Study habits: crucial factor for good academic environment

Hábitos de estudio: factor crucial para el buen rendimiento académico

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It is important that university students recognize different methods and study techniques; and moreover, analyze and incorporate them into their habits. Currently, one of the limitations for the future academic development, is the lack of knowledge of learning and understanding modalities, whose impact affects the academic performance. The objective of the study was to determine the level of association between study habits and academic performance of students from the second and third cycle of the Faculty of Nursing at the National University of the Altiplano in Puno, Peru. The sample of the study was based on 77 students, selected under inclusion and exclusion criteria. The research has a non-experimental, transversal and correlational approach. The study technique was the survey with its instruments of qualitative note taking and the Inventory of Study Habits, whose validity and reliability has a value of 0.82 through the equation K-R 20. The results show that study habits are associated with a good level of academic performance, proven by 66.2% of students; on the other hand, the use of inadequate study habits are predominantly associated with an average academic performance represented by 9.1% of students. Also, 74% of students have good academic performance, 83.1% have adequate study habits and 45.5% have a negative trend during test preparation. The hypothesis test concludes that, there is a statistically significant association between study habits and academic performance in nursing students with the value of p=0.009 < p=0.05.
1. INTRODUCTION

Edel (2003) identifies academic performance as a construct able to adopt quantitative and qualitative values through which there is an approximation to knowledge profile evidence, skills, values and attitudes developed by the student in the teaching-learning process. On the other hand, study habits are defined as methods and study techniques that students learn and develop routinely in relation to the teaching-learning process, and may be suitable or unsuitable for academic performance (Eduardo & Garza, 2012).

Various studies conclude that university students, including nursing students, show low academic performance (Mercado et al., 2019; Rosell, 2015). The QS World University Rankings (2019) notes that only 93 Latin American universities were named among the best thousand in the world (Rankings, 2018), and according to the ranking developed by Times Higher Education magazine, that measures the performance of universities based on indicators related to the quality of teaching, research, knowledge transfer and internationalization of the university; where, only the Pontifical Catholic University of Peru is considered within the top 50 in Latin America (SUNEDU, 2019).

A study by the Organization for Economic Cooperation and Development (OECD) based on data from 64 countries participating in the International Student Assessment Programme (PISA) notes that Latin America is below global academic performance standards; where Peru, Colombia, Brazil and Argentina are among the ten nations whose students have the lowest performance in areas such as mathematics, science and reading comprehension (BBC, 2019).

Whilst, at national level, the National Institute of Statistics and Informatics (2018) reports that 93.2% of the population aged 15 to 29 who attended higher education at universities in 2017, passed their academic semesters. The departments with the highest passing percentages are the Constitutional Province of Callao (98.5%), Cajamarca (98.3%), Province of Lima and Ayacucho (96.7% in each case), Ucayali (95.7%), San Martin (95.2%), Moquegua (94.5%), among others; and the departments with the lowest percentages recorded are Puno (91.3%), Madre de Dios (85.7%), Amazonas (77.3%) and Junín (77.7%).

At local level, a study concerning academic performance in university students of the Professional School of Nursing, reports that 52% of students show regular academic performance with grades from 11 to 13 (Uturunco, 2016). In addition, the Academic Vice-Chancellor reports that, the second academic semester 2019, had 179 students in their fourth enrolment; from which,
Study habits: crucial factor for good academic environment

1016 were suspended, 316 have been withdrawn and 34 dropped their studies. Whilst, at the Faculty of Nursing, 2 students had their fourth enrolment, 16 were suspended, 4 retired and 3 dropped their university studies (National University of the Altiplano, 2019).

Poor academic performance, can lead to academic failure. This is considered a multi-causal problem, where the withdraw from the education system could happen in the short term (Contreras et al., 2008). Barbieri (2016) confirms that low academic performance is a determining factor in the dropout process, which leads to a decreasing level of education for people; affecting the human capital needed to overcome poverty.

When interviewing students from the first cycles of the Faculty of Nursing about their study habits; we found several academic limitations. For instances, students leave the homeworks at the last moment, they do not study the learned topics after class, they only study one day or hours before the exams, and prefer to elaborate plagiarism. Also, during the development of classes they do not pay attention to the information of teachers, which obviously has an impact on academic performance and this is demonstrated by the academic merit ranking of students in the I and II cycle 2019-I where the average goes from 13, 14 to 17% with failed courses (National University of the Altiplano, 2019).

