

# Academic procrastination among online students. Validation of a questionnaire

## Procrastinación académica entre estudiantes de cursos en línea. Validación de un cuestionario

<http://dx.doi.org/10.32870/Ap.v11n2.1673>

Verónica García Martínez \*  
Martha Patricia Silva Payró \*\*

### ABSTRACT

#### Keywords

Academic  
procrastination,  
university courses, online  
learning

The objective of this study was to validate a questionnaire based on the Academic Procrastination Scale (EPA), consisting of 16 items, to which six more were added related to internet interactions during the development of academic activities. The research was quantitative, descriptive, non-experimental and cross-sectional; using a questionnaire with a Likert-type scale, it was applied to 746 students from all the undergraduate education programs who study online courses at a public university in Tabasco, Mexico. The statistical analysis revealed that in the context of the study, the bifactorial structure of EPA (academic self-regulation and procrastination) was confirmed, nine items of the EPA scale were discarded and five procrastination and internet items, which were designed for research, were validated.

### RESUMEN

#### Palabras clave

Procrastinación  
académica, cursos  
universitarios,  
aprendizaje en línea

*El objetivo de este estudio fue validar un cuestionario construido con base en la escala de procrastinación académica (EPA), compuesto por 16 ítems, y se agregaron seis más relacionados con las interacciones con internet durante el desarrollo de actividades académicas. La investigación fue de tipo cuantitativo, descriptivo, no experimental y transversal; se empleó un cuestionario con una escala tipo Likert, que fue aplicado a 746 estudiantes de todos los programas educativos de licenciatura que cursan asignaturas en línea de una universidad pública de Tabasco, México. El análisis estadístico reveló que, en el contexto del estudio, se confirmó la estructura bifactorial de la EPA (autorregulación académica y procrastinación); se descartaron nueve ítems de la escala EPA y se validaron cinco ítems de procrastinación e internet diseñados para la investigación.*

Received: March 31, 2019

Accepted: July 17, 2019

Online Published:

September 30, 2019

\* PhD on Social Sciences by the Facultad Latinoamericana de Ciencias Sociales (FLACSO) [Latinamerican Faculty of Social Sciences]. Professor of Universidad Juárez Autónoma de Tabasco (UJAT) [Autonomous Juárez University of Tabasco], on the División Académica de Educación y Artes (DAEA) [Academic Department of Education and Arts], Mexico.

\*\* PhD on Educational Administration by Universidad Juárez Autónoma de Tabasco (UJAT) [Autonomous Juárez University of Tabasco]. Researcher professor of the División Académica de Informática y Sistemas [Academic Department of Information Technology and Systems] of the UJAT. Mexico.

## INTRODUCTION

Procrastination is as old as humanity and it is not because there are indications that it is so but because the condition of being human is delaying tasks we consider unpleasant, difficult, stressing or contrary to personal interests. As an object of study, it could seem a scientific novelty since the topic has been addressed for barely two decades by psychologists mainly. The growing interest in this human condition makes sense and it is valuable on the grounds that it is contrary to evolution and goal attainment. It is progressive, it relates to many more flaws than virtues and it constitutes a phenomenon that begins in childhood, goes through adolescence and can persist in adulthood.

Balkis and Duru (2007) define procrastination as a “phenomenon in which a person avoids attending a necessary responsibility such as a task or a decision in a timely manner, frequently despite his/her good intentions or inevitable negative and unpleasant consequences” (p. 377). Regardless of their age, people procrastinate occasionally but the problem arises when it turns into a habit.

One type of procrastination is the academics. It is characterized as the intention of performing a task and lacking the intentness either to start, develop or initiate it. This process is usually accompanied by nervousness, restlessness and dispiritedness (Ferrari, Johanson & MacCoown, 1995, quoted in Furlan *et al.*, 2010). Procrastination can start in the first years of school, continue in college and even settle in for the rest of an individual's life. Clariana *et al.* (2012) discovered that this “unnecessary delay” represents the shape of an inverted U since it occurs at a lesser extent at the early educational levels and increases in middle school, in high school and the first years of college and escalates in the last years before obtaining a university degree, as a normal curve or bell. It follows that the greater procrastination stage is between the ages of 17 and 20.

It is estimated that in Anglo-Saxon countries, 80% to 95% of university students adopt a procrastinating behavior at some point, and a high percentage (75%) see themselves as procrastinators, while 50% often put off studying (Steel, 2007; Garzón and Gil, 2017). Different research studies (Solomon & Rothblum, 1984; Balkis & Duru, 2007; Rosario *et al.*, 2009) show 20 to 90% incidence rates of this phenomenon among students that develop maladapted behaviors related to procrastination. In Latin America, 61% of individuals present procrastination behaviors and 20%, chronic procrastination (Ferrari, O'Callahan, & Newbegin, 2004); in Mexico, we do not have sufficient data in this regard.

Although there are some scholars (e.g., Chun & Choi, 2005) that sustain that procrastination can be positive and even have a positive impact on individuals' attitudes and performance. Procrastination is associated mostly to unfavorable conditions for academic learning that postpone success and cause failure (Tice & Baumeister, 1997; Howell & Watson,

2007; Kolawole, Tella & Tella 2007; Clariana *et al.*, 2012, 2014). This condition has become so relevant that those interested in the topic point out that procrastination is one of the variables that influences students' outcomes and that it must be analyzed in depth (Jackson *et al.*, 2003). The abundance of studies in a relatively short period shows the concern for its effects since it is related to many variables and of different kinds, mainly above to personality, character and habits.

