Hamut'ay
Biannual Scientific Journal
Coordination of research and extension scientific-technological (CIECT-DUED).
University Direction of Distance Education-ALAS PERUANAS UNIVERSITY
http://revistas.uap.edu.pe/ojs/index.php/HAMUT/index
ISSN: 2313-7878 DOI: 10.21503/hamu.v5i2.1617 Vol. 5(2). July-december. Hamut'ay 2018. Lima-Peru

Sociodemographic aspects and self-regulation of incoming online psychology students

Aspectos sociodemográficos y autorregulación de estudiantes de nuevo ingreso a Psicología en línea

José Manuel Meza Cano[1]
https://orcid.org/0000-0002-9504-7906
Anabel De la Rosa Gómez[2]
https://orcid.org/0000-0002-3527-1500
Judith Rivera Baños[3]
https://orcid.org/0000-0002-7750-2477
Edith González Santiago[4]
https://orcid.org/0000-0002-7876-6079
Universidad Nacional Autónoma de México

Received: 07-22-2018
Accepted: 11-16-2018

Citation

Meza, J., De la Rosa, A., Rivera, J. & González, E. (2018) Aspectos sociodemográficos y autorregulación de estudiantes de nuevo ingreso a psicología en línea. [Sociodemographic aspects and self-regulation of incoming online psychology students] Hamut´ay, 5 (2), 7-20.
http://dx.doi.org/10.21503/hamu.v5i2.1617

Abstract

Analyzing the levels of self-regulated learning of incoming online psychology students and their relationship with sociodemographic variables in four consecutive generations was the objective that promoted all this work. The sample consisted of 896 students, of whom 242 were men and 654 women with an average age of 32.2 years. It is a quantitative study with a longitudinal tendency given that a measurement was made for each incoming group to the degree program during four semesters. The scope is correlational, since sociodemographic variables are used to establish the average differences and find the influence between these variables and self-regulation. For this purpose, the Motivation and Learning Strategies Questionnaire was used, which has the Motivation Scale and the Learning Strategies Scale, each one with sub scales. It was found that women reported higher levels of orientation to extrinsic goals and a higher level of Learning Strategies, along with the group of divorced students. Those students who are more than 36 years old reported higher levels of Learning Strategies; It was also found that the most current semester students refer a slight tendency

1 Lecturer in the subject of the Open University and Distance Education System (SUAyED) of the FES Iztacala, UNAM. Member of the Community of Skills and Learning with Technology CHAT, manuel.meza@iztacala.unam.mx
2 Associate C career teacher, TC. of the Open University and Distance Education System (SUAyED) of the FES Iztacala, Coordinator of Distance Education, anabel.delarosa@iztacala.unam.mx
3 Teacher of the Open University and Distance Education System (SUAyED) of the FES Iztacala, responsible for evaluation in the Center for Psychological and Educational Attention at Distance (CAPED), judith.rivera@iztacala.unam.mx
4 Subject teacher of the Open University and Distance Education System (SUAyED) of the FES Iztacala, educational supervisor in the Center of Psychological and Educational Attention to Distance (CAPED), edith.gonzalez@iztacala.unam.mx

to have better Learning Strategies.

Keywords: Self-regulated learning, higher education, online education.

Resumen

Analizar los niveles de Aprendizaje Autorregulado de estudiantes de psicología en línea de nuevo ingreso y su relación con variables sociodemográficas en cuatro generaciones consecutivas fue el objetivo que impulso todo este trabajo. La muestra estuvo conformada por 896 estudiantes, de los cuales 242 fueron hombres y 654 mujeres con una media de edad de 32.2 años. Se trata de un estudio cuantitativo, longitudinal de tendencia, dado que se realizó una medición por cada grupo de nuevo ingreso a la licenciatura durante cuatro semestres. El alcance es correlacional, ya que se emplean variables sociodemográficas para establecer diferencias de medias y encontrar la influencia entre estas variables y la autorregulación. Para ello se empleó el Cuestionario de Motivación y Estrategias de Aprendizaje, el cual cuenta con la Escala de Motivación y la Escala de Estrategias de Aprendizaje, cada una con sub escalas. Se encontró que son las mujeres quienes reportan mayores niveles de orientación a metas extrínsecas y un mayor nivel de Estrategias de Aprendizaje, al igual que el grupo de estudiantes divorciados. Aquellos estudiantes con más de 36 años reportan mayores niveles de Estrategias de Aprendizaje; también se encontró que los estudiantes de semestres más actuales refieren una ligera tendencia a contar con mejores Estrategias de Aprendizaje.

Palabras Clave: Aprendizaje autorregulado, educación superior, educación en línea.

