeficácia real versus vivência acadêmica baseada em estratégia de estudos; estilo de comunicação e excelência versus estilo pessoal e interpessoal; atendimento geral versus valorização do curso e da instituição.

Palavras-chave: autoeficácia acadêmica, vivências acadêmicas, adaptação universitária.

INTRODUCTION

Dropout, adaptation and completion of the studies are interesting topics for universities these days, due to the big impact which all these matters have on the organization and the resource distribution for these institutions. This explains the constant motivation for understanding the factors that facilitate or complicate the completion of university studies. During this process, it is fundamental to obtain proper results to move forward in the subjects of the study program and in such way to complete the higher education process.

Admission to the university is a critical stage for the student in his development process, since he is required to autonomously manage his time, critical thinking and skills which are part of the requirements that society demands from professionals. In other words, entering higher education implies a process of transition and incorporation into a new social and academic world that can lead students to experience difficulties or even abandon their studies (Medrano, Galleno, Galera & Del Valle, 2010; Romero & Pérez, 2009). For this reason, adequate facing of academic life requires carrying out behaviors that allow achieving a high academic performance and having the conviction that one's own abilities and competences are sufficient to successfully complete the university studies.

Adaptation to university

Prior to entering tertiary education, students must develop various skills that facilitate their incorporation and proper functioning within the new level achieved. In addition, they have to face a series of complex tasks or demands, whose implementation implies the development of their identity and, in turn, an adequate adaptation to the context. (Almeida, Ferreira, & Soares, 1999). On the other hand, a young university student must face numerous and complex academic and institutional challenges, teaching and evaluation systems, vocational decision making, use of institutional resources in general, and patterns of interpersonal relations with family, teachers and peers (Righi, Jorge & Dos Santos, 2006).

For all the above reasons, adapting to university life is not an easy process. In fact, it is very common during the first three semesters in university to observe a high rate of dropout. This is associated with different factors, such as economical, disorientation related to the studies, low academic performance, teenage pregnancy, family problems and students' perceptions and analysis about university life (Londoño, 2009; Abello et al., 2012).

Dimensions of adaptation to university

Adaptation to university life can be understood as the continuity and completion of studies and comprises three important dimensions: (Almeida, Santos, Dias, Botelho & Ramalho, 1998; Bean & Eaton, 2002; Merdirger, Hines, Lemon & Wyatt, 2005; Abello et al., 2012; Almeida et al., 1999).

Personal dimension: Involves appropriate levels of discipline, planning, use of time, tolerance to frustrations and perseverance. University adaptation is associated with the student's confidence in their own abilities, attainment of objectives to pursue in their academic work, positive temperament and adequate use of their own personal resources.

Interpersonal dimension: Includes relationships with other people, understood as cognitive processes, behaviors and feelings experienced by the student in an academic context. These aspects can be positive if they are associated with a sense of belonging, recognition and well-being.

Contextual dimension: Involves communicative aspects that emerge from the new forms of educational relations and

from the members of the institution in general. Also includes the relationship of the student with the university not only as a merely teaching institution, but as a comprehensive experience that provides both academic and recreational spaces which occasionally involve physical health, mental health and spirituals services.

Dropout of university studies

The dropout or desertion of the educational system takes place when for three consecutive periods, the student voluntary quits their studies and all academic activity scheduled by the institution where they have been enrolled (Bean & Eaton, 2002).

The students that dropout their studies, compared to those who complete them, have low grades, show less motivation, and believe that they don't have the abilities to be at university. By contrast, the students that continue studying, experience a high level of satisfaction with different aspects of their formative process such as motivation, performance and academic fulfillment (Álvarez, Cabrera, González & Bethencourt, 2006).

Self-efficacy

In the educational psychology area, important research progress has been produced around the self-efficacy construct, which has contributed to the improvement of teaching practices (Blanco, Martínez, Zueck & Gastélum, 2011; Ornelas, Blanco, Gastélum & Chávez, 2012). Self-efficacy has been defined as the confidence a person has on their abilities to do the suggested activities in a specific situation. It is a factor associated with cognitive skills, responsibility with academic tasks, and educational ambitions of the family and of the student. It includes the judgments the person makes about their own ability related with specific tasks and the situations involved in them (Zimmerman & Kitsantas, 2005; Blanco et al., 2011).