Factors that could determine the low academic performance of university students include cognitive competence, motivation, cognitive condition (lack of study habits or intellectual working techniques, inadequate learning styles), academic self-concept, perceived self-efficacy, attendance at classes, intelligence, pre-university academic training, markings access, and knowledge levels which are not appropriated to academic needs; also, inadequate development of specific skills according to the type of career chosen and aspects of personal attitude (Garbanzo, 2007). From the perspective of teachers, the variables that have the most impact on low academic performance are the low level of knowledge, lack of self-control, self-demand and responsibility (Tejedor & García, 2007). Students also highlight the poor use of tutoring hours, low institutional stimulation for teaching tasks, insufficient skills for study techniques and their lack of effort to focus on their studies (Meraz et al., 2013).

The application of study habits is essential for all students because the lack these tools makes optimal learning impossible (Bedolla, 2018). Lara (2016) concludes that students without good study habits, have limited reading comprehension, and do not show good assimilation of the contents.
There are previous studies concerning study habits and academic performance in different professional schools; both, national and international; however, there are only few studies in our region regarding the study habits in the Faculty of Nursing; this scenario has motivated the research with the following question: Is there an association between study habits and academic performance in nursing students at the National University of the Altiplano, Puno-2019?

2. METHOD AND MATERIALS

Objectives

- To determine the level of association between the study habits and the academic performance of students of the second and third cycle of the Faculty of Nursing at the National University of the Altiplano in Puno, Peru.
- To identify the level of academic performance of students in the second and third cycles of the Faculty of Nursing.
- To identify study habits in students according to the final value: adequate and inadequate.
- To identify the study habits of students in the following dimensions: form of study, resolution of tasks, preparation for exams, listening skills during class and support during studies.

Approach and research design

The study has an correlational approach with non-experimental and cross-sectional design.

Sample

The sampling was based on 77 students from the second and third cycles of the Faculty of Nursing during the academic year 2019.

Techniques and instruments

The main technique applied was the survey; the data collection instruments were, the qualitative record of notes and the Inventory of Study Habits CASM-85 review 2014. (Vicuña, 1999).

The instrument has been validated by the corrected item-test analysis which showed homogeneous rates between good to high levels. Likewise, the author developed the confirmatory factor analysis using the maximum likelihood estimation, showing an acceptable relation with the
theoretical model and the exploratory factor analysis that indicates an adequate sample of items. Reliability reported a value of 0.827 using the KR20 station.

**Statistical data processing**

After verify and organize the obtained data, the results were processed in the SPSS software version 24.

In order to identify the association between study habits and academic performance of these qualitative variables, the chi-square X2 was applied, having the following rule:

If $X^2_c < X^2_t$, the null hypothesis is not rejected.

If $p > 0.05$, the null hypothesis is not rejected.

**Ethical considerations**

Prior to data collection, the informed consent process was applied following the guidelines of the Helsinki Declaration, the Nuremberg Code and CIOMS Standards, giving verbal and written information of the research protocol, and requesting written informed consent to all the students.

3. RESULTS

**Table 1. Study habits and academic performance in nursing students at UNA Puno (Peru, 2019).**

<table>
<thead>
<tr>
<th>Habits</th>
<th>Academic performance level</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Average</td>
<td>Good</td>
<td>Excellent</td>
<td>Total</td>
</tr>
<tr>
<td></td>
<td></td>
<td>fi</td>
<td>%</td>
<td>fi</td>
<td>%</td>
</tr>
<tr>
<td>Inadequate</td>
<td></td>
<td>7</td>
<td>9.1</td>
<td>6</td>
<td>7.8</td>
</tr>
<tr>
<td>Adequate</td>
<td></td>
<td>10</td>
<td>13.0</td>
<td>51</td>
<td>66.2</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>17</td>
<td>22.1</td>
<td>57</td>
<td>74.0</td>
</tr>
</tbody>
</table>

Source: CASM-85 Study Habit Inventory and 7th-monthly weighted average qualitative record.
Proper study habits are related to good academic performance, 66.2%; followed by 13% showing regular performance level and only 3.9% with excellent level. On the other hand, inadequate study habits are predominantly related to regular academic performance (9.1%), from which 7.8% of students have a good level.