Introduction

Distance education has provided opportunities to sectors of populations, which, for various reasons, do not have access to education. However, despite the new opportunities, there are high rates of desertion or lag associated with factors such as lack of educational or technological support, lack of institutional support, or the students themselves lacking proper study skills and methods (Escanés, Herrero, Merlino & Ayllón, 2014).

According to Torrano, Fuestes & Soria (2017), the emergence of this form of access to knowledge gave the student the need to generate autonomy. The driving idea behind this concept is that the student knows their cognitive processes and controls their own learning. In this way, their education is not limited to acquiring knowledge through others, but free to develop in a personal way, integrating personal experience. Through access to online education, the student can further develop their learning and cognitive skills in an individualized manner. From elementary to higher education, the inclusion of Communication and Information Technologies (ICT) in the educational process has shifted focus onto the strategies of self-regulated learning in virtual environments, as well as in different online tools, which teach cognitive strategies, metacognitive links, and collaborative learning.

In recent years, interest in researching self-regulation in the academic framework has skyrocketed. One-way self-regulation is defined is as the process in which students activate and maintain their cognition, affection, emotion and behavior to focus on achieving goals. Self-regulation and the skills developed translate from the school context into post-educational life (Brandmo & Berger, 2013).

In this regard, Cabero (2013) mentioned that self-regulation or self-regulated learning refers to the ability of the student to manage and regulate their learning, applying strategies and evaluating then improving the process to achieve goals. As the primary participant of their own training, the student establishes goals and objectives independently, and makes conscious decisions as to how

they will learn.

According to Hernández & Camargo (2017) self-regulation is the intentional and self-motivated organization of activities at the cognitive level, the process by which the student sets and organizes the environment to achieve objectives, whether self-imposed or assigned by a third party. Both behavioral and environmental influences can affect the student's learning success. Below are models based on a literature that analyze the theoretical components of self-regulation.

Models of Self-regulation

Several models of self-regulation have emerged in recent years. Each model shares similar elements but emphasizes different phases. Among the best-known models are the Three-phase Model, Zimmerman (2000), and the Model of Areas and Phases, Pintrich (2000). Both models propose similar phases concerning self-regulation and both Pintrich and Zimmerman designate the student as lead actor in their own learning process.

Pintrich (2000) mentions four components of these models. First, the participants (student) as a constructive and active agent of their own education. The student must derive their own meaning from material learned and balance their own objectives and internal strategies (mind) within their external influences (environment). Second, the student's immersion in active learning processes in order to monitor, control and potentially regulate their own reason, motivation, behavior, and environment. Third, the student's ability to establish and follow a goal path, adjusting as needed to meet standards. The fourth component is related to the activities that function as a mediator between the student and the environment. Besides the student's current goal, self-regulation of cognition, motivation, and behavior are the factors that mediate the relationship between student, environment, and success.

Pintrich's model (2000) examines different areas such as cognition, metacognition, behavior, and context, which typically focus on physical scenarios, such as the traditional face-to-face classroom, but also apply to virtual learning environments. A brief description of the phases is: 1. Planning: Set goals, objectives and activate cognitive resources to achieve them. 2. Monitoring: While performing a task, think about the execution; question whether help is needed, and the amount of time spent working. 3. Control: Select and adapt strategies, negotiating the amount of work needed to complete the task. Increase or decrease effort as needed. 4. Reflection: Make judgments about the strategies created and their implementation, then evaluate the task and context under which it was completed.

During each of these phases, the student organizes and manages various resources in different areas such as the cognitive, i.e. what students think about the task, including review and use of prior knowledge; the metacognitive area, which includes the judgments of self-efficacy, the interests of the student and the perception of the difficulty of the task; the behavioral area, which deals with the actions the student takes to carry out the task and involves planning, time management, effort, motivation and self-observation, etc., the contextual area, where elements of the task may be negotiated, the conditions under which the task is done are monitored, and changes may be made according to the emotional reaction to and overall success of learning strategies implemented.

These phases illustrate that different models of self-regulation share emphasis on motivation and the goals and objectives of the student, differentiating between intrinsic and extrinsic goals, which differentiates this self-regulation model from others (Winne, 2015).

In addition to the importance of sticking to a model of self-regulation, it is necessary to review how the chosen model has been evaluated in academic contexts. Traditionally and historically, Winne & Perry (2000, cited in Torrano & González, 2004) make a distinction between two ways to study self-regulation. First, to accept self-regulation as an ability and evaluate it through instruments—usually self-evaluation—describing any qualities or relatively stable attributes of the student in order to predict their behavior, cognition and motivation in other scenarios. Alternatively, to evaluate it through instruments that collect information

on conditions and processes that the auto-regulated student displays over time; for example, using vocal protocols or observatory measures. In this sense, Hernandez & Camargo (2017), with college students, conducted a meta-analysis of 43 empirical studies, finding agreement with the literature, which assumes self-regulation is an ability, and a strong interest in having reliable and valid instruments.

