PERCEPTION OF THE STUDENTS OF THE BAOC MODALITY: NUMERICAL METHODS IN ENGINEERING COURSE

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Abstract

With the constant increase in the demand for enrollment of undergraduate students in Public Education Institutions, it is necessary to create new ways of conducting the teaching-learning process. In this paper, we analyse the BAOC (Big Academic Open Course), school courses for large groups, whose objective is to expand the coverage and optimize the resources of the institution. Its characteristics are based on b-learning and MOOCs applied to school courses.

The objective of this work is to measure the perception of students of the BAOC modality. A survey was applied at the end of the Numerical Methods in Engineering course in which BAOC was used during the years of 2012 to 2014. Questions were assessed such as: units of study, bibliography, counselling, interaction with their peers, the Virtual Learning Environment, study materials, student satisfaction with the BAOC modality.

The results obtained show that 87% of students consider the units of study adequate, 86% of students consider that the advice received was adequate, and on average 87% of the students consider that the BAOC modality met their expectations.

Keywords: MOOC, b-learning, BAOC, perception students, Big Academic Open Course.

1 INTRODUCTION

The number of students requesting entry to undergraduate level in Higher Education Institutions (HEI), increase every year. However, approximately 90% is rejected. The lack of physical and human resources to attend to all students is insufficient [1], [2], [3]. It is necessary to search for alternative modalities that allow more students to be attended with the existing resources in HEIs, as well as the use of virtual learning environments, in order to optimize the physical and human resources available in the institution [4].

The insufficiency of classrooms and lack of teachers limits the attention to a large number of students. In this context, there are proposals that combine face-to-face, b-learning and e-learning modalities, to serve large groups.

In [5] it was examined if the linguistics courses are suitable to be taught in a face-to-face environment, or in a virtual learning environment. A survey was applied with closed and open questions to inquire about the experiences and perceptions of the students in both environments. The results show that students with a higher average prefer classes face to face. It was noted that comfort is the main criterion that students use consistently as the reason to prefer the online linguistics course, this show some effectiveness in online linguistics course.

In [6] a study is presented that assesses the quality of online academic courses, using a multidimensional evaluation of students’ activities and perceptions, using data mining and a survey. Students perceived the workload of the online course as low. In general, the learning experience was high and the students were satisfied.

At the state university of Boise in the United States in [7], they develop online courses with large groups to solve the problems of high-reprobation courses, keeping the learning solid, interactive and attractive experiences. They evaluated the LMS to validate the effectiveness and perceptions of students associated with online courses of large groups. Students’ perceptions of online courses designed and implemented for health problems in large groups are positive.

In [8] is presented a work by university art teachers, who provided first-year students with hundreds of online film images, in a predominantly face-to-face degree course. Qualitative study in which the students formed work teams to analyze the cinematographic images online. The interviews and
surveys applied to the students revealed that their level of learning is related to the teamwork approach quality, they consider that the analysis of the online cinematographic images is enriching when performed as a team, their perceptions associated with the environment Online was satisfactory.

2 METHODOLOGY

Big Academic Open Course is a proposal based on the MOOC modality applied to school courses, approximately 90% of the course activities are carried out online, as in the case of MOOCs [9], this allows a greater coverage. Unlike the MOOC, in the BAOC modality the course is taught in an academic context, where a grade must be assigned to the student at a predetermined time. For this reason, as recommended in [10], there are face-to-face activities to validate that the student obtained the knowledge and skills set in the course objectives. It is not as flexible as the MOOC, however, the use of techniques such as the use of short videos of specific topics [11], interactive multimedia materials for autonomous work (exercises, practical activities and problem solving), allows attend large groups (up to 250 students) [12].

The methodology is organized in 4 phases that are described in [13]:

- Phase 1. Before starting the course;
- Phase 2. At the beginning of the course;
- Phase 3. During the delivery of the course;
- Phase 4. End of the course the evaluation is done,

The application of a survey is added to phase 4 to know the student's perception of the BAOC modality, with the aim of improving the applied methodology.

3 RESULTS

The field test of the BAOC modality was conducted in 8 trimesters to large groups of the Numerical Methods in Engineering course, in the Division of Basic Sciences and Engineering of the Autonomous Metropolitan University (UAM) Azcapotzalco. 1003 students participated. In the UAM, the courses are taught in trimesters (3 per year: winter, spring and autumn), started in the 12-Winter (12-I) term and up to the 14-Spring (14-P) term.

The satisfaction survey that was applied to students who studied Numerical Methods in Engineering course, under the BAOC modality, includes questions to assess the material, attention by the advisors, interaction with classmates and satisfaction with the modality. This survey is based on [14] and was implemented with the LimeSurvey platform [15]. The answers were organized by trimester, the averages obtained in the 8 trimesters are shown in figures 1, 2, 3 and 4.

![Figure 1. Survey: study units seem adequate.](image-url)
Figure 2. Survey: adviser’s response was adequate.

Did you establish good relations with your classmates?

Figure 3. Survey: establish good relations with your classmates.

Did the subject matter meet your expectations in a satisfactory manner?

Figure 4. Survey: subject matter meet your expectations in a satisfactory manner.
4 CONCLUSIONS

The BAOC modality allows attending up to 750 students in a year, using a classroom for 50 students to apply exams, a teacher and an assistant each trimester. BAOC facilitates the advice to solve doubts, the SAKAI platform is used. The class is taught online and recorded, so that it is available to students at any time.

When applying the satisfaction survey, it is observed that, on average, 87% of students consider the study units are adequate. It is observed that in the 12-I trimester the lowest percentage is presented (67.8%), the adjustments made to the course allow that in 14-I the percentage is the highest (96.67%). On average, 86% of students consider that the advice received was adequate.

Regarding interaction between students, it was observed that on average 81% of students consider that they established good relationships with their classmates. The lowest average (65%) was obtained in the 13-P trimester and the maximum in the 14-P trimester was 88%.

Finally, regarding the expectations and usefulness of the modality, it is observed that on average 87% of the students consider that the BAOC modality met their expectations. With a maximum percentage of 93% during the 12-O trimester and the minimum of 83% during the 12-I trimester. On average, 87% of students consider that the modality was useful, having a minimum average in the 13-I trimester (78%) and a maximum percentage (93%) during the trimester 14-P. As can be seen, most students think that the course is satisfactory, functional, and would like to take other courses in that modality.

It is considered that the proposal of the BAOC modality to attend large groups is functional and comparable to the traditional group methodology, with the advantage of optimizing physical and human resources, offering students an alternative to take advantage of and better manage their time, being BAOC well valued by the students.

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REFERENCES