## **VARIABLES, CAUSES, TYPES AND WEIGHT OF PROCRASTINATION**

Some of the variables of procrastination are: low level of awareness as personality factor (Steel, 2007); low scrupulousness, self-esteem, control and motivation for achievement; disorganization (Howell & Watson, 2007; Rice, Richardson & Clark, 2012); lack of punctuality and difficulties in following up instructions (Rothblum, 1986, 1990); personal discomfort, stress and illness (Tice & Baumeister 1997; Sirois, Melia-Gordon & Pychyl, 2003; Domínguez-Lara, 2016); and even depression symptoms and anxiety related to failure (Rothblum, 1990; Stainton, Lay & Flett, 2000; Kolawole *et al.*, 2007; William, Stark and Fost, 2008). There are further studies that refer to other variables of the procrastinating behavior and which, for lack of space, will not be addressed in this study; these behaviors are related to internal (intrinsic motivation) as well as external elements (extrinsic motivation).

Regarding the motivation behind this behavior, although there is no sufficient confirmatory evidence that there is an explicatory dependence; we, however, have identified some possible intrinsic and extrinsic causes that might lead to such behavior. Here are some of the causes we have correlated according to the studies carried out:

- Lack of orientation towards the future and self-control (Ferrari & Emmons, 1995).
- Less intrinsic motivation in relation to studies (Schouwenbourg & Groenewoud, 2001).
- Lack of capability to ward off temptations and distractions during one's studies (Dewitte & Schouwenburg, 2004).
- Deficit in self-regulation and a tendency to postpone activities that would lead the individual to a goal for lack of time (Hsin & Nam, 2005).
- Inability to manage personal time efficiently; uncertainty about the priority of actions, goals and objectives; feelings of discomfort derived from the completion of a task (Kolawole *et al.*, 2007; Pittman *et al.*, 2007).

- Contextual variables: lack of adequate areas and clarity of instructions, inadequate relations with others as well as high level of demand from superiors (Williams *et al.*, 2008).
- Expectation of the subject regarding the results he/she may obtain, assessment of the subject on the importance or significance of a task, delay in satisfaction or time required to obtain results and the impulsiveness of the individual (Steel, 2011).
- Teaching method used by teachers in the classroom (Clariana, Gotzens & Badia, 2011).
- Past habits and behaviors that significantly affect current intentions and behaviors (Sommer, 2011).
- Inadequate rearing not oriented to assuming responsibilities and autonomy. (Ramos-Galarza *et al.*, 2017).

In addition to these causes, scholars proposed different typologies that allow profiling procrastination so that its identification and treatment be less complicated. Some types of procrastinators or procrastination are as follows:

- Diligence, avoidance, fear and defiance (Wambach *et al.*, 2001, quoted in Quant and Sánchez, 2012).
- Passive and active (Ferrari, Parker & Ware, 1992; Chun and Choi, 2005; Hsin & Nam, 2005).
- Related to the avoidance in completing tasks and the postponing in making decision (Spada, Hiou & Nikcevic, 2006).
- Arousal and avoidance (Ferrari, 1992; Steel, 2010).
- Perfectionist, dreamer, worried, crisis generator, defiant, occupied and relaxed (Táckacs, 2005).
- Sporadic and chronic procrastination (Schouwenburg, 2004, quoted in Rodríguez and Clariana, 2012).
- Routine, decisional, neurotic, compulsive and academic procrastination (Batori & Mower, 1993, quoted in Balkis & Duru, 2007).
- Family, emotional, academic procrastination (Pardo, Perilla y Salinas, 2014).

These profiles can be found in any dilatory behavior which can also be weighted at different levels and related to different types of samples. In the Hispanic culture, Álvarez (2010) studied a sample of 235 non-state middle school students from Lima, Peru. Domínguez, Villegas and Centeno (2014) weighted it among 379 students of a private university; Alegre (2013) related it with self-efficacy among 348 university students of Lima. Subsequently, Domínguez (2016) measured it among 717 university Psychology students in Peru. Later, Domínguez and Campos (2017) correlated it with the study satisfaction variable with which no correlation was found. In those cases, Domínguez (2016) proposed using the Busko's (1998) academic procrastination scale (EPA, [Spanish acronym]).

Clariana (2013) studied the relation between procrastination and dishonest behavior among 629 students of the Universidad de Barcelona [Barcelona University] and later, Rodríguez and Clariana (2016) applied Solomon and Rothblum (1984) Procrastination Assessment Scale Students to 105 students of Psychology in Colombia to know their incidence with age and course. They found that it does exist with the first but not with the second. Another instrument used to assess it is Tuckman's (1990) procrastination scale adapted by Furlan *et al.* (2010) and used on 227 Argentine students of psychology. Barraza and Barraza (2018) validated the Busko scale (1998) with 361 students of a public higher middle education institution in Mexico. These are only few of the multiple studies conducted in Latin America that show concern on this topic and its relationship with different variables.

## INTERNET AND PROCRASTINATION

Academic procrastination bears many drawbacks that can be identified in the variables, causes, typologies and studies presented. Experts focus their attention on one variable: time. Ferrari *et al.* (1995, quoted in Clariana *et al.*, 2014) claim that, notwithstanding the habit of delaying completing academic tasks; procrastinators do not complete them correctly; hence, their results are of low impact. Delaying this activity may be due to the reasons expounded above and, currently there are other reasons that need to be studied such as the technological context, more specifically the influence of the Internet. Condori and Mamani (2016) found that “the students with high procrastination levels, spend most of their free time browsing social networks, chatrooms and other cyberspace places offering pleasant activities” (p. 277).