According to the chi-square X2, we have the following:

**Chi square test**

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>df</th>
<th>Value p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson chi square</td>
<td>9,400</td>
<td>2</td>
<td>.009</td>
</tr>
<tr>
<td>Likelihood estimation</td>
<td>8,525</td>
<td>2</td>
<td>.014</td>
</tr>
<tr>
<td>Lineal asociación instead of lineal</td>
<td>8,662</td>
<td>1</td>
<td>.003</td>
</tr>
<tr>
<td>Number of valid cases</td>
<td>77</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

$X^2_c = 9.4 > X^2_t = 5.9$ rejected the Ho "There is no association between study habits and academic performance in nursing students at the National University of the Altiplano, Puno-2019". In addition, the bilateral asymptotic significance, P-0.009 was obtained with a lower value than P-0.05; therefore, there is statistically significant association between study habits and academic performance.

**Table 2. Academic performance level of nursing students at the National University of the Altiplano. Puno (Peru, 2019).**

<table>
<thead>
<tr>
<th>Performance</th>
<th>Frequence</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average</td>
<td>17</td>
<td>22.1</td>
</tr>
<tr>
<td>Good</td>
<td>57</td>
<td>74.0</td>
</tr>
<tr>
<td>Excellent</td>
<td>3</td>
<td>3.9</td>
</tr>
<tr>
<td>Total</td>
<td>77</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: 7-monthly weighted qualitative average record.

The table shows that 74% of students have good level of academic performance, followed by 22.1% with a regular level, and 3.9% with excellent level.
Table 3. Study habits nursing students at the National University of the Altiplano Puno (Peru, 2019).

<table>
<thead>
<tr>
<th>Levels</th>
<th>Category</th>
<th>fi</th>
<th>%</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inadequate habits</td>
<td>Very negative</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Negative</td>
<td>0</td>
<td>0</td>
<td>16.9%</td>
</tr>
<tr>
<td></td>
<td>Negative trend</td>
<td>13</td>
<td>16.9</td>
<td></td>
</tr>
<tr>
<td>Adequate habits</td>
<td>Positive trend</td>
<td>31</td>
<td>40.3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Positive</td>
<td>27</td>
<td>35.1</td>
<td>83.1%</td>
</tr>
<tr>
<td></td>
<td>Very positive</td>
<td>6</td>
<td>7.8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>77</td>
<td>100</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Research Habit Inventory CASM-85 Review 2014.

The table shows that 83.1% of students have adequate study habits, whilst 16.9% have inadequate habits. Also, 40.3% have a positive trend and 16.9% have a negative trend.

Table 4. Study habits dimensions in nursing students. Puno (Peru 2019).

<table>
<thead>
<tr>
<th>Study habits dimensions</th>
<th>Levels</th>
<th>Categories</th>
<th>fi</th>
<th>%</th>
<th>fi</th>
<th>%</th>
<th>fi</th>
<th>%</th>
<th>fi</th>
<th>%</th>
<th>fi</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Inadequate habits</td>
<td>Very Negative</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Negative</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>2.6</td>
<td>6</td>
<td>7.8</td>
<td>2</td>
<td>2.6</td>
<td>3</td>
<td>3.9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Negative trend</td>
<td>7</td>
<td>9.1</td>
<td>21</td>
<td>27.3</td>
<td>35</td>
<td>45.5</td>
<td>9</td>
<td>11.7</td>
<td>13</td>
<td>16.9</td>
</tr>
<tr>
<td></td>
<td>Positive trend</td>
<td></td>
<td>31</td>
<td>40.3</td>
<td>33</td>
<td>42.9</td>
<td>23</td>
<td>29.9</td>
<td>17</td>
<td>22.1</td>
<td>16</td>
<td>20.8</td>
</tr>
<tr>
<td></td>
<td>Positive</td>
<td></td>
<td>29</td>
<td>37.7</td>
<td>16</td>
<td>20.8</td>
<td>13</td>
<td>16.9</td>
<td>31</td>
<td>40.3</td>
<td>23</td>
<td>29.9</td>
</tr>
<tr>
<td></td>
<td>Very positive</td>
<td></td>
<td>10</td>
<td>13.3</td>
<td>5</td>
<td>6.5</td>
<td>0</td>
<td>0</td>
<td>18</td>
<td>23.4</td>
<td>22</td>
<td>28.6</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td>77</td>
<td>100</td>
<td>77</td>
<td>100</td>
<td>77</td>
<td>100</td>
<td>77</td>
<td>100</td>
<td>77</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Research Habit Inventory CASM-85. Review 2014.
From the dimensions that assessed the inventory of study habits, there is a highlight of the relationship between the way the class is listened to (40.3%) and positive proper habits; then, support when studying at a positive level (29.9%). The dimensions of task resolution and form of study have a positive trend with 42.9% and 40.3% respectively, and the area preparing for examinations has a negative trend (45.5%).