Self-regulation and Socio-demographic Aspects

Different students illustrate different elements of self-regulation. Dörrenbächer & Perels (2016) mentioned students who know that the meaning of "success" is to achieve one's goals have high levels of motivation and self-regulation. Additionally, the same students demonstrate low levels of anxiety and are more extroverted.

Regarding gender, Altun & Erden (2013) found that in metacognitive areas, components such as time and environmental management and regulation of effort were characteristics related to male students, while regulation of effort was the only element that might explain the women's success, possibly due to a cultural effect since most families in this region support self-efficacy of men from early ages.

On the other hand, Vives-Varela., Durán-Cardenas, Varela-Ruiz & Fortoul Van Der Goes (2014) mentioned that those students who have the ability to self-regulate tend to perform higher academically, as they're strategic when planning their goals, monitor their own progress, and evaluate their own performance. They are also aware of how they learn, enabling them to take advantage of their environment, regulating the context, for example, benefiting from the use of technology and collaborative work.

Analyzing these investigations led to finding aspects associated with the population that may have an impact on levels of motivation and learning strategies. For example, Torrano & Soria (2017) mentioned that women have better strategies and confidence in their performance because they know themselves as students. Cano-Garcia (2000) mentions that men are more motivated than women in social sciences careers and have better learning strategies. Regarding variables related to demographic aspects, Areth-Esteves, Castro-Martinez & Rodriguez - Granobles (2015) mentioned that when studying desertion, age is an important factor. Another aspect that Camacho, Gomez & Pintor added is the student's ability to manage technology. Ruiz-Palacios (2018) cites factors inherent to the lifestyle of adult learners as the main variable associated with desertion; travel, family, health, time, and other priorities of married students.

Once we reviewed the sociodemographic elements proposed by the literature, we developed the following objective: to relate the levels of self-regulation and the sociodemographic variables of four generations of incoming online psychology students.

Hypothesis:

- H1: The level of self-regulation is related to the sociodemographic variables such as gender, age and marital status of incoming online psychology students.
- H0: The level of self-regulation not related to the sociodemographic variables such as gender, age and marital status incoming online psychology students.

Materials and Methods

Participants

The selection of the sample was not random. 896 volunteer students signed informed consent. 73% of the sample was women and the age range of the full sample was 18 to 65 years, with an average of 32.2, residing in different States of the Mexican Republic and belonging to urban and rural areas. The sample was formed by first-semester students from semesters 2017-1, 2017-2, 2018-1, and 2018-2 in online psychology of the Faculty of Estudios Superiores Iztacala

Instrument

Motivated Strategies for Learning Questionnaire (MSLQ) assesses strategies of learning and motivation, variables related to self-regulation in the student.

Among the studies that have used this instrument we can mention Martinez & Galan (2000) and Ramirez, Canto, Bueno & Echazarreta (2013), both of Mexican samples. The first study was of the relationship between learning strategies and motivation, along with grades. The instrument indicated an alpha of .72 for the sub-scales of motivation, and an alpha of .65 for the sub-scales of learning strategies. The second study needed to be translation and adapted from the original version of the MSLQ to Mexican Spanish. This process is described in Ramirez et al.'s publication (2013), which is the guideline established in the Test International Committee. The results conclude that items were grouped correctly by principal axis factoring and levels of internal consistency obtained with the Spanish version were acceptable, reaching 0.90 Cronbach alpha values.

According to Curione & Huertas (2017), the MSLQ has a solid theoretical structure, which has been adapted to different populations while maintaining or strengthening its factorial structure. The MSLQ is sensitive to contextual variations in accordance with the type of disciplinary knowledge the students have. Crede & Phillips (2011) highlight the instrument MSLQ among others by its contextual adaptability in relation to motivation and self-regulated learning.

Regarding the reliability of the instrument, Feiz & Hooman (2013) mentioned that the reliability of studies employing the MSLQ varies between .52 and .80, with an alpha of .95 for the instrument. Saks, Leijen, Edovald, & Oun (2015) adapted the MSLQ for use in Estonia through the method of translation/retro-traduccion, obtaining coefficients of reliability that varied from .34 to .90 for the scale scores and .92 as a general score. Meanwhile, Valentin (2013) employed the MSLQ with college students and found an alpha coefficient of .80 for the motivation scale and .89 for the learning strategies scale but claims that it is necessary to review the psychometric properties of the sub-scales of the instrument.

After the information was collected, it was decided to revisit and adapt the MSLQ already adapted by Ramírez (2013) to an online context and apply it to incoming online psychology students.