The perception that people have about their own efficacy (self-efficacy) is a critical variable that has an impact both on the strategies and motivations involved in the achievement of a particular objective as on the emotional response to difficult situations (Blanco et al., 2011; Álvarez, Santiviago, López, Dare & Rubio, 2014; Prieto, 2001). Self-efficacy also represents a basic factor for the achievement of activities or decision making that students face throughout their life. This is part of the self-concept and allows the acquisition of knowledge about one-self and the external world as well as the development of skills (Bandura, 1997; Pastorelli et al., 2001).

Perceived self-efficacy also has indirect impact on behavior, since it affects people's ambitions, the level of commitment to their goals, the emotions they experience when facing challenging situations, and the perception they have about enablers and obstacles for the achievement of their goals, among other relevant aspects (Bandura, 1997; 2001; Zimmerman & Kitsantas, 2005; Blanco et al., 2011).

Academic self-efficacy

Academic self-efficacy consists of the beliefs that people have about their abilities to learn or perform behaviors in previously established levels of the academic context. It is the evaluation a student does about their abilities to accomplish their own academic activities according to three factors: attention, communication and excellence (Blanco et al., 2011).

Attention: It relates to focusing on the academic activities. It is a cognitive process that takes place when a person, instead of simply seeing and hearing superficially what is happening around him or what he should do, actively starts to focus on these aspects or on parts of them. The university students who perceive their difficulties to pay attention in the academic area have less probabilities of succeeding in their studies, specifically showing low levels of academic adjustment (Fuenmayor & Villasmil, 2008; Norwalk, Norvilitis & MacLean, 09).

Communication: It refers to the exchange of data and dissemination of information with academic purposes on the part of the students. It is related to interaction and reciprocal influence. This involves the application of cognitive, meta-cognitive, socio-cultural, psycholinguistic and psycho-educational abilities and skills that take part in the teaching and learning processes (Galindo, 2005; Valdivieso, Carbonero & Martín 2013).

Excellence: It refers to adherence to the norms and standards of the academic context in order to pursue a high quality performance at university. It requires certain skills or competences to achieve it, such as planning, setting objectives and goals, and developing the strategies needed to achieve them (Herrera, 2013).

In the context of university education, the student's selfefficacy beliefs are better indicators of permanence than the majority of generalized measurements about academic motivation. Also, it has been proven that students who have a high level of general self-efficacy are more capable of reaching academic success, self-regulation and persistence in the face of difficulties. Finally, academic self-efficacy is presented as an internal feature associated with psychological well-being that arises as a protective or favorable element for the continuity of the student in the university (Komarraju, & Nadler, 2013; Salanova, Martínez, Bresó, Llorens & Grau, 2005). Academic self-efficacy has a high influence on freshmen university students. In addition, it has been studied that a high level of self-efficacy is associated with low levels of exams anxiety. This variable, along with the perceived academic climate are related to academic performance of the students. Additionally, academic self-efficacy has a positive effect on the perceived academic climate and the students' academic performance (Kirton, 2000; Nie, Lau & Liau, 2011; Abd-Elmotaleb & Saha, 2013).

Academic experiences

They have been defined as the opinions and feelings that the student has regarding daily experiences in the context of university education. This concept is integrated by the following variables (Almeida et al., 1999):

Personal difficulties: distress, disorientation, loneliness, physical weakness, pessimism, emotional instability, sadness and, by contrast, personal development and self-confidence.

Interpersonal relationships: relationships with university classmates of both genders, or friendships with deeper emotional involvement.

Studies assessment: Identification with the chosen studies, development of commitment to those studies, adaptation and perspectives of professional development, according to skills and abilities.

Study strategies: abilities to study, work routines, time management, obtained performance, use of the library and other resources for learning.

Institutional assessment: interest for the university, desire to continue with the studies, assessment of the institutional facilities and supporting services that the university offers.

Delving into the knowledge of the students' individual features such as the dimensions of academic experiences and self-efficacy in academic behaviors would help to achieve a better understanding of the functioning of the personal academic process and could lead to justify the institutional actions to improve the students' well-being, continuity of their studies and their academic performance.

The evidence related to the academic self-efficacy variable associated with other academic variables such as academic performance, motivation and continuity, has allowed moving forward in the knowledge of elements that benefit the students in their educational context. However, a void in relation to investigations studying the relationship between perceived self-efficacy in university education context and academic experiences still remains.

To summarize, the adaptation process to the academic life involves facing numerous and complex challenges which are translated into academic, institutional aspects, educational systems, decision-making processes, advantages of resources, and patterns of interpersonal relationships. In this context, academic self-efficacy is conceived as a cognitive mediator of competition, performance and academic success.