While the Internet represents a valuable education and work resource – in such a way that we find completely virtual schools and employments – it can also become a health risk (Navarro-Mancilla and Rueda-Jaimes, 2007). Lam *et al.* (2011) warn that the interrelation an individual establishes with the virtual world generates states of dependence, though not necessarily pathological that begin by a basic involvement then increases and, for obvious reasons, hinders his/her daily life. Griffith

(1998, quoted in Navarro-Mancilla and Rueda-Jaimes, 2007) identified seven specific areas of Internet dependence: tolerance, spend more time than planned on the Internet; spend most of one's time on activities that allow being online; spend more time on the Internet than on social or recreational activities; continue using it despite work, academic, economic or family difficulties; failed attempts to stop or reduce its use; and abstinence.

Internet creates a strengthening behavior capable of generating dependence; however, it is capable of rewarding or gratifying its users through leisure or Internet relationships that can influence the creation of a certain dependence (Ruiz *et al.*, 2010). These stimuli stem from sites related with sex, gambling or shopping (Viñas *et al.*, 2002). The truth is that the Internet represents a space fraught with temptations and hobbies and it changes individuals' consumption habits and tastes. Currently, even digital immigrants are dabbling in social networks in which they have found an adequate mean of getting close to or encounter people whom otherwise, they would never approach. This may be a benefit of the Internet but problems start when an individual exceeds the time limits s/he should spend on other everyday activities.

Some authors (García *et al.*, 2008; Parra *et al.*, 2016) expose the use and abuse that young university students make of the Internet since this platform possesses multiple sites that have been created with a wide range of purposes. On one hand, there are virtual classrooms for educational purposes and information and educational sites. On the other hand, there are sites created for entertainment in which students invest their time on games, social networks, movies reproductions, applications among other tools that offer them gratifications and encourage procrastinating behaviors in the students. However, there is no sufficient or concluding evidence to explain the relation between the excessive use of the Internet, procrastination and academic achievement (Ramos-Galarza *et al.*, 2017); but, this can be inferred by taking into consideration the time young people spend on the Internet on the different devices they have (computer, telephone or tablet).

There is enough evidence to think of dependence and even addiction to the Internet. Sánchez-Carbonell *et al.* (2008) developed a state of the art on the maladaptive use of the Internet and the mobile phone among teenagers and youngsters. Among other findings, Sánchez-Carbonell *et al.* explain that young people minimize the time they spend on the Internet which has an impact on other activities, more specifically on academic activities. As for the mobile telephone, its use can generate mood swings and lack of self-control. In both cases, the consequences are unfavorable. These authors, based on the revision they undertook of the literature, found that in different contexts there are risk groups among which university students since they live far from home, they experience stress when facing unknown



situations, they feel the need to communicate with their friends and family and they have access to the Internet at school.

Our work aims at validating a questionnaire that measures the level of academic procrastination among young university students that study online, in addition to the interaction they maintain with the Internet while carrying out their activities. We seek to establish parameters on the habits of the students during their online activity which can increase their procrastinating behavior. This will allow us to obtain estimates on the level of procrastination in university students in Mexico. There are very few research studies on this subject, more specifically on students that need to perform academic activities using a computer or the Internet. These facts can give us guidelines to design strategies that would reduce the procrastination youngsters show not only in their studies online but also in the in-class mode.

## METHODOLOGY

Our quantitative descriptive, non-experimental and cross-sectional type of study was applied to students of a public university of Tabasco, Mexico, taking online courses as an alternative to make curricular progress in their in-class programs. The population invited to participate in this study consisted of students enrolled in seven subjects of the general area offered in this modality during the 2019 February-August school cycle and were considered according to the accessibility and heterogeneity criteria.

These subjects could be taken by students of every university educational programs. The questionnaires were administered individually through a form sent to the students enrolled in the subjects taken through distance education, with an average response time of 20 minutes.

The study consisted in a sample of 746 students composed by 275 (36.9%) male ( $M$  age = 21.22;  $DE$  = 2.5 years) and 471 (63.1%) female ( $M$  age = 21.20;  $DE$  = 3.6 years). Their ages ranged from 17 to 46, and the total mean being 21.21 years ( $DE$  = 3.27). The instrument used was a questionnaire that included Busko EPA (1998), proposed by Domínguez (2016), which was adapted to the context. The questionnaire consisted of 16 items that measured the level of procrastination, to which we added six questions designed to know the use the students make of the Internet during the performance of the activities of an online course. These items were formulated inspired by consulting documents on the uses of the Internet and each one of these items was a statement that could be answered by means of a Likert type scale: never (1), almost never (2), sometimes (3), almost always (4) and always (5).

The procedure for the empirical work was as follows: we designed the instrument consisting of 22 items which was sent to a panel of experts so they could validate their suitability to the context. At the beginning of the

instruments, we considered the variables of gender, age and academic division enrolment. In the Spanish version of the EPA, we modified items 2, 5, 6, 10 and 15, since these statements, beforehand, involved frequency adverbs that were contradictory to the logic response in the suggested scale; e.g., item 2 (I generally prepare in advance for examinations) was changed to “I prepare for the examinations ahead of time” which could be answered using the suggested frequency scale. We also include five inverted items (1, 8, 9, 15 y 16), which we analyzed under this condition.

After making the adjustments, we adapted the instrument of an electronic form which was sent to the students enrolled in the online courses of the university. For three weeks, we shared the form so the students in the online courses could respond; we obtained a database in Excel that we transferred to the SPSS 23 statistical package for us to conduct the corresponding statistical analyses.