The MSLQ consists of 81 questions to be answered on a Likert scale of 1 to 7, where 1 means "strongly disagree" and 7 means "strongly agree," divided into two scales: learning strategies, and motivation strategies. The reliability Alfa of Cronbach reported by Ramírez et al. (2013) was a .85 on the scale of learning strategies and .90 on the motivation strategies scale. This evaluation was done online, through Google forms. You can access a version of the instrument in the following link: https://goo.gl/forms/Hkb3FYY4HABNuvGB3.

Once adapted, we analyzed the internal consistency of both scales through Alpha of Cronbach. A coefficient of .61 was found for the motivation scale, so reliability is moderate. A coefficient of .84 was found for the scale of learning strategies, so the scale is reliable. This moderate reliability is consistent with some of the research mentioned above. It is necessary to take the results with some caution.

For the present investigation, some terms were modified to contextualize it in the study of online learning. The words that refer to the classroom were modified to online studies, and the references to printed material or printed text were changed to digital materials and resources as shown below.

Original:

81. I try to implement ideas of themes I have studied in other learning activities, such as, for example, debates.

Adapted:

81. I try to implement ideas of themes I have studied in other learning activities, such as, for example, debates or forums online.

Type and design

It is a non-experimental study because we observed pre-existing situations, while the design

type is longitudinal, because changes of certain variables are analyzed over time in context and a specific community (Hernandez, Fernandez & Baptista, 2010). In this design, the trend is analyzed over time. The interest within the population varies, and this is the main feature, since the participants in the study are not the same, but the population is.

Procedure

Incoming students who voluntarily consented were invited through institutional media such as e-mail. The instrument was applied through a system of surveys online (Google forms). Once the data was collected, it was analyzed using Excel, to subsequently perform statistical analyses using SPSS program version 20.

Confidentiality or Informed consent

Before answering the instrument via the Google form, each student accepted informed consent. Without this, they could not obtain the instrument (see annex 1).

Results

Descriptive analysis was performed on how the sample was formed, the number of students per semester, marital status, and age. Sociodemographic aspects were taken into account as well. These data are described in table 1.

Table 1
Displays aspects socio-demographic of the sample in relation to the evaluated half

Semester	N	Married	Single	Divorced	Average age	%
2017-1	250	106	129	15	31.77	27.9
2017-2	211	96	103	12	33.01	23.5
2018-1	207	74	121	12	32.58	23.1
2018-2	228	89	129	10	31.74	25.4
Total	896	365	482	49	32.24	100

We can observe in Table 1 that the semester with least number of married students was 2018-1 with 74, while the semester with the highest amount was 2017-1 with 106. The fewest singles arose in 2017-2 with 103 and the semesters with most singles were 2017-1 and 2018-2 with 129. The number of divorced students was relatively low in the four semesters, ranging between 10 to 15 per semester. Regarding the age of the students, the lowest average was found in the semester of 2017-1 with 31.77 years, while the semester 2018-1 had the highest average with 32.58 years.

To show the distribution of students according to gender and age the sample was divided into three quartiles taking into account the age, which is shown in Table 2.

Table 2
Gender and age of the sample

Age Group (years)	Men	Women	Total
18-27	76	258	334
28-36	91	189	280
37-63	75	207	282
Total	242	654	896

As we can see the group with the largest number of men was the range between 28 and 36, while the group with more women was the one between 18 and 27 years.

Once we did this analysis, we proceeded to divide the sample into ages according to marital status, it is shown in Table 3.

Table 3
Age and marital status of the sample

Age Group (years)	Married	Divorced	Single	Total
18-27	79	3	252	334
28-36	118	12	150	280
37-63	168	34	80	282
Total	365	49	482	896

In this Table, we found that the biggest group was singles between 18 to 27 years with 252 participants, followed by the group of married students aged between 37 and 63 with 168 participants.

The smaller group was divorced students with an age between 18-27 years with only 3 participants.

Table 4
Gender and marital status of the sample

Gender	Married	Divorced	Single	Total
Men	83	13	146	242
Women	282	36	336	654
Total	365	49	482	896

In this arrangement, the largest group is single women with 336 participants, followed by married women with 282. The larger male group is single men with 146, and the largest group of divorcees was the women with 36 participants. This is show in table 4.

We made a descriptive analysis of each scale of the instrument MSLQ taking into account the sub-scales, which compose them. Descriptive data on the motivation scale is found in table 5.

As you may notice, the sub-scale with a higher score was "Task Value" with a median of 6.41 and typical deviation of 0.67. The sub-scale with lowest score was "Test Anxiety" with a median of 3.98 and typical deviation of 1.44.

