Learning Styles and Study Habits of New University Students at a Public University in Mexico

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ABSTRACT

The objective of this research is to identify the learning styles and study habits of new students of the Education, Psychology, Communication, Sociology, and History undergraduate programs of the School of Humanities at the Mexicali Campus of Universidad Autónoma de Baja California (UABC), in Mexico. The method is quantitative, with a sample of 650 students. The inventories used are the survey applied upon admission to the School of Humanities, and adaptations of the Learning Styles and Study Habits Inventories. The questionnaires were answered online by students who were already enrolled in the 2016-2017 school year. A socio-demographic profile of the students was established based on the results: 73 % of enrolled students are female, and only 27 % are male. The majority (70 %) live with their families (father, mother, siblings); 75 % of students do not work; 90 % said they were single and 10 % were married. The predominant learning styles out of the 13 dimensions are the factors associated with effort and frustration tolerance (.99), followed by a single and structured focus of attention (.98) and intrinsic motivation (.94). The primary study habits in the aspect of optimization are reading 32.8 % and motivation to study 28.7 %. Conclusion: Comprehensive profiles that consider the sociodemographic background, learning styles and study habits are essential when dealing with new students.

Keywords: Learning Styles, Study Habits, Higher Education, Students.

INTRODUCTION

Students are one of the core resources of Higher Education Institutions. For this reason, educational policies that assess indicators associated with educational quality for the students, such as the appropriateness of curriculums, tutoring, completion rates, and linkage with productive sectors, have been generated in Mexico since the year 2000 (ANUIES, 2000). Despite all efforts to improve educational quality, several aspects should be considered for the proper attention of students who are admitted to Mexican public universities, since there is little information about the characteristics, knowledge, and skills with which they graduate from upper secondary education institutions (Estrada, 2014; García, Sánchez, Jiménez, & Gutiérrez, 2012).

Therefore, this study proposes to establish a comprehensive profile of the university student with three indicators: sociodemographic characteristics, learning styles and study habits with

which students start their undergraduate programs, considering that collecting information can contribute to the academic planning of university education (Aguilar, 2006; Navarro, 2008; Rinaudo, Chiecher, & Donolo, 2003).

The sociodemographic indicator refers to a statistical dimension that collects and describes the characteristics of students according to their age, sex, economic resources and educational institution of origin. It also allows determining the number of students who will apply to university, those who move from other states, or those who travel from nearby communities (Romero & Lavigne, 2004; Shapiro, 2011). The information collected from new students allows us to detect those who are at risk of not completing their undergraduate programs due to lack of economic resources. It also helps in to establish the type of pre-university education they have, which is what allows them to develop the skills and knowledge required for professional education (Juárez, Rodríguez, & Luna, 2012).

Research on university student learning has revealed that the assessment of learning styles and study habits contributes to the timely detection of at-risk students so that psychopedagogical counseling or tutoring areas can adequately address them (Bermudez, 1998; Camarero, Martin del Buey, & Herrero, 2000; Domínguez, Gutiérrez, Llontop, Villalobos, & Delva, 2015).

The term "Learning Style" has been described from the perspective of different fields of study, and they have agreed on the fact that it refers to the ways in which a student learns, highlighting the cognitive, affective and physiological processes as consistent factors in the way they perceive, relate, and respond to their learning environments (Ventura, 2011).

The empirical data reported at the university level on learning styles research agree that it constitutes a support tool for the psychopedagogical departments within universities. In particular, it contributes to the recognition of the diversity of teaching and learning processes, as well as the variety of resources and techniques used in the classroom and curricular activities (Ventura, 2011).

Study habits have been developed as a type of behavior acquired by repetition or learning, which is done automatically. Notably, study habits are the methods and strategies used by students to access the knowledge contained in the learning units. These habits require effort, dedication, and discipline (Hernández, Rodríguez, & Vargas, 2012). Recent research indicates that study habits in university students are significant contributors to academic achievement. Among the habits that have a positive influence on learning are time management, reading comprehension, class notes, memory, attention, and comprehension, as well as motivation, interpersonal relationships, and teamwork (Mondragón, Cardoso, & Bobadilla, 2016; Torrez, Tolosa, Urrea, & Monsalve, 2009).

Without a doubt, the assessment of learning styles and study habits is an essential tool that can be used as a factor to improve the educational performance of university students, as well as to guide their academic trajectories and professional careers.

DEVELOPMENT OF INDICATORS

The research done on the characteristics of new students is a starting point for the development of empirical indicators of educational trajectories. It is a strategy to predict academic performance, retention and comprehensive profiles of university students.

First, it is important to highlight the progress achieved in data processing through the development and application of three instruments a) the new student survey that was implemented in 2009 with the goal of gathering information from students in order to identify their origin, educational background, motivations for choosing the institution, and program selection expectations (Blanco, 2000; Esquivel & Rojas, 2005; Steinmann, Bosch, & Aiassa, 2013); b) learning style inventories and c) study habits of the new student population. The last two were adapted for the population of the School of Humanities of Universidad Autónoma de Baja California (FCH), Mexico (Diaz Vega, 1990).