The aim of this paper is to determine and analyze the relationship between academic self-efficacy and academic experiences in Psychology, Engineering and Education students of Chilean universities.

METHOD

Type of study

The study corresponds to a quantitative approach. It is cross-sectional, correlational, of descriptive type.

Participants

The sample included 405 students (51% women y 49% men) of four Southern Chilean universities, specifically in the city of Concepción, whose ages ranged between 18 and 29 years old, with an average of 21.7 years (SD=1,89). The participants had completed at least three academic semesters, which is enough time to enable the report of different aspects of their own adaptation to university life. The sample was non-probabilistic, specifically a quota sample. The students belonged to the following courses: Engineering 6,4% (n=26), Natural Sciences Pedagogy 5,4% (n=22), Special Education Pedagogy 8,4% (n= 34), Physical Education and Sport Pedagogy 30,9% (n=125), Spanish Pedagogy 6,2% (n= 25), History Pedagogy 7,9% (n=32), Psychology 34.8% (n=141). In general, participants reported an approximate average grade score of 5,2 (S.D.= (2.33) on a scale from 1 to 7.

Instruments

Self-Efficacy in Academic Behavior Scale (EACA)

Academic self-efficacy was measured with the *Self-Efficacy in Academic Behavior Scale* (EACA, for its Spanish acronym). It is composed of three elements: *communication, attention and excellence* (Blanco et al., 2011). It is a Likert survey of 13 items related to academic behaviors, where the respondents indicate the frequency with which they currently make an action on a scale of 0 to 5, where 0 is a zero frequency of the behavior and 5 is the ideal frequency, with which the behavior is performed.

The results of Cronbach's alpha are above 0,70 (Blanco, Martínez, Ornelas, Flores & Peinado, 2011). Adequate adjustment values, reliability and validity were observed and validated. Also, an adequate internal consistency for the three elements was found (Guerrero, Pérez, Contreras &Vega, 2013; Peinado, Chávez, Viciana & Rivero, 2012; Ornelas et al., 2012).

This measurement method, the Self-Efficacy in Academic Behavior - EACA, explores two different situations: actual situation and ideal situation, in order to guide the participants to perform the differentiation of their self-efficacy perception in both situations. This will help to get acquainted with the current self-efficacy behaviors, which corresponds to the construct of interest in this investigation.

Item examples:

For the real situation, the slogan is: "currently, with what frequency am I capable of..." and for the ideal situation the slogan is: "with what frequency would I wish..."

And the items would be presented with complementary sentences like:

Perform the tasks that are assigned to me

Pay attention when the teacher answers a question to one of my classmates...

Express my ideas clearly...

Academic Experiences Questionnaire (QVA-R)

It consists of a Likert type survey, composed of 60 items intended to the dimensions which compose the academic experiences construct. The items are distributed in 5 dimensions: 1) Personal Difficulties, 2) Interpersonal Relationships, 3) Studies assessment, 4) Study Strategies, 5) Institutional assessment (Almeida et al., 1999).

The questionnaire was validated with Chilean population, showing internal consistency with appropriate levels and values that range between 0,85 and 0,68 (Abello et al., 2012).

Items examples:

- Recently, I have been confused and disoriented
- I make friends easily at my university
- I feel committed to the studies I have chosen
- I organize my time well to be able to carry out my academic activities

| Self-efficacy dimensions in academic behaviors | Alpha | Dimensions of academic experiences | Alpha |
|---|-------|------------------------------------|-------|
| Real attention | ,82 | Personal difficulties | ,89 |
| Real communication | ,75 | Interpersonal Relations | ,86 |
| Real distinction | ,68 | Studies assessment | ,80 |
| Ideal attention | ,75 | Study strategies | ,83 |
| Ideal communication | ,59 | Institution assessment | ,72 |
| Ideal distinction | ,52 | | |

Table 1Reliability values for the dimensions of the study

• I really like the university where I study

Instrument Reliability

Table 1 shows the reliability indices obtained for the subscales of the *Academic Experiences Euestionnaire* which were located within an alpha range between 0,89 and 0,72, values considered excellent as in the study by Abello et al. (2012) where alpha ranges fluctuated between 0,85 and 0,68. In addition, for the scale of *Self-Efficacy in Academic Behavior*, the Cronbach alpha obtained for the subscales in the real situation was greater than 0,65, the same as the results found in the Blanco et al. (2011) study, where alpha values were higher than 0,7, as well as other studies where the same instrument was used (Guerrero et al., 2013; Peinado et al., 2012; Ornelas et al., 2012).

