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Artículos Científicos

Estudio evaluativo del Sistema Institucional de Tutorías para el seguimiento de trayectorias escolares

*Assessment Study of the Institutional Tutoring System for Monitoring School
Trajectories*

*Estudo de avaliação do Sistema de Tutoria Institucional do acompanhamento de
trajetórias escolares*

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Resumen

El propósito del presente estudio fue evaluar y reunir información sobre la experiencia y necesidades de los profesores que participan en el Programa Institucional de Tutoría (PIT) y que dan seguimiento y apoyo en las trayectorias escolares de estudiantes de nivel superior. La investigación fue de corte cuantitativo con un alcance descriptivo. El instrumento utilizado fue una encuesta en línea que se aplicó a 114 tutores que están adscritos a las diversas dependencias de educación superior de la Universidad Autónoma del Carmen, donde 43.86 % tiene una experiencia superior a los 10 años como tutor. Entre los hallazgos destaca que el Sistema Institucional de Tutorías (SIT) no cuenta con los indicadores suficientes para realizar un seguimiento de trayectoria escolar eficiente y que 42.11 % de los tutores realiza manualmente un seguimiento individual de acuerdo con su experiencia y necesidades de información. A partir de este estudio se identificaron los indicadores de trayectoria escolar que requieren los tutores para dar un seguimiento exitoso.

Palabras clave: control de rendimiento escolar, deserción escolar, fracaso escolar, indicadores educativos, rezago escolar, seguimiento escolar, trayectoria académica, tutoría.

Abstract

The purpose of the present study was to assess and gather information about the experience and needs of the teachers who participate in the Institutional Tutorial Program (PIT), giving follow-up and support in the school trajectories of higher level students. The investigation was of a quantitative nature with a descriptive scope. The instrument used was an online survey that was applied to 114 tutors who are attached to the various higher education units of the Universidad Autónoma del Carmen, where 43.86% have more than 10 years of experience as a tutor. Among the findings, the Institutional Tutoring System (SIT) does not have enough indicators to monitor the efficient school trajectory and 42.11% of the tutors manually follow up individually according to their experience and information needs. From this study, indicators of school trajectories that tutors require to follow up successfully were identified.

Keywords: control of school performance, school dropout, school failure, educational indicators, school lag, school monitoring, academic trajectory, tutoring.

Resumo

O objetivo do presente estudo foi avaliar e coletar informações sobre a experiência e as necessidades dos professores que participam do Programa de Tutoria Institucional (PIT) e que fornecem acompanhamento e apoio nas trajetórias escolares de alunos de nível superior. A investigação foi quantitativa, com escopo descritivo. O instrumento utilizado foi uma pesquisa on-line aplicada a 114 tutores vinculados às diversas unidades de ensino superior da Universidade Autónoma de Carmen, onde 43,86% têm experiência de mais de 10 anos como tutor. Entre os achados, vale ressaltar que o Sistema de Tutoria Institucional (SIT) não possui indicadores suficientes para acompanhar a trajetória escolar eficiente e que 42,11% dos tutores realizam manualmente um acompanhamento individual de acordo com suas necessidades de experiência e informação. A partir deste estudo, foram identificados os indicadores de trajetória escolar que os tutores necessitam para dar um acompanhamento bem-sucedido.

Palavras-chave: controle do desempenho escolar, abandono escolar, reprovação escolar, indicadores educacionais, atraso escolar, monitoramento escolar, trajetória acadêmica, tutoria.

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Introduction

According to Romo (2011), The tutoring should provide an individual and personalized attention to the students of the superior level, with the purpose that they reach full development taking into account their academic and social situation. Educational institutions must offer, through this type of process, educational services that address aspects related to lag, failure and school dropout (Domingo, Fernández and Barrero, 2016; Vera et al., 2012). So the Autonomous University of Carmen (Unacar), through the General Directorate of Student Services, has implemented the Institutional Tutoring Program (PIT) with the participation of 236 tutors (full-time professors). La Unacar (2018), in its Acalán Educational Model, has defined tutoring as the accompaniment, guidance, advice, channeling and follow-up that the student receives from one or more tutors throughout their school career to optimize meaningful learning, potentialize talents, solve personal and school difficulties and develop effective work and study habits, all of which allow you to be competent in the area in which you develop. Tutoring work requires accompanying the student from admission to graduation and degree, since the quality of educational programs is a function of school performance and the time in which students complete their professional preparation. However, when giving an individual and personalized service to them, it is important to consider the characteristics, conditions and expectations they have when carrying out their academic career (Unacar, 2018).

The tutor is a full-time teacher with experience in teaching and research that serves a group of students by analyzing their academic performance and guides them for their integral development



(Unacar, 2002).

It is the responsibility of the tutors the timely identification of students at risk of dropping out of school, lag, failure or learning obstacles, as well as early intervention to solve these problems (Alvarado, Vega, Cepeda and Del Bosque, 2014; Mendivil and Ponce, 2016; Romo, 2011).