4. DISCUSSION

The results show that there is an association between study habits and academic performance of nursing students, because statistical analysis shows a calculated chi value of 9.4 which is greater than the chi chart with 5.9. A value of p-0.009 which is less than p-0.05 was obtained, therefore the null hypothesis is rejected.

In order to develop a more comprehensive analysis, the statistical test was applied to each dimension of the study habit inventory, in association with academic performance, resulting in four of the five dimensions included in the inventory (study form, test preparation, listening during the class, academic support during studies) show that the calculated chi square value is greater than the tabulated and asymptotic significance with less than 0.05. (The study form and test preparation dimensions have a significance of 0.008; together with the category of listening during classes with 0.030, and the academic support during studies with 0.022). This indicates the association between the dimensions of study habits and academic performance. The present results are similar to those obtained by Dominguez (2018) who identified that the following dimensions: form of study, test preparation and listening during classes are associated with academic performance.

The results obtained in this study are similar to the findings reported by Cruz & Quiñones (2011), Gloriosa et al., (2016), Jurado (2018), Gonzáles (2015), Grados & Alfaro (2015), Llacsa (2010) and Vásquez (2018) who demonstrated the association between study habits and academic performance, where students who have adequate study habits possess higher levels of academic performance and those who have inadequate study habits show lower academic performance. The similarities of the findings allow us to state that the crucial influence of study habits on performance, is a decisive aspect in the field of higher education.

During the period of academic and professional training of students, it is essential to have a good academic performance that combines a number of personal, social and institutional factors, where study habits are relevant (Garbanzo, 2007; Tejedor & García, 2007). Torres et al. (2009)
indicates that study habits represent a predominant factor during academic life, specially in achieving academic success.

It is key that the university students, recognize the different study methods and techniques, analyzing and being able to incorporate them into their habits. Currently, one of the limitations of the future careers is the ignorance of modalities to learn and understand because they do not have a rationalized method, nor mental scheme that organizes and directs the action of studying towards the objective of understanding, Hernandez (1996). Good performance depends not only on intelligence and effort, but also on the effectiveness of study methods and techniques, Andrade et al., (2018).

Academic performance has different levels and features that student should develop. At the excellent level, it shows the achievement of the expected learnings by demonstrating responsible and very satisfactory management in all the proposed tasks; at the good level, they demonstrate the achievement of the learnings outcomes in the planned time; regular academic performance means that the student is in the process of achieving the expected learnings having academic support during a reasonable period of time (Jurado, 2018).

Touron (1984) states that performance is the numerical and qualitative rating that will reflect learning or the achievement of academic goals, allows to establish the extent to which students have managed to meet the educational objectives both in cognitive and related aspects; in addition, allowing to obtain information to establish standards. Taba (1974) notes that academic performance records are basically essential for the diagnosis of study habits and skills; these aspects can be analyzed as a conclusive process of level and final result. Academic performance is the product of the effort and the ability of the student to work, knowing these variables will lead to a better analysis of academic success or failure (Ortega, 2012).