## RESULTS

### *ACADEMIC SELF-REGULATION*

We adapted the Busko instrument (1998) and included the eight items that made up the original scale (e.g., I prepare for the examinations ahead of time; when I have problems to understand something, I immediately try to seek help). The Likert type response format comprised five response options ranging from (1) never to (5) always.

### *PROCRASTINATION*

We adapted the Busko scale (1998) and included the eight items of the original scale (e.g., When I have to perform a task, I wait till the last minute. When I am assigned some readings, I read them the night before). We added six items to this instrument which are known as VGM 1) Will I perform my activities of the online course, I connect with other pages of my liking; 2) the urge to go over my social networks while reviewing my online course is uncontrollable; 3) I invest more time in going over different sites while I am on the course platform than performing other activities; 4) I feel nervous and even desperate if I cannot surf the Internet freely while performing my activities; 5) I have stopped doing my course assignments to entertain myself on the Internet; 6) I have worked on the platform with my cell phone on one side. The Likert type response format comprises five options that range from (1) never to (5) always.

#### a) Descriptive statistics

First, we conducted the descriptive analysis of the 22 items through the mean, standard deviation, asymmetry and Kurtosis (See Table 1).



**Table 1.** Means, standard deviation, asymmetry and kurtosis of the items of the scale to measure procrastination in university students

Items	<i>M</i>	<i>DE</i>	Asymmetry	Kurtosis
1) When I have a task to perform, I wait till the last minute to do it	2.48	.85	-.05	-.29
2) I prepare for the examinations ahead of time	3.95	.80	.36	-.24
3) When I am assigned some readings, I read them the night before	3.04	.92	-.06	-.10
4) When I am assigned some readings, I review them the same day in class	3.03	1.08	-.08	-.63
5) When I have problems understanding something, I immediately try to seek help	3.94	.93	-.62	-.04
6) I attend class	4.82	.52	-4.16	22.78
7) I try to complete the work assigned as soon as possible	4.27	.70	-.68	.27
8) I postpone the work of the courses I do not like	2.53	.98	.04	-.55
9) I postpone the readings of the courses that I do not like	2.48	1.00	.16	-.54
10) I try to improve my study habits	4.25	.73	-.78	.67
11) I invest the necessary time in studying even when the topic is boring	3.76	.85	-.30	-.27
12) I try to get motivated to keep pace with my study	4.30	.72	-.79	.44
13) I try to finish my important works ahead of time	4.09	.79	-.54	-.04

14) I take time to revise my tasks before handing them in	4.18	.82	-.82	.33
15) I put off until tomorrow what I could do today	2.41	.95	.19	-.40
16) I enjoy the mixture of challenge with emotion of waiting until the last minute to complete a task	2.35	1.15	.51	-.65
17) While performing my online course activities, I connect to other pages of my liking	2.71	1.20	.18	-.90
18) The urge to go over my social networks while revising my online course is uncontrollable	2.02	1.06	.85	.04
19) I spend more time going over different sites while I am on the course platform than performing my activities	1.99	.98	.76	-.15
20) I feel nervous and even desperate if I do not surf the Internet freely while doing my activities	1.85	1.08	1.15	.44
21) I have stopped doing my course tasks to entertain myself on the Internet	1.72	.94	1.20	.70
22) I have worked on the platform with my cell phone on one side	2.73	1.20	.16	-.83

Sorce: Self development.

Item 6 was discarded in the first analysis since it was out of the acceptable parameters. Subsequently, the values of asymmetry and kurtosis suggest that the scores are distributed normally. The reliability value measured with Cronbach alpha of the remaining 21 items was .71.

#### b) Exploratory factor analysis

We conducted an exploratory factor analysis to obtain evidence of the construct validity. From the commonality analysis, we discarded four items (3, 4, 5 and 22) since they did not have the acceptable scores. The

number of factors was determined by using the maximum likelihood extract method and varimax rotation through which we identified the initial existence of three factors; however, based on the analysis of the matrix of rotated factors, we eliminated the items that had two factors. The results allowed us to discard two items (9 and 15); in the second round, two more items (7 and 8) and, lastly, item 1. Hence, in total, we discarded nine items (1, 3, 4, 5, 7, 8, 9, 15 and 22) in this analysis. The Kaiser-Meyer-Olkin (KMO) has a .868 value; the Bartlett sphericity test has significant values (chi-square = 3084.34;  $p < .001$ ). Regardless of us not assuming any dimensional preconception in this analysis, the construct coherence of two factors was confirmed by the exploratory.

Table 2 shows the final distribution of the structure of the instrument based on the discarded items and the factor to which these items pertain; both explain the 46.1% variance.

**Table 2.** Structure of the instrument after the exploratory factorial analysis

Items	Factor 1	Factor 2	Factor	Scale
2) I prepare for the examinations ahead of time		.539	F2. Academic self-regulation	EPA
10) I try to improve my study habits		.709	F2. Academic self-regulation	EPA
11) Spend the necessary time to study even if the topic is boring		.705	F2. Academic self-regulation	EPA
12) I try get to get motivated to keep pace with my study		.730	F2. Academic self-regulation	EPA
13) I try to finish my most important works ahead of time		.656	F2. Academic self-regulation	EPA
14) I take time to revise my tasks before handing them in		.566	F2. Academic self-regulation	EPA

16) I enjoy the mixture of challenge with emotion of waiting until the last minute to complete a task	.508		F1. Procrastination	VGM
17) While performing my online course activities, I connect to other pages of my liking	.605		F1. Procrastination	VGM
18) The urge to go over my social networks while revising my online course is uncontrollable	.787		F1. Procrastination	VGM
19) I spend more time going over different sites while I am on the course platform than performing my activities	.789		F1. Procrastination	VGM
20) I feel nervous and even desperate if I do not surf the Internet freely while doing my activities	.687		F1. Procrastination	VGM
21) I have stopped doing my course tasks to entertain myself on the Internet	.678		F1. Procrastination	VGM

Source: Self development.

