CONTENT LEARNING IN PRIMARY EDUCATION DEGREE BY MEANS OF FLIPPED CLASSROOM

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Abstract

Advancement of society creates the need to implement new teaching methods in accordance with new times to increase attention in students and to improve the individualization of teaching that allow to maximize class time. Flipped Classroom facilitates to change the structure of traditional classes to make student the true protagonist of the learning process. In the present study, an experimental research has been carried out with the objective of comparing the assimilation of contents between a traditional lesson with another taught with Flipped Classroom method. The sample comprised 64 students from Primary Education Degree. The control group, consisted of 35 students, received a class with traditional methodology of direct instruction and Flipped Classroom was carried out with experimental group, consisted of 29 students. Before each lesson, a pre-test was conducted to evaluate the students' knowledge about the contents. After the master's lesson, students in the control group performed the post-test to evaluate the content learned. Students in the experimental group performed the post-test after the Flipped class that the teacher directed after all the students saw the video at home. Results were analyzed using SPSS Statistics v.22 software. The statistical test applied was Student t test to compare the inter and intra groups results. This study showed that the level of knowledge increased significantly with Flipped Classroom.

Keywords: teaching methodology, technological education, flipped classroom, high education.

1 INTRODUCTION

Development of teaching innovation aims at enhancing the limitations of learning processes to optimize the assimilation of knowledge in education community. Advancement of society creates the need to implement new teaching methods in accordance with new times to increase attention in students and to improve the individualization of teaching that allow to maximize class time [1]. However, students often have difficulties in managing time and their participation in new methods of active learning does not occur spontaneously. Active learning has clear benefits in learning outcomes but the role of the teacher plays a key role in the design and progression of activities [2]. Teachers should encourage them using a variety of strategies, establishing a relationship between the objectives of the subject and their own educational objectives.

Flipped Classroom facilitates to change the structure of traditional classes to make student the true protagonist of the learning process. This method consists of combining the traditional model with the explanations of teacher in class and the acquisition of contents that the student will prepare at home with videos prepared by the teacher [3]. Direct instruction is taken out of the group's learning space and the resulting space is transformed into a dynamic and interactive learning environment where the teacher guides the students as they engage creatively and critical thinking [4].

Increasing the responsibility and involvement the students at home with the contents will allow the teacher to dedicate the class time to carry out more other activities to exchange knowledge and ideas among the students, to enhance activities aimed at promoting exploring, solving doubts... In addition, students will be able to spend more time reviewing the contents, in class since the teacher will be able to give more attention to individual needs and at home reproducing the videos as many times as they need [5]. Flipped Classroom encourages the individualization of the students allowing to respect the rhythm of learning of each student and the teacher can dedicate more time to the attention to the diversity [6]. The inverse learning creates a flexible environment that adapts to the variety of methodologies of grouping and arrangement of the learning space. The intentional use of learning determines what should be taught and what students have to learn for themselves by creating a learning culture involving the student actively in the construction and evaluation of knowledge. There is no doubt that this opportunity for teachers to share information and knowledge with students creates a collaborative learning environment in the classroom and at home, involving families from the beginning of the learning process [7].
It is also true that the implementation of this type of methodology increases both the work for the student and for the teacher, hence increasing learning [8]. Students need to study before the beginning of each class by creating a habit, classes become more dynamic and increase the involvement of students, more time is available to deepen and the method allows a formative evaluation. There are a number of skills that the teacher will need to experiment and develop to implement a reverse teaching model. Pedagogical knowledge is essential to understand the methodologies that promote student effort and learning or the access and technological ability to transmit information out of class [9].

Based on previous findings in the literature, numerous researches have already tested both success and weaknesses of the inverted class in different educational contexts such as primary school [10], secondary school [11] or higher education in different subjects [12]. However, there is a scientific gap where the utility of the inverted class has been studied in lessons given to future teachers. In the present study, an experimental research has been carried out with the objective of comparing the assimilation of contents between a traditional lesson with another taught with Flipped Classroom method.

2 METHODOLOGY

2.1 Sample

The sample comprised 64 students (48% men, 52% women) from Primary Education Degree. The control group, consisted of 35 students, received a class with traditional methodology of direct instruction. The experimental group, consisted of 29, was carried out inverted class (Flipped Classroom) who were instructed with computer videos at home.