For the motivational scale we found a median of 5.41 and typical deviation of 0.62; it can be considered a medium-high score. Table 6 shows the descriptive analysis of the scale of learning strategies.

Table 5
Minimum, Maximum, Median and Typical Deviations of the motivation scale

	Minimum	Maximum	Median	Std. Dev.
Intrinsic Goal Orientation	2.00	7.00	5.39	.98
Extrinsic Goal Orientation	1.00	7.00	5.12	1.33
Task Value	2.33	7.00	6.41	.67
Control Beliefs	2.75	7.00	5.75	.87
Learning Self-efficacy	1.63	7.00	5.82	.89
Test Anxiety	1.00	7.00	3.98	1.44
Motivation Scale	2.20	7.00	5.41	.62

Table 6
Minimum, Maximum, Median and Typical Deviations of the learning strategies scale

	Minimum	Maximum	Median	Std. Dev.
Repetition	1.00	7.00	4.74	1.17
Elaboration	1.50	7.00	5.44	1.02
Organization	1.00	7.00	5.70	1.12
Critical thinking	1.00	7.00	5.23	1.10
Metacognitive Self-regulation	2.00	7.00	5.02	.87
Time and Environment Management	1.25	7.00	4.95	.91
Effort Regulation	1.00	7.00	4.78	1.13
Learning with Classmates	1.00	7.00	3.39	1.44
Help Seeking	1.00	7.00	3.76	1.32
Learning Strategies	1.69	7.00	4.78	.76

On this scale the highest average was in the subscale of "Organization" with 5.70 and typical deviation of 1.12, While the sub-scale with smallest median was "Help Seeking" with 3.76 typical deviation of 1.32. The median for the scale of learning strategies was 4.78 and a typical deviation of 0.76, which is considered a medium value.

To differentiate the demographic variables, we took into account gender, age, marital status and semester of admission to the major.

The next table shows the significant differences in the median within the sample, taking gender as a variable, analyzing median differences of independent samples from a student's t-distribution.

As you can see, in all these sub-scales the median favors the group of women, the most significant difference being test anxiety and effort regulation. All the differences obtained were significant (p = 00).

Below we show statistic differences based on the analysis of median differences using the ANOVA factor.

Table 8 shows the results by taking the semester of enrollment as a grouping variable.

Table 7
Significant results of the analysis of student's t-distribution of independent samples taking gender as a variable

Subscale	t(gl), sig.	Gender	Median	Std. Dev.
Extrinsic Goals Orientation	t(894)= -274, p=0.00	Men Women	4.92 5.19	1.39 1.30
Task Value	t(894)= -3.96, p=0.00	Men Women	6.26 6.46	0.80 0.61
Test Anxiety	t(894)= -4.11, p=0.00	Men Women	3.66 4.10	1.34 1.46
Motivation Scale	t(894)= -3.53, p=0.00	Men Women	5.29 5.45	0.69 0.59
Repetition	t(894)= -2.61, p=0.00	Men Women	4.57 4.81	1.12 1.18
Elaboration	t(894)= -2.61, p=0.00	Men Women	5.30 5.30	1.07 1.00
Organization	t(894)= -6.40, p=0.00	Men Women	5.31 5.84	1.25 1.04
Metacognitive Self-regulation	t(894)= -2.97, p=0.002.00	Men Women	4.88 5.07	0.83 0.87
Time and Environment Management	t(894)= -2.66, p=0.00	Men Women	4.81 5.00	0.94 0.90
Effort Regulation	t(894)= -3.04, p=0.00	Men Women	4.59 4.85	1.09 1.14
Help Seeking	t(894)= -2.65, p=0.00	Men Women	3.57 3.83	1.32 1.31
Learning Strategies	t(894)= -3.89, p=0.00	Men Women	4.62 4.84	0.79 0.74

Table 8
Results from the ANOVA factor taking the semester of enrollment as a variable

Subscale	F	Semester	Median	Std. Dev.
Test Anxiety	F(3,892)= 2.64, p=0.04	2017-1 2017-2 2018-1 2018-2	3.84 4.05 3.86 4.16	1.37 1.38 1.52 1.48
Organization	F(3,892)= 3.96, p=0.00	2017-1 2017-2 2018-1 2018-2	5.72 5.70 5.87 5.55	1.09 1.19 0.98 1.20
Metacognitive Self-regulation	F(3,892)= 4.26, p=0.00	2017-1 2017-2 2018-1 2018-2	4.92 4.94 5.18 5.06	0.93 0.95 0.73 0.81
Effort Regulation	F(3,892)= 29.83, p=0.00	2017-1 2017-2 2018-1 2018-2	5.09 5.13 4.35 4.50	1.29 1.22 0.86 0.85
Help Seeking	F(3,892)= 31.34, p=0.00	2017-1 2017-2 2018-1 2018-2	3.28 3.49 4.17 4.18	1.24 1.30 1.24 1.24
Time and Environment Management	F(3,892)= 2.84, p=0.03	2017-1 2017-2 2018-1 2018-2	4.88 4.84 5.04 5.05	0.93 1.22 0.61 0.76

As you can see in table 8, in most of the 2018-1 semester generation presented higher than median average, except for the sub-scale of effort regulation, while the lowest average generation was that of 2017-1.

