Good practices, in educational inclusion experiences in a Higher Education Dependence

Buenas prácticas, en experiencias de inclusión educativa en una Dependencia de Educación Superior

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Abstract

The Academic Body of Academic-Administrative Management of an Engineering Higher Education Unit studied school trajectories to contribute to school success in a group of students who a specialized institution warned that their prognosis of permanence in training as engineers was reserved. This study is oriented towards the inclusion of quality members of the Collegiate Corps who undertook the task of preventing their desertion, analyzing each case with the support of academic advice and tutorials. They were presented with various factors that influenced their career transition during this period, from school procedures, special programs, study habits, teaching methods, pandemics, etc. The satisfactory results are shown through a descriptive, historical-logical, documentary method, highlighting that 40% were favorable when they managed to conclude their higher education studies within their academic training.

School Paths, Inclusion, Education

Resumen

El Cuerpo Académico de Gestión Académico-administrativa de una Dependencia de Educación Superior de Ingeniería , emprendió un estudio de trayectorias escolares como una forma de contribuir al éxito escolar en un grupo de estudiantes que fueron advertidos por una institución especializada que su pronóstico de permanencia en la formación como ingenieros era reservado, por este estudio que se orienta en pro de la inclusión de calidad, los integrantes del Cuerpo Colegiado se dio a la tarea de prevenir su deserción, analizando cada caso con apoyo de asesorías y tutorías académicas, durante este periodo se presentaron diversos factores que influyeron en su tránsito a lo largo de su carrera, desde trámites escolares, programas especiales, hábitos de estudio, métodos de enseñanza, pandemia, etc. mediante un método descriptivo, histórico-lógico, documental, se muestran los resultados satisfactorios al destacar que un 40% fue favorable al lograr concluir sus estudios de educación superior dentro de su formación académica.

Trayectorias Escolares, Inclusión, Educación

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Introduction

To achieve a successful education of its students, the academic body academic - administrative management of higher education institutions has conducted several studies. One of them is in favor of a quality inclusive education, through the analysis of school trajectories, looking for positive practices that contribute to obtaining the permanence of students with the support of mentoring and advice. Considering the interactions between actors that intend to have the same purpose, to prevent school dropout, actions have been developed. In this case, they were applied to work with students detected with unique characteristics by a specialized health group that warned of their dropout prognosis at the beginning of their training.

Gil (2021), quotes (United Nations Food and Agriculture Organization, 2015) and expresses that a good practice is about a successful experience, which has been tested and validated, in a broad sense, that has been repeated and deserves to be shared in order to be adopted by as many people as possible.

As Abarca (2015) considers it, citing Pérez *et al.,* (2000) view, school performance is the sum of different and complex factors of the learner. It is measured by the grades obtained with a quantitative assessment, which shows subjects gained or lost, dropout, and degree of academic success.

As mentioned in Palomares (2020), a form of educational management to analyze school trajectories is through academic advice that is part of the integrated management system that operates in the faculty of mechanical and electrical engineering (FIME) of the autonomous university of Nuevo Leon (UANL).

This work added actions such as accompanying tutors with students at risk of dropping out, associated with studies that use tools that provide prognosis regarding their future performance.

The positive result has made it possible to show that in a concert of wills between actors: students, parents, teachers, counselors, tutors, managers, good practices, and success stories can be derived.

Theoretical framework

Ibarra (2021), mentions that education is a right for everyone, there are no limitations due to disabilities; the same for higher education, explaining that to promote learning in vulnerable conditions it is necessary to make "reasonable adjustments" to school content.

According to Roa (2019), educational inclusion should be a possibility for everyone, which refers to diversity, there would be all minorities, if didactics are made possible that allow education for all, it is the educators and the family, the first to accept Diversity, to understand it, educators must participate in training processes, to generate new didactics that enable creativity to address the differences in the classroom.

He in turn calls it functional diversity considering that if they are accepted and have the opportunity to try they will be very creative, so the traditional school must change for creativity to emerge in education. The study of the school trajectory has shown us its close relationship with terminal efficiency, so it is essential to consider the factors of dropout and backwardness since together, they represent a problem that interferes with their school success.

According to Perez (2017), the studies of school trajectories are a tool that can contribute to the improvement of educational programs. This type of research is essential because it allows us to know different dimensions of time, performance, and school efficiency that can influence policies for planning and evaluation of higher education. Palomares (2020) cites Garcia (2011), considers that school trajectories and the academic behavior of an individual, including school performance, approval, failure, average achieved, etc., as the most critical indicators in institutional assessments throughout school cycles.

On the other hand, this issue has acquired relevance through the accreditations of educational programs evaluated by the accreditation council of engineering education, A.C. (CACEI, 2018). The trajectories allow detecting areas of opportunity that influence the establishment of improvement strategies in their study plan and statistics and trends following the regulations of the Educational Program, considering indices such as failure.

