EDUCATIONAL INNOVATION: STUDY OF THE ATTENTION OF THE UNIVERSITY STUDENT IN THE CLASSROOM. USE OF THE KAHOOT

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Abstract

During the development of a traditional theoretical class, the degree of attention among university students is very variable. In this work, with the educational innovation tool "Kahoot", we want to know the degree of attention of the students and the attendance rate to class of several Degrees. We also want to find out what are the most difficult subjects for students and Kahoot's degree of acceptance by the participants. Our sample consists of 495 students enrolled in subjects of Human Anatomy of 5 degrees at the University of Alicante. At the end of the theoretical classes, we passed on to the students a Kahoot about the syllabus taught. We found that the percentage of correct answers to the test and the rate of attendance to class are different among the students of all the Degrees, being significant in several of them. We do not find concordance regarding which are the subjects of more difficult understanding between Degrees. More than 85% of the students consider Kahoot a playful tool for learning. Our results suggest that the motivation of the student may be influenced by the difficulty of the syllabus and the fear of not passing the subject especially when it has a low degree of affinity with the professional profile.

Keywords: motivation, superior education, educational innovation, Kahoot, gamification.

1 INTRODUCTION

It is known that more attention during a class results in better retention of the information, but the student has difficulty paying attention throughout the development of a face-to-face class, especially if they are long-term theoretical classes (50-60 min). A large number of studies in literature try to show how student attention varies during the class, finding approaches and discordant results ([1], [2]).

With the inclusion of technological resources in the educational field new possibilities appear for both teachers and students. There is a large number of studies where they value the use of innovative educational tools in teaching with the aim of improving attendance, motivation and student participation during the class ([3], [4]).

In order to obtain more empirical data about the student's attention during the face-to-face class, we have evaluated the degree of attention of our students during theoretical classes. For this, we have used the tool of educational innovation, "Kahoot".

Our hypothesis is that students with a high degree of interest in the subject will show a greater degree of attention in class observed in a higher percentage of correct answers in Kahoot tests.

The aims of our work are: 1) To find out and compare the rate of attendance to class according to the Degree; 2) To know and compare the degree of attention of the student according to the Degree; 3) To discover which topics are the most difficult understanding in each Degree; 4) To know the acceptance degree of this educational innovation tool by the student according to the Degree.

2 METHODOLOGY

2.1 Description of the context and participants

The study has been done with 495 students of Human Anatomy (HA) of the Degrees in Nursing (N), Human Nutrition and Dietetics (HND), Physical Activity and Sport Sciences (PASS), Optics and Optometry (OO) and Information Technologies for Health (ITH) of the University of Alicante (UA). The subject of HA is in the first year of all these Degrees, with the exception of the ITH Degree that is taught on the second year. The subjects of HA are scheduled in the early hours in the morning except
for ITH, which is taught at the early afternoon. The duration of the classes is approximately 50 minutes.

The HA students of these Degrees have a heterogeneous academic profile based on the level of motivation, attitude and interest and predisposition to study.

2.2 Instrument / Innovative educational tool

Kahoot is a free platform that allows creating surveys, debates or questionnaires with multiple answers on the desired topic. This tool does not need the installation of any computer application or the registration of the student in order to do the test, it only needs digital equipment with an internet connection. Kahoot allows to add images and videos, set a limited response time per question and answer in a group or individual way. It is very simple to use because, unlike other platforms, it only allows 4 answers per question. The student voluntarily accesses the platform by his portable device connected to the Internet. Afterwards, they would need to enter the numerical code generated by the application, identify themselves with theirs names or an "alias" and perform the test. While students are answering the test, the program shows instantly the correct answer after each question, as well as its score and its position in the list of participants. At the end of all related questions of the topic, Kahoot shows 4 questions of "feedback" in which it is valued: a) Degree of fun to value between "0 to 5", b) If you have learned something between "yes/no", c) If you would recommend it between "yes/no" and d) How did you feel while doing the test between "positive" and "neutral". Once the test is finished, the answers of each student are stored in the teacher's computer for further study and analysis.

For each topic, a test was made with 10 questions regarding the subject taught with only one correct option. The test was answered individually. The time to answer each question was set at 20 or 30 seconds, depending on the level of difficulty. In shared syllabus among degrees, the online test has the same questions. For specific syllabus of each degree, different tests were made according to the theme.

2.3 Process

The last 10 minutes of the theoretical class were used to explain and perform the Kahoot online test. Students accessed the platform link ("kahoot.it") by their digital devices, they wrote the numeric code and identified themselves in order to answer the test. The numeric code was shared with the class by screen projection. The test began once the students agreed to participate voluntarily. Once the questionnaire was completed, the answers of the participants were recorded on the teacher's computer. All analyses will be performed using an Excel spreadsheet and SPSS version 23. A p-value <0.05 has been set as statistically significant.