The sample was divided into three quartiles by age, which generated three ranges: from 18 to 27 years, 28 to 36 years and 36 to 63 years. By grouping the sample for the analysis by age, we obtained the information in Table 9.

Table 9
Results from the ANOVA factor taking age ranges as the variable

Subscale	F	Group (Years)	Median	Std. Dev.
Intrinsic Goals Orientation	F(2,893)=4.76 p=0.00	18-27 28-36 37-63	5.26 5.43 5.50	1.02 0.98 0.93
Extrinsic Goals Orientation	F(2,893)=6.85 p=0.00	18-27 28-36 37-63	5.31 5.09 4.92	1.30 1.38 1.27
Test Value	F(2,893)=11.23 p=0.00	18-27 28-36 37-63	6.29 6.41 6.54	0.74 0.67 0.56
Test Anxiety	F(2,893)=8.09 p=0.00	18-27 28-36 37-63	4.21 3.93 3.75	1.40 1.46 1.43
laboration	F(2,893)=7.83 p=0.00	18-27 28-36 37-63	5.31 5.41 5.63	1.05 1.02 0.95
Organization	F(2,893)=7.58 p=0.00	18-27 28-36 37-63	5.54 5.68 5.89	1.13 1.12 1.09
Metacognitive Self-regulation	F(2,893)=10.35 p=0.00	18-27 28-36 37-63	4.90 4.97 5.21	0.92 0.81 0.83
Time and Environment Management	F(2,893)=16.15 p=0.00	18-27 28-36 37-63	4.76 4.94 5.18	0.95 0.90 0.82

Subscale	F	Group (Years)	Median	Std. Dev.
Effort Regulation	F(2,893)=4.54 p=0.01	18-27	4.67	1.09
		28-36	4.74	1.12
		37-63	4.94	1.18
Learning Strategies	F(2,893)=5.81 p=0.00	18-27	4.71	0.79
		28-36	4.73	0.75
		37-63	4.91	0.72

You may notice significant differences favoring the oldest group (37 to 63 years) reaching values considered high in sub-scales SUCH as task value (median = 6.54, typical deviation = 0.56), with the exception of extrinsic goals orientation where the participants between 18 and 27 years were higher than average (median = 5.31, typical deviation = 1.30) and test anxiety that also favors the group from 18 to 27 years (median = 4.21, typical deviation = 1.40). The group of 28 to 36 years did not get any higher results than the other groups.

Lastly an analysis of median differences taking marital status as grouping variable. The results are shown in table 10.

Table 10
Results from the ANOVA factor on the marital status variable

Subescale	F	Group	Median	Std. Dev.
Elaboration	F(2,893)=3.90 p=0.02	Married	5.54	0.94
		Divorced	5.56	0.91
		Singles	5.35	1.08
Organization	F(2,893)=7.21 p=0.00	Married	5.84	1.03
		Divorced	5.89	1.12
		Singles	5.56	1.18
Metacognitive self-regulation	F(2,893)=5.01 p=0.00	Married	5.12	0.81
		Divorced	5.13	0.89
		Singles	4.94	0.90
Time and environment management	F(2,893)=8.71 p=0.00	Married	5.05	0.89
		Divorced	5.27	0.90
		Singles	4.84	0.92
Effort regulation	F(2,893)=5.02 p=0.00	Married	4.89	1.15
		Divorced	4.99	1.23
		Singles	4.67	1.10
Learning stragegies	F(2,893)=4.62 p=0.01	Married	4.85	0.72
		Divorced	4.91	0.74
		Singles	4.71	0.78

As you can see in the table above, all significant differences favor the group of divorced students who reached high median values in sub-scales such as organization (median = 5.89, typical deviation = 1.12), while the group of singles presented in most of the sub-scales a medium-low rate, especially on the scale of learning strategies (median = 4.71, typical deviation = 0.78).

Discussion and Conclusions

The initial focus and purpose of this project was to analyze levels of self-regulation and sociodemographic variables that can affect it through four generations of incoming online psychology students. After analyzing the differences found statistically significant, we accepted our hypothesis as true; that the level of self-regulation is related to sociodemographic variables such as gender, age and marital status of the incoming online psychology students.