Full time professors assigned to each of the schools or faculties participate in the Unacar PIT. These teachers adopt the role of tutor or academic guide of a group of students. From the moment they enter the institution, each student is assigned one of these, who have the task, among others, of monitoring their school career.

The Unacar, located in the southeast of Mexico, has provided a web application called the Institutional Tutoring System [SIT] (General Coordination of Information and Communication Technologies of the Unacar [Cgtic], 2014) for access to academic information and student staff assigned to the tutor. The SIT allows the registration of the tutorial action plan, the identification of tutors, the registration of individual and group sessions with the tutors, the channeling to other student or support services and consulting the academic history, among other things.

The tutoring has focused for years on personal and academic orientation, on the socialization and channeling of students (Unacar, 2002); However, monitoring has been one of the most important challenges of mentoring because the information is segmented in institutional systems. The SIT does not integrate all the information and many data that may be considered relevant are not yet available in digital media.

Currently, the institution does not provide an information platform that provides sufficient data to detect the lag, school performance problems or students at risk of dropping out, so tutoring is complicated. This situation has led the institution to consider the need to apply reengineering to institutional systems in order to improve access to information. And for this it is of the utmost importance to gather the opinion and needs of the tutors. Consequently, a study was proposed that involved the Unacar tutors in order to identify the information needs to better monitor the academic trajectories of their students. Start point? Determine what educational indicators are required to process.

Method

A quantitative transectional investigation with descriptive scope was carried out in order to specify the methods or techniques that the tutors are using to monitor their students' school trajectories, that on the one hand; and on the other, with the objective of determining the list of indicators or data that they need to improve this process (Hernández, Fernández and Baptista, 2014).

For this study, a survey of eight reagents structured in two sections was designed. The first allows gathering information on the tutorial experience of the respondents; and the second part

integrates questions that gather information on the indicators or data required to formally monitor students. The information was collected through a web application and the invitation was sent to all tutors via email, issued by the Tutoring Coordination of the Directorate of Student Services of Unacar.

The population of tutors who collaborate in the PIT are a total of 236 professors assigned to the eight faculties (higher education units) of Unacar. The sample selection was of the simple probabilistic type, with the voluntary participation of 114 tutors (see table 1 and 2). To determine whether the number of participants was a representative sample of the target population with the appropriate level of confidence for the feasibility of the study, the Cronbach's alpha coefficient was obtained (Table 3). It should be noted that none of the elements was eliminated because none impacts significantly on the aforementioned coefficient (Table 4) (Quero, 2010). The highest percentage of participation was obtained from the Faculty of Health Sciences with 30 tutors, followed by the Faculty of Educational Sciences and the Faculty of Chemistry with 19 participants each (Figure 1).

Tabla 1. Población participante en el estudio

Facultad (dependencia de educación superior)	Tutores	Participantes
Derecho	8	6
Ciencias Naturales	12	10
Ciencias Educativas	26	19
Ciencias de la Información	22	9
Ciencias Económicas Administrativas	40	3
Ingeniería	54	12
Química	26	19
Ciencias de la Salud	48	30
No indicaron	-	6
Total	236	114

Fuente: Elaboración propia

Tabla 2. Resumen de procesamientos de casos

		N	%
Casos	Válido	114	100.0
	Excluido	0	0.0
	Total	114	100.0

Fuente: Elaboración propia

Tabla 3. Estadísticas de fiabilidad

Alfa de Cronbach	Núm. de elementos
0.951	6

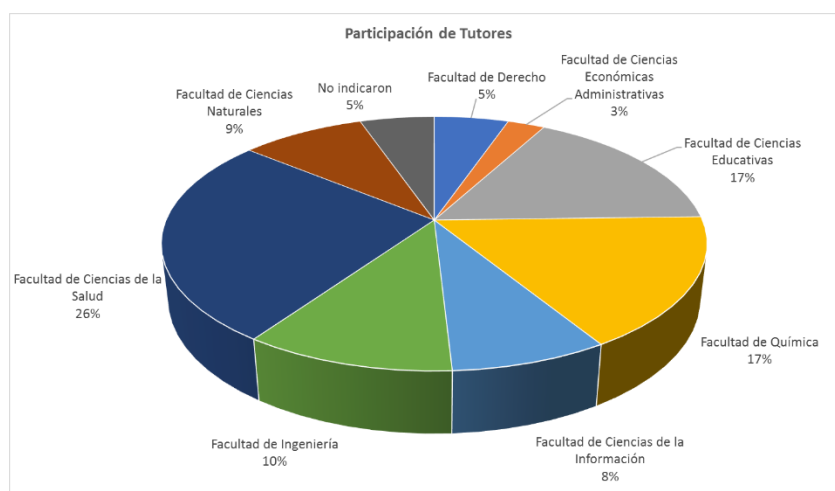
Fuente: Elaboración propia

Tabla 4. Estadística del total de elementos

Elementos	Media de escala si el elemento se ha suprimido	Varianza de escala si el elemento se ha suprimido	Correlación total de elementos corregida	Alfa de Cronbach si el elemento se ha suprimido
Experiencia en el PIT	15.24	24.395	.868	.939
Participación en el PIT constante y dinámica	15.27	24.766	.874	.938
Atención al seguimiento de trayectorias escolares	15.29	24.579	.824	.944
Acceso a la información en el SIT	15.32	25.156	.789	.948
Identificación del estatus de los tutorados	15.29	24.632	.819	.945
Indicadores para el seguimiento	15.18	24.925	.923	.934