After the exclusion of items, we observed that some remained; seven from the original scale (2, 10, 11, 12, 13, 14 and 16), six of academic self-regulation and one of procrastination. In order for the study conducted at the public university to be feasible, we validated five items of the VGM scale (17, 18, 19, 20 and 21).

### c) Reliability

Lastly, as for the internal reliability, and since the dimension of procrastination is independent from the academic self-regulation, we conducted a Cronback alpha for the procrastination factor (.83) and one for academic self-regulation (.81).

## DISCUSSION AND CONCLUSION

Our work aimed fundamentally at validating the psychometric questionnaire that measures the academic self-regulation and Busko (1998) procrastination which consists of 16 items and which has been

tested in other contexts and with different participants (such as that of Barraza and Barraza, 2018) in order to obtain evidence of reliability and validity in a university environment. We added six items to this instrument all related to procrastination and the use of Internet during the performance of academic activities to apply it to students that take distance modality courses.

First, we conducted a descriptive analysis of the 22 items through the mean, standard deviation, asymmetry and kurtosis. We eliminated one item and the 21 remaining had a .71 Cronback Alpha. Subsequently, in the exploratory factor analysis, we discarded four items: (3) When assigned readings, I read them the night before; (4) When readings are assigned, I review them on the same day or class; (5) When I have problem understanding something, I immediately try to seek help; (22) I have worked on the platform with my cell phone on one side. The items did not have acceptable scores since it is not a likely habitual conduct of the subjects.

Through the Varimax rotation, we initially identified three factors that were reduced to two given the rotated factor matrix. The result was the elimination of items 9, 15, 7 and 8, in that sequence: (9) I postpone the readings assigned in the courses I did not like; (15) I put off to tomorrow what I can do today; (7) I try to complete the work assigned as soon as possible; (8) I postpone the assignments of the courses I do not like. The exploratory confirmed the construct coherence of two factors. In total, we eliminated eight items from the EPA original questionnaire; seven items of the scale of academic self-regulation and only one from procrastination remained.

Of the six items formulated ad hoc for the students of the online courses regarding the use of the Internet and procrastination, five remained with acceptable values and one was eliminated. The result of the low factor weight of the procrastination of Busko questionnaire may be due to the profile of the subject since the factor analysis depends heavily on the sample analyzed (Byrne, 2001).

As a conclusion and according to the findings presented in this article, we can assert that these are in line with those found in the foregoing evidence in the university context in general terms, even when there is a substantial difference in the two factors of the original questionnaire as for the coherence of some items. The semantic analysis of the eliminated items suggests that the cause could be the way these were approached even though it could be the subject's profile. This is concluded by the coherence of the formulated items show according to the mean of procrastination, which is the use of the Internet among students for their academic activities. To corroborate this, it would require mostly a qualitative work.

The final structure of the questionnaire adjusts to two factors: procrastination and Internet (factor 1) and academic self-regulation

(factor 2). This can reveal that the Internet represents an extraordinary means for online training: however, it can also become a powerful procrastination element.

The final formulation of questionnaire, based on the statistical results of normality and the explicatory factor analysis, is shown on Table 3.

**Table 3** Final structure of the instrument

Items	Factor	Scale
I prepare for the examinations ahead of time	Academic self-regulation	EPA
I try to improve my study habits	Academic self-regulation	EPA
I spend the necessary time studying even though the topic is boring	Academic self-regulation	EPA
I try to be motivated by keeping pace with my study	Academic self-regulation	EPA
I try to finish my most important works ahead of time	Academic self-regulation	EPA
I take time to revise my tasks before handing them in	Academic self-regulation	EPA
I enjoy the mixture of challenge with emotion of waiting until the last minute to complete a task	Procrastination	EPA
While performing my online course activities, I connect to other pages of my liking	Procrastination	VGM
The urge to go over my social networks while revising my online course is uncontrollable	Procrastination	VGM
I spend more time going over different sites while I am on the course platform than performing my activities	Procrastination	VGM





Metropolitana. *Persona*, (13), 159-177. Recuperado de: <https://www.redalyc.org/pdf/1471/147118212009.pdf>

Balkis, Murat & Duru, Erding. (2007). The evaluation of the major characteristics and aspects of the procrastination in the framework of psychological counseling and guidance. *Educational Sciences: Theory & Practice*, 7(1), 376-385. Recuperado de: [https://www.academia.edu/1456305/The\\_Evaluation\\_of\\_the\\_Major\\_Characteristics\\_and\\_Aspects\\_of\\_the\\_Procrastination\\_in\\_the\\_Framework\\_of\\_Psychological\\_Counseling\\_and\\_Guidance](https://www.academia.edu/1456305/The_Evaluation_of_the_Major_Characteristics_and_Aspects_of_the_Procrastination_in_the_Framework_of_Psychological_Counseling_and_Guidance)

Barraza, Arturo y Barraza, Salvador. (2018). Evidencias de validez y confiabilidad de la escala de procrastinación académica en una población estudiantil mexicana. *Revista de Psicología y Ciencias del Comportamiento de la Unidad Académica de Ciencias Jurídicas y Sociales*, 9(1), 75-99. Recuperado de: <http://www.revistapcc.uat.edu.mx/index.php/RPC/article/view/206>

Busko, Deborah. (1998). Causes and consequences of perfectionism and procrastination; a structural equation model (tesis de maestría inédita). University of Guelph. Guelph Ontario, Canadá. Recuperada de: <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.456.4450&rep=rep1&type=pdf>

Byrne, Barbara. (2001). *Structural equation modeling with AMOS: Basic concepts, applications, and programming*. Mahwah: Lawrence Erlbaum.