Procedure

The instruments were applied during the second academic semester. The participants of the study answered the questionnaires in a voluntary way and previously they signed an informed consent.

RESULTS

An exploratory analysis, a Pearson's Product Moment Correlation analysis and a canonical correlation analysis was performed to establish the existent shared relations between both groups of studied variables. The results of the analysis are presented below:

Exploratory analysis of the relations between variables Before performing the calculation of the Pearson's Product Moment Correlations an exploratory analysis to verify the absence of non-linear relationship between the variables was carried out throughout scatter plots, confirming that all the relations were linear.

| | Pers. Diff. | p. | Inter. Rel. | p. | Stud. Asmnt. | p. | Stud. Strategies. | p. | Inst. Asmnt. | р. |
|-------------|----------------|----|----------------|----|-----------------|----|----------------------|----|-----------------|----|
| Real Att. | 1 | * | .2 | ** | .29 | ** | .38 | ** | .25 | ** |
| Real Com. | 34 | ** | .32 | ** | .32 | ** | .39 | ** | .14 | ** |
| Real Dist. | 19 | ** | .11 | * | .23 | ** | .57 | ** | .19 | ** |
| Ideal Att. | 11 | * | .1 | | .22 | ** | .2 | ** | .16 | ** |
| Ideal Com. | 14 | ** | .21 | ** | .14 | ** | .18 | ** | .08 | |
| Ideal Dist. | 08 | | .08 | | .19 | ** | .2 | ** | .12 | * |

Table 2Correlations between the variables of the study

Note. * p < .05; ** p < .01; *** p < .001. (N = 405).

Correlation analysis between the study variables

To test the study hypothesis, the Pearson's Product Moment Correlations was used in a unilateral contrast. The correlations are presented in Table 2.

Canonical correlation analysis

As shown in Table 3, the maximum number of canonical correlations that was performed was 5, which corresponds to the minimum number between variables of groups 1 and 2. The possible canonical correlations were analyzed, using *Wilks's Lambda* test.

Table 3

Possible canonical correlations

| Correlation | F | gl 1 | gl 2 | P. value |
|-------------|-------|------|------|----------|
| .66 | 10.89 | 30 | 1578 | .00 |
| .34 | 3.68 | 20 | 1311 | .00 |
| .21 | 2.55 | 12 | 1048 | .00 |
| .17 | 1.95 | 6 | 794 | .07 |
| .04 | .29 | 2 | 398 | .74 |

Only 3 canonical correlations are presented and analyzed, as shown in Table 4. According to *Wilks's Lambda* test these are the canonical correlations that have significant coefficients.

Dimension 1: "Real self-efficacy vs. academic experience based on study strategy"

This dimension mainly represents the relation between real self-efficacy, on the one hand, and the study strategies and personal difficulties, on the other. The values obtained express the relation between a high real general self-efficacy (in other words, real self-efficacy in attention, communication and excellence areas), and appropriate study strategies and low personal difficulties.

| Table 4 | | | |
|--------------|-----------|------------|-----|
| Standardized | canonical | correlatio | ons |

| | Dim.1 | Dim.2 | Dim.3 |
|-------------------------|-------|-------|-------|
| Real attention | .59 | .09 | .71 |
| Real communication | .67 | 69 | 07 |
| Real distinction | .84 | .45 | 23 |
| Ideal attention | .32 | 15 | .53 |
| Ideal communication | .32 | 36 | .02 |
| Ideal distinction | .31 | 03 | .43 |
| Personal difficulties | 46 | .64 | .33 |
| Interpersonal relations | .40 | 59 | .17 |
| Studies assessment | .56 | 41 | .63 |
| Study strategies | .98 | .19 | 04 |
| Institution assessment | .38 | .07 | .62 |

Dimension 2: "Communication and excellence style vs. personal and interpersonal style"

It represents the relation between a style of personal difficulties and interpersonal relations on one side, and a style of self-efficacy in real excellence and real communication on the other. The values demonstrate the relation between a high self-efficacy in real excellence and a low self-efficacy in real communication. That is to say, if the value is higher in excellence, it is associated with greater personal difficulties and lower rate of interpersonal relations. If the score is higher in communication, it will function differently, in other words, it is associated with lower personal difficulty and greater degree of interpersonal relationships.