3 RESULTS

3.1 Attendance, participation and degree of student attention

The analysis of the percentage of class attendance helped us to know the degree of student interest in the subject. We measured this percentage by studying the response rate to the online test. The overall results obtained showed a student attendance rate of 48%. The ITH students stand out with 60% compared to the lowest percentage, 38% of the PASS students (Fig. 1).

The analysis of the rate of correct answers of the students to the online test allowed us to know the degree of attention of the student during the development of the class. 46.55% of students answered the questions correctly, highlighting the ITH students with 51.30% followed by the OO students with 48.2%. The N students had the lowest rate of correct answers with 45.3%. We observed a great heterogeneity in the answers related to the online test by the students of HA in all Degrees studied (Fig. 1). The statistical analysis, ANOVA, showed significant differences between the attendance rate of students of ITH with N (p= 0.008) and with PASS (p = 0.001) and between the rate of correct responses of students of ITH with N (p = 0.001) and PASS (p = 0.006). We did not find significant differences among the other groups (p> 0.05).
Figure 1. Percentage of attendance to class and success rate of students in each Degree. The black bars above the columns indicate the standard deviation of the measurements.

3.2 Degree of difficulty of the contents

The success rate by subject allowed us to know the degree of difficulty of the taught syllabus. The subjects with a lower rate of correct answers suggested a greater difficulty for the student. The results did not reflect concordances among Degrees. The lowest success rates in N corresponded to the head and trunk anatomy with 31.7% and 37.8% respectively. In HND, we found the lowest success rate, 34.7% in the subject that corresponded to the study of the anatomy of the upper limbs and lower limbs, in PASS 32.8% in the neck anatomy, in OO 49.5% and 51.5% in the subjects corresponding to the tegumentary system and locomotor system, respectively. Finally, in ITH, the lowest response rates, 35.9% and 36.9%, corresponded to the locomotor system and peripheral nervous system and sensory nervous system respectively. N presented the lowest standard deviations while the rest of the Degrees were characterized by large standard deviations in all the subjects, reflecting a lot of variability in the students’ answers (Table 1).

Table 1. Table showing the lowest success rates by Degree, reflecting the most difficult topics for the student. SD: standard deviation of the measurements.

<table>
<thead>
<tr>
<th>DEGREE</th>
<th>AVERAGE</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>NURSING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>THE HEAD</td>
<td>31.68</td>
<td>7.05</td>
</tr>
<tr>
<td>THE TRUNK</td>
<td>37.76</td>
<td>6.95</td>
</tr>
<tr>
<td>HND</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UPPER AND LOWER LIMBS</td>
<td>34.75</td>
<td>12.19</td>
</tr>
<tr>
<td>PASS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>THE NECK</td>
<td>32.85</td>
<td>14.68</td>
</tr>
<tr>
<td>OO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TEGUMENTARY SYSTEM</td>
<td>49.47</td>
<td>34.74</td>
</tr>
<tr>
<td>LOCOMOTOR SYSTEM</td>
<td>51.50</td>
<td>22.90</td>
</tr>
<tr>
<td>ITH</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LOCOMOTOR SYSTEM</td>
<td>35.95</td>
<td>23.41</td>
</tr>
<tr>
<td>PERIPHERAL AND SENSORY NERVOUS SYSTEM</td>
<td>36.88</td>
<td>25.56</td>
</tr>
</tbody>
</table>
3.3 Degree of acceptance of the Kahoot by the student

The analysis of the 4 feedback questions revealed that 88.7% of the students consider "Kahoot" a dynamic, motivating and playful element in the class. The students of PASS were the ones who least appreciated the Kahoot with 78.7% compared to 98% of the students of ITH and OO. The largest standard deviations in the Degrees of N, HND and PASS reflected a greater disparity in the opinion that the student had about this innovative tool compared to the Degrees of OO and ITH.

4 CONCLUSIONS

From our study we conclude that:

1. The ITH students followed by the OO students obtained the highest rate of attendance to HA class. The students of PASS and N presented the lowest attendance rates of all Degrees studied.

2. The highest percentage in correct answers to the online test was found in the students of the ITH degree followed by the OO students. The students of N and PASS presented the lowest rates of success.

3. The results did not show concordance among Degrees in topics of more difficult comprehension.

4. The students of all the degrees showed a high positive valuation of the educational innovation tool, Kahoot, as a motivating tool for learning.

REFERENCES