This type of study will facilitate the implementation of preventive and remedial programs or measures that contribute to the successful completion of their studies.

Methodology

This study was carried out with the analysis of the documents related to the academic and administrative management, regulations, regulations, and frames of reference linked to the educational context at a higher level in the area of engineering to take into account the considerations that have concerning the issue of academic advice.

A synthetic, analytical method is a form of technical research, a set of intellectual operations that seek to describe and represent documents in a unified and systematic way to facilitate their retrieval. It includes analytical - synthetic processing, which consists of the bibliographical and general description of the source, classification, indexation, annotation, extraction, translation, and the preparation of notices (Dulzaides & Molina, 2004).

The data were organized through descriptive statistics, which facilitated processing the information related to the results obtained from the different study groups that participated in the analysis of the research topic, allowing visualization based on critical characteristic features.

Guevara et al. (2020) cites Martinez (2018) and defines descriptive research in the work "the research process" of Carlos Sabino as "the type of research that aims to describe some fundamental characteristics of homogeneous sets of phenomena, uses systemic criteria that allow establishing the structure or behavior of the phenomena under study, providing systematic and comparable information with that of other sources." As there are no variables, the researcher has no control over the studied phenomenon. It is limited to collecting the information provided by the data collection instruments.

Results

As for the dropout forecast, it is necessary to mention that four students out of the initial fifteen dropped out in the second and third semesters. Six of them showed perseverance with favorable results.

With the collaboration of all actors, five of them are still enrolled in another stage of their training, confident that they will succeed. It may be the subject of another study.

The relevant aspects, such as the learning units that represented the most significant difficulty, are described below employing graphs. It should be mentioned that the qualification to accredit a learning unit is 70.

Graph 1 presents the group of students, object of this study and their general average of the entire career, of the educational programs of Mechanical Electrical Engineer (IME), Mechatronic Engineer (IMTC), Software Technology Engineer (ITS), Engineer in Electronics and Communications (IEC) and Engineer System Administrator (IAS).
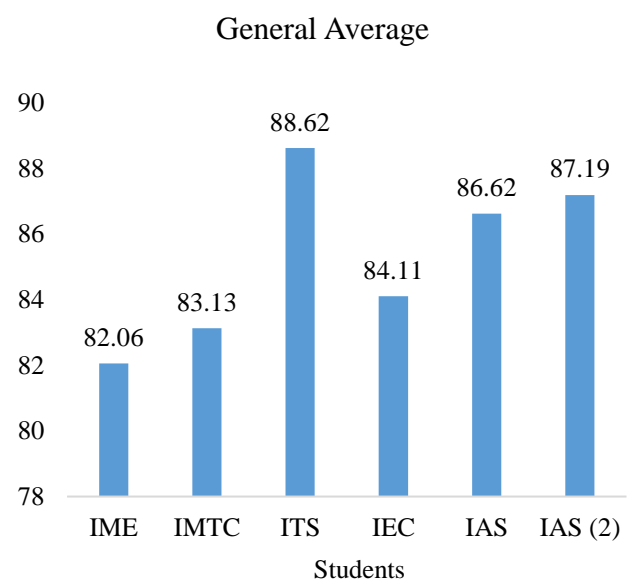

Graphic 1 General Average
Source: Own Elaboration

Shows the semesters in which the total number of students passed without leaving any subject (left column) and in the right column the semesters in which they failed any subject.
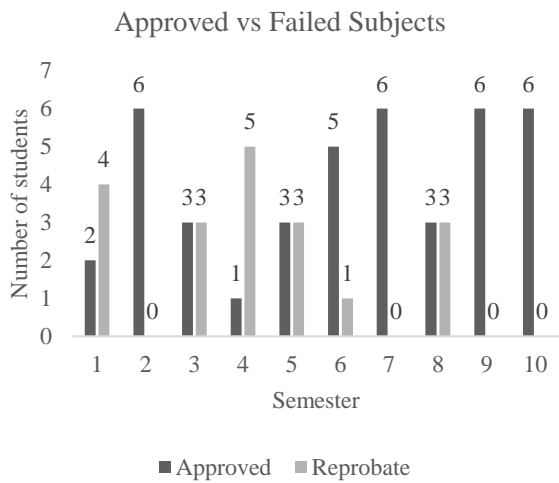
Graphic 2 Subjects passed vs. failed
Source: Own Elaboration