The findings of self-regulation and their components of motivation and learning strategies reveal an important panoramic of which aspects need to be influenced in order to increase these levels. Most findings show that students are highly intrinsic-goal-oriented, which is consistent with the findings of other authors such as Martin (2018); he stated that students are more concerned about their learning than extrinsic goals, or comparing their performance with other students, and that they assign high value to the tasks of their newly begun online education.

In terms of learning strategies, they showed high levels of organizational strategies, which refers to the ability to employ strategies like underlining and use of graphics and diagrams for studying relevant information.

In contrast to the findings of Martin (2018) where students in a traditional system obtained high values in time and environment management, learning with peers, and help seeking, in our case values considered median for these components were obtained. Broadbent & Poon (2015) claim it is important to increase peer-learning, especially in online education, so it is a finding to keep in consideration for future studies.

In terms of the findings, when comparing the sociodemographic characteristics of the population, it comes to our attention that there are median differences favoring the group of women when taking gender as a variable on the motivational scale and learning strategies scale. This confirms the findings of Torrano & Soria (2017), who found that women have better levels of learning strategies while the men showed higher levels of motivation. They explained that the differences in these scores is because women have a greater understanding of themselves, therefore they are able to make greater use of strategies.

Also relating to motivation for women, we confirmed the findings of the study of Cano-Garcia (2000) where women outperformed men in terms of intrinsic motivation, interest in and attitude towards studying, time management, and use of learning strategies, while the extrinsic motivation and achievement favored males. Cano-Garcia (2000) attributed this to a higher level of anxiety of female students, favoring the use of strategies and intrinsic motivation. This did not occur in our study, since we found no gender differences in the levels of intrinsic goal orientation, but did find differences in the extrinsic goal orientation, which favored women. This may be related to the type of sample where 73% are women who may be seeking a better life by updating their academic status. Despite these findings in the literature there is not conclusive data regarding gender. In the study of Altun & Erden (2013) self-regulation median favors men, meanwhile in the findings of Zimmerman & Kitsantas (2014) found no differences between genders.

When we analyzed age ranges on the motivation scale, the sub-scales of intrinsic goals orientation and the task value favored the older group (37 to 63 years), while extrinsic goals orientation and test anxiety favored the younger group (18 to 27 years), demonstrating the possibility that young students pursue external benefits such as a better work or improved the quality of life. The younger students may have higher levels of anxiety because they are accustomed to rigorous testing in the traditional school environment. The older students, who have not been in contact with this situation, may have lower anxiety because of the unfamiliarity to test pressure.

In the sub-scales of learning strategies, the older students are the ones who had significantly higher levels in development strategies, organization, metacognitive self-regulation, time and environment management and effort regulation. If we take into account that the younger population had high levels of anxiety before tests, we confirm the findings from Furlan, Rosas, Heredia, Illbele & Martinez (2012), who mention that students with high anxiety before tests make more use of superficial learning strategies, while those who have low anxiety turn to critical and reflective strategies. Apparently, a high level of anxiety and lack of confidence is associated with behaviors of avoidance and reduction of learning strategies, while an appropriate level of concern for good performance promotes the mobilization of cognitive resources that prepare to the student to use strategies for managing effort, taking advantage of time, addressing problems, and having greater self-efficacy for the regulation of learning.

An apparent contradiction related to age and its impact on self-regulation is that in most of the related learning strategies sub-scale scores favored the older group (37 to 63 years). In this regard Rovai (2003), cited in Areth, Castro-martinez & Rodriguez (2015) mentioned that adults are at greater risk of dropping out given the labor and social context in which they operate as fathers and mothers of families, however, they are found to be good users of learning strategies.

In this regard Yuni (2018) mentions that adults of middle age and early old age tend to hold favorable beliefs about study, maintaining an individualistic view of learning and promoting the recognition of their abilities. Therefore, it is possible that they perceive themselves as students that had have good learning strategies throughout their life, which is consistent with the position of Vives-Varela (2014) who claims that students who are perceived as self-regulating are aware of how they learn strategically.

There are two important actions to carry out: first, emphasize and strengthen the beliefs of the older group on their own abilities in addition to promote collaborative learning and the use of te-

chnology; second, encourage young people to develop an optimal level of self-knowledge. This is relevant since it is likely that they are confronted with a scenario of online study for the first time.

Concerning variables influencing desertion of online education, Herrero, Merlino & Ayllon (2014) mentioned the difficulties of time management of individuals who have family obligations, such as parents. These personal factors tend to be deciding to choose online education to continue their studies, but they are also elements that affect academic performance. This is partially confirmed by the found data, since, despite being a small group, divorced students—mostly women—reported higher levels of learning strategies. This has called to our attention that they are good managers of their time and environment and therefore the dedication to study, while married and unmarried students showed levels below the divorced.