Clariana, Mercé. (2013). Personalidad, procrastinación y conducta deshonestas en alumnado de distintos grados universitarios. *Electronic Journal of Research in Educational Psychology*, 11(2), 451-472. <http://dx.doi.org/10.14204/ejrep.30.13030>

Clariana, Mercé; Cladellas, Ramón; Gotzens Busquets, Concepción; Badia Martín, María del Mar & Dezcallar, T. (2014). Typology of extracurricular activities and academic procrastination in primary education students. *Electronic Journal of Research in Educational Psychology*, 12(2), 419-446. Recuperado de: <https://eric.ed.gov/?id=EJ1039287>

Clariana, Mercé; Gotzens, Busquets, Concepción & Badia Martín, María del Mar. (2011). Continuous assessment in a large group of psychology undergraduates. *Electronic Journal of Research in Educational Psychology*, 9(1), 95-112. Recuperado de: <http://repositorio.ual.es/handle/10835/848>

Clariana, Mercé; Gotzens Busquets, Concepción; Badia Martín, María del Mar & Cladellas, Ramón. (2012). Procrastination and cheating from secondary school to university. *Electronic Journal of Research in Educational Psychology*, 10(2), 737-754. Recuperado de: <http://www.redalyc.org/articulo.oa?id=293123547011>

- Chun Chu, Angela & Choi, Jin. (2005). Rethinking procrastination: Positive effects of “active” procrastination behavior on attitudes and performance. *The Journal of Social Psychology*, 145(3), 245–264. Recuperado de: [https://www.researchgate.net/publication/7783283\\_Rethinking\\_Procrastination\\_Positive\\_Effects\\_of\\_Active\\_Procrastination\\_Behavior\\_on\\_Attitudes\\_and\\_Performance](https://www.researchgate.net/publication/7783283_Rethinking_Procrastination_Positive_Effects_of_Active_Procrastination_Behavior_on_Attitudes_and_Performance)
- Condori Huanca, Yuli y Mamani Coaquira, Karla. (2016). *Adicción al Facebook y procrastinación académica en estudiantes de la Facultad de Ingeniería y Arquitectura de la Universidad Peruana Unión* (tesis de grado de Psicología). Juliaca, Perú.
- Dewitte, Siegfried & Schouwenburg, Henri. (2002). Procrastination, temptations, and incentives: The struggle between the present and the future in procrastinators and the punctual. *European Journal of Personality*, (16), 469-489. <http://dx.doi.org/10.1002/per.461>
- Domínguez Lara, Sergio Alexis. (2016). Datos normativos de la escala de procrastinación académica en estudiantes de psicología de Lima. *Evaluar*, 16, 20-30. Recuperado de: <https://revistas.unc.edu.ar/index.php/revaluar/article/viewFile/15715/15506>
- Domínguez Lara, Sergio Alexis; Villegas García, Graciela y Centeno Leyva, Sharon Brigitte. (2014). Procrastinación académica: validación de una escala en una muestra de estudiantes de una universidad privada. *Liberabit. Revista de Psicología*, 20(2), 293-304. Recuperado de: <http://www.redalyc.org/articulo.oa?id=68632617010>
- Domínguez Lara, Sergio Alexis y Campos Uscanga, Yolanda. (2017). Influencia de la satisfacción con los estudios sobre la procrastinación académica en estudiantes de psicología: un estudio preliminar. *Liberabit*, 23(1), 123-135. Recuperado de: <http://ojs3.revistaliberabit.com/index.php/Liberabit/article/view/50/50>
- Ferrari, Joseph R.; O'Callahan, Jean & Newbegin, Ian. (2004). Prevalence of procrastination in the United States, United Kingdom, and Australia: Arousal and avoidance delays among adults. *North American Journal of Psychology*, 6, 1-6. Recuperado de: <https://psycnet.apa.org/record/2005-03779-001>
- Ferrari, Joseph R.; Parker, James & Ware, Carolyn. (1992). Academic procrastination: Personality correlates with Myers Briggs types, self-efficacy and academic locus of control. *Journal of Social Behavior and Personality*, 7, 595-602. Recuperado de: [https://www.researchgate.net/publication/232553014\\_Academic\\_procrastination\\_Personality\\_correlates\\_with\\_Myers-Briggs\\_Types\\_self-efficacy\\_and\\_academic\\_locus\\_of\\_control](https://www.researchgate.net/publication/232553014_Academic_procrastination_Personality_correlates_with_Myers-Briggs_Types_self-efficacy_and_academic_locus_of_control)
- Ferrari, Joseph R. & Emmons, Robert. A. (1995). Methods of

procrastination and their relation to self-control and self-reinforcement: An exploratory study. *Journal of Social Behavior & Personality*, 10(1), 135-142. Recuperado de: [https://www.researchgate.net/publication/276295216\\_Methods\\_of\\_Procrastination\\_and\\_their\\_Relation\\_to\\_Self-Control\\_and\\_Self-Reinforcement\\_An\\_Exploratory\\_Study](https://www.researchgate.net/publication/276295216_Methods_of_Procrastination_and_their_Relation_to_Self-Control_and_Self-Reinforcement_An_Exploratory_Study)