The results obtained in this study resemble the findings of Cruz & Quiñones (2011) in whose study conducted in nursing students identified that a large percentage of them present academic performance between good and average; however, it differs with the findings obtained by Uturunco (2016), Grados & Alfaro (2015), Llacsa (2010), Dominguez (2018) and Vásquez (2018) who highlight the average academic performance. This could be due to the difference in criteria for evaluating academic performance established by each university, as Garbanzo (2007) states, each university determines its own assessment criteria to obtain an average result of the subjects, these elements can be, the number of subjects, credit number and the values obtained in each of them, and the study habits that have a considerable impact.
In that research, the results of study habits according to levels and categories show that large percentage of students have adequate study habits predominantly in a positive trend; however, students have different study techniques and strategies to gather information that make the learning process more difficult. These results are similar to the findings of Jurado (2018), Grados & Alfaro (2015) and Dominguez (2018) but differ from Cruz & Quiñones (2011), LLacsa (2010), Vásquez (2018) because students mainly demonstrate inappropriate habits. The difference in results could be due to the use of instruments such as Gilbert Wrenn's questionnaire and CASM-85 Inventory adaptations, the variation in the evaluation modes employed by teachers at each university, ignorance of study habits, and academic training received at the secondary level.

It is important for university student to know the different study methods and techniques, analyze them and incorporate them into their habits. During this task, the opinion and guidance of their teachers is fundamental because the study methods do not have a single way of being applied, they are not rigid, they represent for the student a way of learning with greater emphasis on the mental processes that must be develop (Cruz & Quiñones, 2011); in this perspective, the students will develop methods and techniques of study that together with the interactive learning and teaching process will be consolidated as consistant ways of studying.

Some specialists in didactics, raise the questions about students assessment, they believe that their students fail because their own limitations; however, that is not the case, because students are the results of the learning process promoted by teachers (Vicuña, 1999).

Currently, some students that get access to the university, have no orientation about academic performance; and this lack of a solid foundation of study habits will have a big negative impact in academic activities and professional training (Mondragón et al., 2017).

The results of the present research show that, study habits in the dimensions of listening during class and academic support during the academic cycle, present mainly a positive level; at the same time, in the category of study strategies and task resolution prevails a positive trend, but in the dimension of test preparation there is a negative trend and it needs to be reinforced. These results are similar to those obtained by Dominguez (2018). Covey (2013) recommends that the student should review what was done during classes as soon as possible after completing the lessons, organizing notes and reviewing them periodically. Constant review is very important to allow the student to assimilate and internalize the learning outcomes.
It is necessary to differentiate memorization from understanding, the first is an activity of limited horizons, whilst understanding is a dynamic study of open horizons that drives change (F. Vásquez, 2010). Understanding requires practical aids to materialize achievements, using study techniques that allow the student to distinguish and implement processes, such as underlining, reading, use of dictionary, elaboration of summaries, among others (Tierno, 2012).

Although, some students have studied at the last moment, they are able to get a good grade; but, if they really want to learn a subject or develop a bright thinking it is essential to strive honestly day by day, developing a continuous and dynamic learning process (Covey, 2013).

The use of appropriate techniques for the resolution of tasks allows the student to carry out their academic activities more easily, one of them is the organization of time (E. Gonzáles, 2018). The organization of time means to adapt the work that according to a schedule (Ramon, 2012). Proper time management makes it possible to distribute the daily and weekly day in a balanced manner, facilitating the concentration by creating the habit of studying certain subjects in a moment and place, taking advantage of the free time for recreation or leisure (E. Gonzáles, 2018).

Education is competitive when it has quality and sustainability; if study techniques were applied in the learning process, good study habits could be adopted (Bedolla, 2018). If the intellectual activity is planned within the university, the academic performance will increase and it will be more likely for students to finish their studies successfully (Ramon, 2012).

5. CONCLUSION

It has been proven that there is a statistically significant association between the study habits and academic performance in the second and third cycle of nursing students at the National University of the Altiplano in Puno, Peru. The results of the chi-square statistical data processing show asymptotic significance of 0.009. The dimensions associated with academic performance are: study strategies, test preparation, listening during classes and academic support during studies. The exam preparation dimension has a negative trend.

To overcome the gaps found in the research, it is necessary that nursing students develop a set of good learning and study habits, in order to achieve homogeneous results at the end of the professional training; taking into account that students come from different types of secondary educational institutions in the region of Puno and other peruvian regions bringing their different cultural practices and experiences.
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