With the cooperation of the Graduate Follow Up Program, which is in charge of the SH online survey portal, the three questionnaires used by the Counseling and Psychopedagogy department were applied online for the first time. This innovation allowed for fast, timely and reliable processing of the results presented in the following pages.

METHODOLOGY

The objective of this research is to identify the learning styles and study habits of new students of the Education, Psychology, Communication, Sociology, and History undergraduate programs of the School of Humanities at the Mexicali Campus of Universidad Autónoma de Baja California (UABC), in Mexico.

Population

Students who were selected via the admission test to the common core of the Education, Psychology, Communication, Sociology, and History undergraduate programs of the School of Humanities of the Mexicali Campus of Universidad Autónoma de Baja California (UABC), in Mexico, for the 2016 and 2017 school years.

Sample

The 660 students who enrolled according to the Department of Student Affairs of UABC were considered for this research.

Instruments

Three instruments were used: the Socio-demographic Survey of the School of Humanities (SSSH), the Learning Styles Scale, which is an adaptation of the Learning Styles Inventory (LSI), and the adaptation of the Study Habits Inventory (SHI). The instruments are a product of studies conducted by Honey and Mumford (1986) and Wrenn (2003). These instruments are applied during the introductory courses that take place at the beginning of each semester. The results of the 2016 and 2017 school years are reported in this document.

RESULTS

The data described is a result of the application of the new student questionnaire, the Learning Styles Inventory, and the Study Habits Inventory to 650 School of Humanities students in the 2016 and 2017 school years, from a population of 660 students. Beginning with gender characteristics, Table 1 shows a high degree of feminization (Sierra & Rodriguez, 2005) of enrollment, given that 73 % of enrolled students are female and only 27 % are male.

Table 1
Total Number and Percentage of Students Enrolled in 2016 and 2017 by Gender (N=650)

	N	%
Male	176	27
Female	474	73
Total	650	100

Source: It is developed by the authors based on the results of the questionnaire applied by the Psychopedagogy Department.

Regarding the data on institutions of origin, it should be highlighted that it is public institutions that achieve the highest percentages of admission to the School of Humanities. Table 2 indicates that of the 55 upper secondary education institutions from which the majority of students graduated, 60 % are public, and 40 % are private. It was found that the majority (70 %) live with their families (father, mother, siblings), followed by those who live with other people to whom they are not related (20 %) and those who live alone (10 %).

Also, 75 % of the students do not work and are considered full-time students, and the remaining 25 % have part-time jobs to support their studies. 90 % said they were single, and 10 % are married (see Table 2).

Table 2
Percentages of Sociodemographic Data of New Students (N=650)

	N	%
Upper Secondary Education Institutions		
Private	22	40
Public	33	60
Currently living with		
Alone	65	10
Nuclear family	455	70
People to whom they are not related	130	20
Works		
Yes	163	25
No	487	75
Marital Status		
Married	65	10
Single	585	90

Source: It is developed by the authors based on the results of the new student questionnaire.

Below are the results of the application of the Learning Styles Scale -a term that refers to the psychological process that each person uses to learn- and the Study Habits Scale, which are the behaviors that students practice regularly in order to introduce new concepts in the teaching-learning process.

The results of the application of the Learning Styles Scale show that of the 13 dimensions that were measured, effort and frustration tolerance was the style that obtained the highest average (11) among the 650 enrolled students, followed by intrinsic motivation (9.3) (see

Table 3). It can also be noted in Table 3 that at the moment of performing the reliability analysis of the 13 dimensions, high and moderate factor loadings greater than .60 were obtained. The most critical factors are observed in dimension 11, associated with effort and frustration tolerance (.99), followed by factor 8, single and structured focus of attention (.98) and 12, intrinsic motivation (.94).

Table 3
Reliability and Average of Learning Styles (N=650)

	Cronbach's Alpha	Average
1. External Visual	.80	7.6
2. Internal Visual	.70	7.0
3. External Auditory	.60	5.4
4. Internal Auditory	.70	7.0
5. External Kinesthetic	.65	5.6
6. Internal Kinesthetic	.60	7.5
7. Multiple and Flexible Focus of Attention	.70	7.1
8. Single and Structured Focus of Attention	.98	8.3
9. Abstract Trend	.78	7.9
10. Concrete Trend	.80	7.9
11. Effort and Frustration Tolerance	.99	11.0
12. Intrinsic Motivation	.94	9.3
13. Extrinsic Motivation	.80	7.8

Source: It is developed by the authors based on the results of the adaptation of the Learning Styles Inventory.

Regarding the answers obtained with the Study Habits Scale, which measures five dimensions, it was found that 22 % of the students who enrolled in the School of Humanities are used to taking notes in class, 21.9 % feel motivated to study, and 20.2 % consider that they have positive attitudes and behaviors toward the study. It is worth mentioning that there are no differences in these habits between male and female (see Table 4).