Furlan, Luis; Piemontesi, Daniel Esteban; Illbeli, Sebastián Eduardo y Sánchez Rosas, Javier. (2010). *Adaptación de la escala de procrastinación de Tuckman para estudiantes universitarios*. Trabajo presentado en el II Congreso Internacional de Investigación y Práctica Profesional en Psicología XVII. Jornadas de Investigación. Sexto Encuentro de Investigadores en Psicología del Mercosur. Facultad de Psicología-Universidad de Buenos Aires, Buenos Aires. Recuperado de: [https://www.researchgate.net/publication/266737323\\_Adaptacion\\_de\\_la\\_escala\\_de\\_procrastinacion\\_de\\_Tuckman](https://www.researchgate.net/publication/266737323_Adaptacion_de_la_escala_de_procrastinacion_de_Tuckman)

García del Castillo, José María; Terol, María del Carmen; Nieto, Maximiliano; Lledó, Ana; Sánchez, Salvador; Martín-Aragón, Maite y Sitges, Esther. (2008). El uso y abuso de Internet en jóvenes universitarios. *Adicciones*, 20(2), 131-142. Recuperado de: <https://www.redalyc.org/articulo.oa?id=289122057005>

Garzón Umerenkova, Angélica y Gil Flores, Javier. (2017). Gestión del tiempo y procrastinación en la educación superior. *Universitas Psychologica*, 16(3), 1-4. <https://doi.org/10.11144/Javeriana.upsy16-3.gtpe>

Howell, Andrew & Watson, David. (2007). Procrastination: Associations with achievement goal orientation and learning strategies. *Personality and Individual Differences*, (43), 167-178. <https://doi.org/10.1016/j.paid.2006.11.017>

Hsin Chun Chu, Angela & Nam, Jin. (2005). Rethinking procrastination: Positive effects of active procrastination behavior on attitudes and performance. *The Journal of Social Psychology*, 3(145), 245-264. Recuperado de: <https://pdfs.semanticscholar.org/c1b1/f754fd7b9e285529943d8657341413c1c7cf.pdf>

Jackson, Todd; Weiss, Karen; Lundquist, Jesse & Hooper, Denise. (2003). The impact of hope, procrastination and social activity on academic performance of midwestern college students. *Education*, 124(2), 1-18. Recuperado de: [https://www.researchgate.net/publication/291771296\\_The\\_impact\\_of\\_hope\\_procrastination\\_and\\_social\\_activity\\_on\\_academic\\_performance\\_of\\_midwestern\\_college\\_student](https://www.researchgate.net/publication/291771296_The_impact_of_hope_procrastination_and_social_activity_on_academic_performance_of_midwestern_college_student)

Kolawole, Mojed; Tella, Adedeji & Tella, Adeyinka. (2007). Correlates of academic procrastination and mathematics achievement of university undergraduate students. *Eurasia Journal of*

*Mathematics, Science & Technology Education*, 3(4), 363-370.  
Recuperado de: <http://www.ejmste.com/Correlates-of-Academic-Procrastination-and-Mathematics-Achievement-of-nUniversity-Undergraduate-Students,75415,0,2.html>

- Lam-Figueroa, Nelly; Contreras-Pulache Hans; Mori-Quispe, Elizabeth; Nizama-Valladolid, Martín; Gutiérrez, César; Hinostroza-Camposano, Williams; Torrejón Reyes, Erasmo; Hinostroza-Camposano, Richard; Coaquira-Condori, Elizabeth e Hinostroza-Camposano, David. (2011). Adicción a internet: desarrollo y validación de un instrumento en escolares adolescentes de Lima, Perú. *Revista Peruana de Medicina Experimental y Salud Pública*, 35(4), 462-469. Recuperado de: [http://www.scielo.org.pe/scielo.php?script=sci\\_arttext&pid=S1726-46342011000300009](http://www.scielo.org.pe/scielo.php?script=sci_arttext&pid=S1726-46342011000300009)
- Navarro-Mancilla, Álvaro Andrés y Rueda-Jaimes, Germán. (2007). Adicción a internet: revisión crítica de la literatura. *Revista Colombiana de Psiquiatría*, 36(4), 690-700. Recuperado de: [http://www.scielo.org.co/scielo.php?pid=S0034-74502007000400008&script=sci\\_abstract&tlng=es](http://www.scielo.org.co/scielo.php?pid=S0034-74502007000400008&script=sci_abstract&tlng=es)
- Pardo Bolívar, Diana; Perilla Ballesteros, Luisa y Salinas Ramírez, Cristhian. (2014). Relación entre procrastinación académica y ansiedad –rasgo en estudiantes de Psicología. *Cuadernos Hispanoamericanos de Psicología*, 14(1), 1-44. Recuperado de: <https://dialnet.unirioja.es/descarga/articulo/5493101.pdf>
- Parra Sierra, Víctor; Vargas Martínez, José Ignacio; Zamorano González, Benito; Peña Cárdenas, Fabiola; Velázquez Narváez, Yolanda; Ruiz Ramos, Lucía y Monreal Aranda, Óscar. (2016). Adicción y factores determinantes en el uso problemático del internet, en una muestra de jóvenes universitarios. *EDUTEC, Revista Electrónica de Tecnología Educativa*, (56), 60-73. Recuperado de <http://www.edutec.es/revista/index.php/edutec-e/article/view/741>
- Pittman, T.; Tykocinski, O.; Sandman-Keinan, R. & Matthews, P. (2007). When bonuses backfire: An inaction inertia analysis of procrastination induced by a missed opportunity. *Journal of Behavioral Decision Making*, 21(2), 139-150.
- Quant, Diana y Sánchez, Angélica. (2012). Procrastinación, procrastinación académica: concepto e implicaciones. *Revista Vanguardia Psicológica*, 3(1), 45-59.
- Ramos-Galarza, Carlos; Jadán-Guerrero, Janio; Paredes-Núñez, Lorena; Bolaños-Pasquel, Mónica y Gómez-García, Antonio. (2017). Procrastinación, adicción al internet y rendimiento académico de estudiantes universitarios ecuatorianos. *Estudios Pedagógicos*, (3), 275-289.
- Rice, K. G.; Richardson, C. M. E. & Clark, D. (2012). Perfectionism,