To make the comparison of averages by generation, we found that levels of self-regulated learning reported increased with each generation; the lowest average evaluated during the first semester (2017-1) and the highest during 2018-1, with similar values to the last evaluated semester (2018-2). The significant difference between these generations can be found especially in the area of learning strategies. Noting that the ages do not differ significantly between generations was discarded this as an influential variable. We also found a slight increase of unmarried students, while married students decreased; a slight difference of little significance. There has been speculation about the proximity of every generation to the use of internet tools for learning and everyday life; however, these factors are not input as part of our data to establish the correlation since instruments to measure them have not been implemented for the level of knowledge, management and use of technologies in this population. However, it may be relevant in a later evaluation since it is a variable that Camacho, Gomez & Pintor (2015) say stands out as crucial for achieving good performance of an online, adult undergraduate student, especially for the management of information, communication, time management and the basic use of the platform.

In conclusion, online students with an average age of 32 years, mostly women (70%), have high levels of motivation and learning strategies, which are important factors of self-regulated learning. Specifically, women have higher levels of self-regulated learning than men, whereas divorced students and students over the age of 37 reported higher levels of learning strategies. The most recent generations show higher levels of organization, seeking help and time and environment management, as part of learning strategies.

Among the contributions, we can highlight the use and adaptation of the Ramirez et al. MSLQ (2013) to a context of online study. Curione & Huertas (2012) cited online study as an area that had not yet been taken into account on the MSLQ. It was decided that rather than increasing scales, TIC-related items be slightly amended to correspond to digital materials, an online platform, and the asynchronous time to cover the scenarios facing the population that participated in this study so that the learning situation was contextualized. However, it is important to review some aspects of the instrument to improve its reliability on the motivation scale.

The results of this study can benefit new online students entering the system by providing the opportunity to influence those elements that benefit or restrict the student's levels of self-regulation. On these strategies Escanés, Herrero, Merlino & Ayllon (2014) suggest that university institutions take into consideration the implementation of the commitment of the teaching staff, a tutoring plan, content generation, and its professionalization and relevant curricula for students and motivation and social integration of the student population at the university. This is consistent with the proposal of De Smul, Heirweg, Van Keer, Devos & Vandevelde (2018), who suggest that it is important to evaluate and train teachers so that they can foster the development of self-regulation of students.

Acknowledgment

Project-funded research PAPIME PE304218

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Annex

Informed consent prior to entering the MSLQ instrument used in the online mode.

EVALUACIÓN PSICOLÓGICA 2018-2

Evaluación emocional para conocer el perfil psicológico de los participantes.

El objetivo de la evaluación es conocer su perfil emocional. La evaluación está compuesta por 4 instrumentos de autoinforme que están orientados a indagar aquellos aspectos que la investigación ha demostrado que son importantes abordar.
Le tomará entre 30 a 45 min.
Los participantes seleccionados se les invitará, en una segunda etapa del proyecto, a recibir consejería psicológica de forma gratuita.

Aspectos éticos y confidencialidad de los datos:
- Todos los participantes serán voluntarios que hayan dado su consentimiento informado para participar en el estudio.
A todos los participantes elegibles se les dará información oral y escrita sobre el estudio. Los participantes pueden abandonar el estudio en cualquier momento sin necesidad de dar ningún tipo de explicación y sin que sufran ningún tipo de perjuicio por ello.
La selección de los participantes se realizará de acuerdo a la evaluación clínica realizada por personal calificado.
El protocolo de evaluación se compone de instrumentos estandarizados que no suponen riesgos para los participantes.
No se realizarán informes para terceros ni se cederán los datos de la evaluación, del posible tratamiento ni de los seguimientos derivados de la intervención. Todos los datos permanecerán bajo el anonimato y serán tratados única y exclusivamente con fines de investigación. Los datos personales serán custodiados y protegidos

CONSENTIMIENTO INFORMADO*
A través de este documento, certifico que he sido informado/a con la claridad y veracidad debida, respecto a la evaluación psicológica perteneciente a la Facultad de Estudios Superiores Iztacala de la Universidad Nacional Autónoma de México, en el que se responderán seis escalas de autoinforme, con el objetivo de conocer tu perfil emocional y poder brindarte en mediano plazo un apoyo psicológico gratuito. Estoy de acuerdo en participar en la investigación, dejando claro que se respetará la buena fé, la confiabilidad y confidencialidad de la información por mí suministrada, sin mencionar mi nombre en cualquier reporte o presentación que se realice con los resultados obtenidos de la mencionada investigación. Para cualquier duda o aclaración, comunicarse con la responsable del proyecto, Dra. Anabel de la Rosa Gómez al correo anabel.delarosa@ired.unam.mx.