Table 4
Percentage of Study Habits Used by Students Considering Gender (N=650)

		Male	Female	%
TD: (Time Distribution)		18.4	17.8	17.9
MS: (Motivation to Study)		21.4	22.4	21.9
NC: (How to Take Notes in Class)		21.1	22.3	22.2
RO: (Reading Optimization)		18.2	17.7	17.8
AB: (Productive Attitudes and Behaviors Toward Study)		20.9	19.8	20.2
	Total	100	100	100

Source: It is developed by the authors based on the results of the adaptation of the Study Habits Inventory.

It was considered relevant to analyze the students' responses depending on the undergraduate program chosen at the moment of taking the admission exam and subsequent admission to the common core stage. On average, the five undergraduate programs share a preference for the learning style associated with effort and frustration tolerance: the average in Education was 65.4; in Psychology, 65.8; Communication 73.6; Sociology, 58.3; and History 40. On the other hand, the least used learning styles are kinesthetic, where the average for Education was 31, and for Sociology 22.5, and external auditory, where the average for Psychology was 32.5, for Communication was 36.4 and for History 10 (see Table 5).

Table 5
Averages for Learning Styles considering the program chosen upon admission to the School of Humanities (N=650)

	Education N= 128	Psychology N= 424	Communication N= 82	Sociology N= 12	History N= 4
1. External Visual	43.5	45.7	51.7	38.3	35
2. Internal Visual	39.7	42.9	45.9	35.0	25
3. External Auditory	32.1	32.5	36.4	26.6	10
4. Internal Auditory	39.6	43.3	44.0	36.6	35
5. External Kinesthetic	31.0	34.0	39.8	22.5	20
6. Internal Kinesthetic	43.5	46.2	47.4	35.8	20
7. Multiple and Flexible Focus	39.0	44.0	48.5	32.5	30
8. Single and Structured Focus	47.6	50.0	56.2	47.5	30
9. Abstract Trend	43.7	49.0	51.0	54.1	25
10. Concrete Trend	47.8	47.1	51.0	45.0	40
11. Effort and Frustration Tolerance	65.4	65.8	73.6	58.3	40
12. Intrinsic Motivation	55.0	55.7	62.9	61.6	30
13. Extrinsic Motivation	43.0	47.0	51.4	42.0	25

Source: It is developed by the authors based on the results of the adaptation of the Learning Styles Inventory.

Table 6 shows the analysis of study habit preferences by program, showing that the dimensions of time distribution and how to take notes are predominant in Education (23.1 % and 27.1 %, respectively), and the motivation to study and productive attitudes and behaviors toward study (28.7 % and 19.2 %, respectively) are predominant in Psychology.

Regarding the Communication program, students favor two study habits: reading optimization and motivation to study (20.0 % and 19.3 %, respectively), while Sociology students favor three: productive attitudes and behaviors toward study, motivation to study, and how to take notes in class (22.0 %, 21.4 %, and 21.0 %, respectively). Optimization of reading (32.8 %) stands out among History students (see Table 6).

Table 6
Percentage of Answers About Study Habits Depending on the Program Chosen Upon Admission to the School of Humanities (N=650)

	Education N= 128	Psychology N= 424	Communication N= 82	Sociology N= 12	History N= 4
TD: (Time Distribution)	23.1	16.2	16.7	16.6	22.5
MS: (Motivation to Study)	19.1	28.7	19.3	21.4	12.0
NC: (How to Take Notes in Class)	27.1	18.7	16.2	21.0	16.0
RO: (Reading Optimization)	14.3	17.2	20.0	19.0	32.8
AB: (Productive Attitudes and Behaviors Toward Study)	16.4	19.2	18.9	22.0	16.7

Source: It is developed by the authors based on the results of the adaptation of the Study Habits Inventory.

CONCLUSIONS

In the short-term, continuing to process the general background, learning styles and study habits of newly admitted students will allow having profiles and dropout prediction systems, as well as dropout prevention programs with more efficient support interventions (Cano, 2008; León, 2005).

Comprehensive profiles that consider socio-demographic aspects, as well as learning styles and study habits, contribute to the creation of an assessment tool that helps identify the differences of new students since early detection of such deficiencies allows for the implementation of support mechanisms that facilitate learning and increase retention of university students.

Follow-up of the results of admission tests is proposed, since they can serve as predictors of academic achievement of new students, considering that positive correlations have been found between test scores and achievement. However, other factors should be considered for such predictions, such as educational background, study habits, attitudes or motivation (Tirado, Backhoff, Larrazolo, & Rosas, 1997; Arias, Chávez, & Muñoz, 2006, Viloria & Santillán, 2018). Finally, the implementation of other studies focused on the educational trajectories of students at different moments of their undergraduate programs is suggested.

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