Dimension 3: "General attention vs. studies and institution assessment"

It represents the relation between self-efficacy associated with real and ideal attention and the studies and institution assessment. The values demonstrate that if self-efficacy associated to real and ideal attention increases, the studies and institution assessment increases too.

DISCUSSION

Regarding the objectives of this paper, direct relations between academic self-efficacy and each dimension of academic experience, and a reversed relation between selfefficacy and personal difficulties were found.

Theoretically, it is possible that the existing high relation between excellence and study strategies is due to the fact that in both variables, the ability to manage time is involved. In the case of excellence, it has to do with the desire to fulfill the established academic standards, and in the case of study strategies it would be a resource in favor of a better learning. Time planning could enable students to reach academic excellence and it is essential at the moment of managing study in order to aid the learning process(Forest, Betancourt & Ortiz, 2014).

From the relation between self-efficacy in academic behaviors and study strategies can be concluded that when a student shows characteristics such as responsibility in performing his tasks, educational aspirations, academic achievement, effort and perseverance, it is likely that this student has found the method to reach an optimal academic performance, in other words, that has effective study strategies (Zimmerman & Kitsantas, 2005; Blanco et al., 2011).

In addition to this, as the literature reports, the students who show higher scores on study strategies also seem to have less personal difficulties and are able to control their emotions of sadness and anger and keep their happiness (Bortoletto & Boruchovitch, 2013).

The obtained results show that personal difficulties are related in an inverse manner to academic self-efficacy. Nevertheless, there is evidence that personal difficulties, like negative emotions associated with anxiety, emotional instability and sadness, could have favorable effects in the student learning process. Moreover, a higher level of academic self-efficacy would decrease the probability of difficulties associated with exams anxiety (Méndez & Peña, 2013; Nie et al., 2011).

On the other hand, from the analysis of canonical correlation three dimensions were drawn which made possible the description of the students of this study. These dimensions can be explained as follows:

Regarding the dimension called "real self-efficacy vs. academic experience based on study strategies", the students of History and Natural Sciences Pedagogy were the best representatives of this category. The students of History Pedagogy showed a low level of real general self-efficacy, low study strategies and high personal difficulties. In relation to the students of Natural Sciences Pedagogy, high levels of real general self-efficacy, high level of study strategies use and low level of personal difficulties were observed. The scores of this latter group would suit the positive adaptation of the students in their process of adaptation to their institution (Soares, Almeida & Guisaldes, 2011).

The dimension called communication and excellence vs. personal and interpersonal style is expressed in a clearer way in students of Spanish Pedagogy, Physical Education and Sport Pedagogy, and Engineering. The Spanish Pedagogy students have higher scores of self-efficacy and lower scores of self-efficacy in general communication, which is associated with higher personal difficulties and lower interpersonal relationships. On the contrary, the students of Physical Education and Sport Pedagogy have higher scores of self-efficacy in communication and low scores of self-efficacy in excellence, which is associated with lower personal difficulties and a higher degree of interpersonal relations. And in Engineering, students reported slightly low scores in self-efficacy in excellence and study strategies, which possibly has a relation with the use of a learning thoughtful style. This style is influenced by the teaching methods in engineering, as well as by the contents of the study program. Lastly, the negative self-perception around study strategies is associated with difficulties in the adaptation process to academic life (Bahamón, Vianchá, Alarcón & Bohórquez, 2013; Soares, Almeida & Guisaldes, 2011).

Finally, in the third canonical dimension, the assessment of the studies and the institution could be linked to the attention ability which the students would have. From the above-mentioned factors, it could be inferred that the students who are paying attention to the context and to what the institution offers, possibly are able to identify sources of support, take them into account and give them value.

For future papers, it is suggested to study this last dimension in depth, because when the students are able to pay attention to what their educational institution offers, this could facilitate their academic performance (Barahona, 2014). If a significant relation was found, it would be beneficial that the educational institutions clearly and closely informed the students about all the things that they propose as support to their studies and their high expectations, so that they could increase their positive assessment and contribute to improve their academic performance. Along these lines, it is also suggested to evaluate the relation between student performance and assessment of the studies.

Additionally, it would be very interesting to carry out comparative studies by gender and by knowledge, areas on the studied variables, because the information related to gender could be an important instrument for education managers, for example, in the creation of institutional programs to support academic adjustment. With regard to limitations of the study, due to its exploratory type, it is necessary to examine thoroughly the above mentioned elements. Although consistent findings with other investigations were found, when a non-probabilistic sample is used, it is not possible to generalize the results.

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