procrastination, and psychological distress. *Journal of Counseling Psychology*, 59(2), 288-302.

Rodríguez, A. y Clariana, M. (2017). Procrastinación en estudiantes universitarios: su relación con la edad y el curso académico. *Revista Colombiana de Psicología*, 26(1), 45-60. <https://doi.org/10.15446/rcp.v26n1.53572>

Rosário, Pedro; Costa, Marta; Núñez, José; González-Pineda, Julio; Solano, Paula y Valle, Antonio. (2009). Academic procrastination: Associations with personal, school and family variables. *The Spanish Journal of Psychology*, 12(1), 118-127.

Rothblum, Esther. (1986). Affective, cognitive, and behavioral differences between high and low procrastinators. *Journal of Counseling Psychology*, (33), 387-394.

Rothblum, Esther. (1990). *Fear of failure: The psychodynamic need achievement fear of success and procrastination models. Handbook of social and evaluation anxiety*. Nueva York: Leitenbreg.

Ruiz-Olivares, R; Lucena, V.; Pino, J. y Herruzo, J. (2010). Análisis de comportamientos relacionados con el uso/abuso de internet, teléfono móvil, compras y juego en estudiantes universitarios. *Adicciones*, 22(4), 301-310.

Sánchez-Carbonell, Xavier; Beranuy, Martha; Castellana, Monserrat; Chamarro, Ander y Oberst, Ursula. (2008). La adicción a internet y al móvil: ¿moda o trastorno? *Adicciones*, 20(2), 149-160.

Schouwenburg, Henri C. (2004). Procrastination in academic settings. General introduction, en H. C. Schouwenburg, C. H. Lay, T. A. Pynchyl & J. R. Ferrari. (eds.), *Counseling the procrastinator in academic settings*. 250. Washington DC: American Psychological Association.

Schouwenburg, Henri C., y Groenewoud, Jan T. (2001). Study motivation under social temptation: Effects of trait procrastination. *Personality and Individual Differences*, 30(2), 229-240. DOI [https://doi.org/10.1016/S0191-8869\(00\)00034-9](https://doi.org/10.1016/S0191-8869(00)00034-9)

Sirois, F. M.; Melia-Gordon, M. L. & Pynchyl, T. A. (2003). "I'll look after my health later": An investigation of procrastination and health. *Personality and Individual Differences*, 35, 1167-1184. [http://dx.doi.org/10.1016/S0191-8869\(02\)00326-4](http://dx.doi.org/10.1016/S0191-8869(02)00326-4)

Solomon, L. J. & Rothblum, E. D. (1984). Academic procrastination: Frequency and cognitive-behavioral correlates. *Journal of Counseling Psychology*, 31, 503-509. <https://doi.org/10.1037/0022-0167.31.4.503>

Sommer, L. (2011). The theory of planned behaviour and the impact of past behaviour. *International Business & Economics Research*



*Journal*, 70(1), 91-110.

Stainton, M., Lay, C. & Flett, G. (2000). Trait procrastinators and behavior/trait-specific cognitions. *Journal of Social Behaviour and Personality*, 15( 5), 297-312.

Steel, Piers. (2007). The nature of procrastination: A meta-analytic and theoretical review of quintessential self-regulatory failure. *Psychological Bulletin*, (33), 65-94. Recuperado de [http://www.scirp.org/pdf/CE\\_2013071909532939.pdf](http://www.scirp.org/pdf/CE_2013071909532939.pdf)

Steel, Piers. (2011). *Procrastinación*. Colombia: Editorial Grijalbo.

Spada, M.; Hiou, K. & Nikcevic, A. (2006). Metacognitions, emotions, and procrastination. *Journal of Cognitive Psychotherapy: An International Quarterly*, 20(3), 319-326.

Takács, I. (2005). The influence of the changing educational system on student behaviour. Procrastination: symptom or? *Periodica Polytechnica*, 13(1), 77-85.

Tice, Dianne & Baumeister, R. (1997). Longitudinal study of procrastination, performance, stress and health: The costs and benefits of dawdling. *Psychological Science*, 8(6), 454-458.

Tuckman, B. W. (1990). Group versus goal-setting effects on the self-regulated performance of students differing in self-efficacy. *Journal of Experimental Education*, 58, 291-298.

Viñas Ponch, Ferrani; Ferrer, Jaime; Villar Hoz, Esperanza; Caparros Caparros, Beatriz, Pérez, I. y Cornella, M. (2002). Internet y psicopatología: las nuevas formas de comunicación y su relación con diferentes índices de psicopatología. *Clínica y Salud*, 13(3), 235-256.

Williams, J., Stark, S. & Fost, E. (2008). The relationships among selfcompassion, motivation, and procrastination. *American Journal of Psychological Research*, 4(1), 37-44.