This graph shows the ten semesters that comprise the educational programs of this study, and the number of students who passed in the first opportunity is highlighted semesters: 2º, 7º, 9º, y 10º. Figure 3 shows the general averages of the basic sciences subjects taken by the students already described. It is worth mentioning that the global was obtained from some passed in the second or third opportunity.
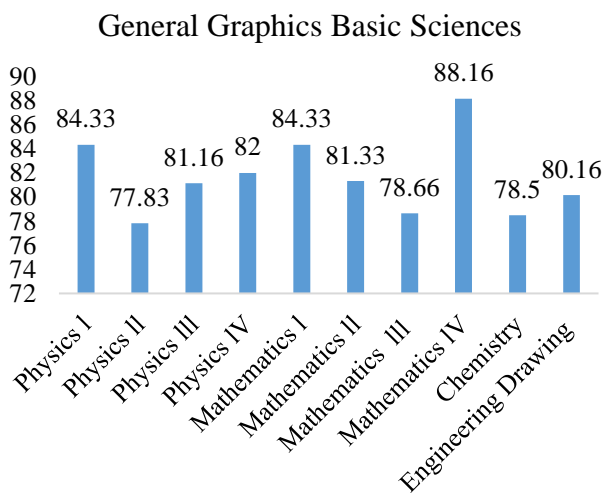

Graph 3 General Graphics Basic Sciences
Source: Own Elaboration

In this graph, we can see that the most challenging learning units for this group were physics II (77.8), followed by general chemistry (78.5), and mathematics II (78.6).
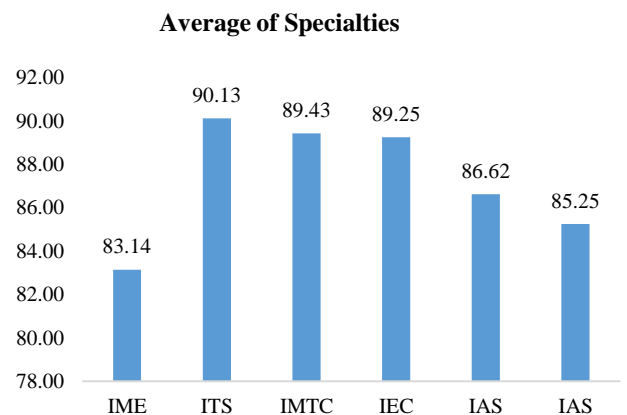
Delgado (2019) mentions in his article "tutoring strategy to decrease the failure rate in chemical engineering of the academic unit of basic sciences and engineering.

"That research in mathematics teaching reflects students face difficulties in understanding, assimilation, interpretation, and application to concrete situations, knowledge related to different topics of this subject. It is a fundamental discipline for university engineering courses. A relevant aspect is shown in figure 4, which describes the overall average in the block of learning units called General University Education (FOGU); of the six students who attended this block, 100% passed in the first opportunity.
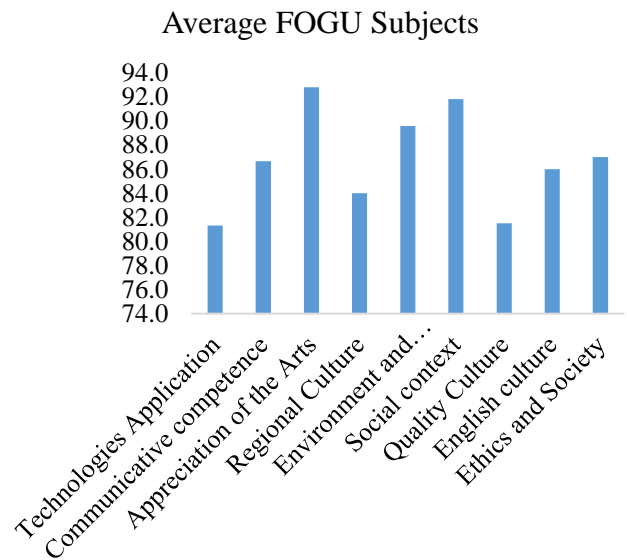
Graph 4 Average Subjects FOGU
Source: Own Elaboration

In this graph, learning units of the university general education (fogu) were accredited on the first occasion with an average of 85 to 90. In the Graph 5 shows the general averages of the specialty subjects of each educational program, highlighting that in the various engineering specialties of the study group, grades above 80 averages of the students with unique characteristics predominate.

Graph 5 Average of Specialties
Source: Own Elaboration

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In this graph, we can see that in the engineering specialty learning units, the average predominates from 82 to 90.

Conclusions

A conclusion of satisfactory results shown in this study is the motivation for the researcher and actors in this process. It is to recognize the work done by teachers, advisers, and students. Since the beginning of the training, their prognosis was not favorable due to the warning signal of the specialized unit of the UANL that applied the selection tests when detecting special characteristics. In addition to a potential school dropout or lag, now with their complete Kardex and school success, they give us the best evidence that the objective was achieved, without a doubt. Parents who were warned promptly, the graduates themselves, teachers and advisors, have been the determining factor for this result.

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