2.2 Instrument

The evaluation of previous knowledge as well as the evaluation of the acquisition of knowledge after finishing the implication with both groups was made using the Google Forms tool. The students answered ten different but related questions in both pre-test and post-test groups. The video made for the experimental group was shared with students using the EDpuzzle tool. Thanks to this tool we can monitor whether or not students saw the video at home, and even the number of times they saw it. EDpuzzle allows the teacher to introduce questions in the video itself making sure that the students are enhancing an active learning of the contents.

2.3 Procedure and design

In the pre-lesson class, a pre-test was conducted to evaluate the students' knowledge about the contents. At the end of the lesson of that day, the teacher shared the video of didactic contents with the students of the experimental group.

On the day of the lesson, the teacher prepared a traditional presentation to teach the students in the control group the contents of the lesson. When the class is finished, the teacher solved the students' doubts. Once all doubts and clarifications were clarified, the students answer individually to the content questionnaire.

On the other hand, the teacher made an evaluation of the answers of the videos of the students for the experimental group. The teacher's lesson was oriented to the contents in which the students had had greater difficulty although all the contents of the video were reviewed together with the students. At the end of the class, the students of the experimental group carried out the questionnaire to evaluate the contents acquired.

2.4 Statistical analysis

All data were analyzed using Statistical Package for Social Sciences (SPSS) v.22 software. The statistical test applied was Student t-test to compare the means results inter and intra groups. Significance was set at p<0.01.
3 RESULTS

The analysis of the results of the content evaluations of both groups is presented below. First of the control group and secondly of the experimental group. Finally, the differences between the two groups were compared.

Both control and experimental groups improved their results statistically significant (p<0.001). Students who learned with traditional method (Figure 1) scored a mean of 4.26±1.60 points in the pre-test. The student with the lowest grade got 1 points out of a total of 10 possible points while the student with the highest grade reached 7 points. The mean obtained in the post-test was 6.31±1.57. The highest grade was 10 points, however, the lowest grade was 4 points.

In the other hand, students who received the lesson with Flipped Classroom method (Figure 2), had a mean of 2.86±1.46 point in the pre-test. The best grade obtained by the students was 6 points and the lowest score were 0 points. On the other hand, the mean of the post-test was 8.31±1.28 points. The highest score was 10 points while the lowest score was 5 points.

Finally, in order to know which of the two methods there was greater assimilation of knowledge the difference of both post-tests was analyzed (Figure 3) and statistically significant differences between Flipped Classroom and control group were found (p<0.001). Students in the control group increased their score a mean of 2.06±1.99 points while the students of the experimental group or Flipped Classroom have increased their mean score in 5.45±1.93 points.
DISCUSSION AND CONCLUSIONS

The implementation of the inverted classroom is a challenge for teachers accustomed to teaching in a traditional way. However, the positive results of this research suggest that Flipped Classroom deserves to be considered in the teaching-learning process in higher education to increase student engagement, to increase learning and for students to develop independently [15].

The research agrees with the results of the literature regarding the use of the inverted class and its effect on academic achievement. The improvement in the comparative of the academic results obtained using the inverted class intervention with the results obtained in the traditional class agree with an important number of research in different areas of education [16,17,18]. In addition, they argue that this approach to the teaching-learning process has increased students’ problem-solving skills, developing their critical and independent thinking and developing their capacity for lifelong learning [19].

However, other studies claim that although the data are positive, the inverted class requires time, diverse skills in relation to technology, and active participation by students, management and the family [4]. This may be the reason why some researchers [20, 21] did not find significant differences between the results obtained in the group where they used the inverted class compared to the group that did not use it. With time and continuous work, the inverted class method can give positive results.

In conclusion, this study showed that knowledge acquisition is guaranteed with both traditional teaching methods and Flipped Classroom. However, the level of knowledge increased significantly more with this new methodology where the student participates actively in the learning process. This does not negate the need for teachers to own their content, but rather provides a more efficient way to cover critical content while providing the spaces for students to search, discover and create [11].

The individualization of teaching in Flipped Classroom that allows the student to rewind learning constantly with online videos allows him to progress with complete freedom. In addition, it increases the interaction between students and teachers who can create an inspiring educational experience where a greater understanding of knowledge is achieved. Today’s education can not only revolve around concepts, but also around assuming responsibilities within the teaching-learning process. [22,23].

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REFERENCES