Fuente: Elaboración propia

Figura 1. Participación de tutores por facultad

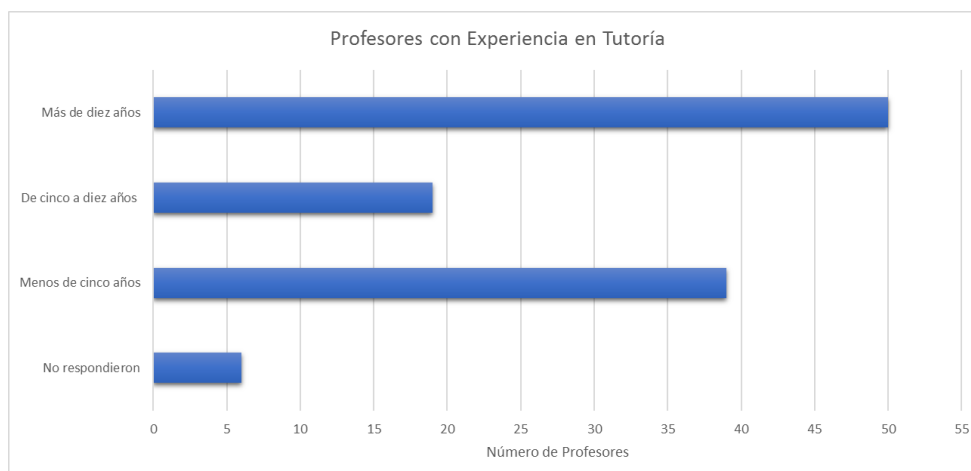


Fuente: Elaboración propia

Results

To give validity and confidence to the opinion issued by the professors, the experience that each one has as a tutor with four questions was investigated. The first was with reference to the number of years he has participated as a tutor in the PIT; the second was related to the average number of tutors served by each of the respondents in each school year. The third question gathers information about the technique or strategy that the tutors use to follow the students' school trajectory, and with the last question of this section, the opinion of the users regarding the SIT in the follow-up of the school trajectories was gathered.

Figura 2. Experiencia de los profesores expresada en años



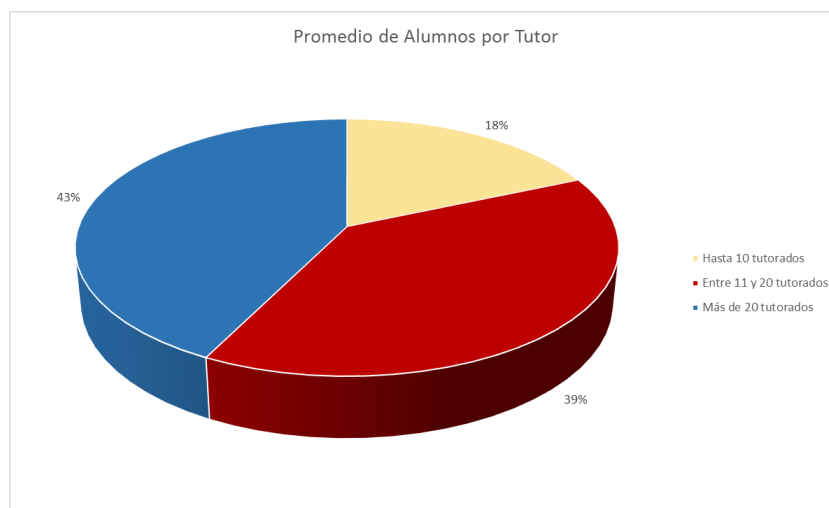
Fuente: Elaboración propia

Regarding the time of experience that teachers have in the participation of the PIT, it was obtained that of the 114 tutors who participated in the survey, 43.86% of them have an experience that exceeds 10 years of tutor and 16.67% have been tutor between 5 and 10 years (Figure 2).

The average number of tutors attended by each teacher is an important factor in this work, not only because the greater the number of tutors the greater the experience, but also because it requires systematic techniques to attend, guide, support and follow-up a large number of students in the same time assigned to perform the tutoring. From the surveys it was obtained that 82% attend more than 11 tutorials per school year, and that of these 43% it exceeds 20 students (Figure 3).

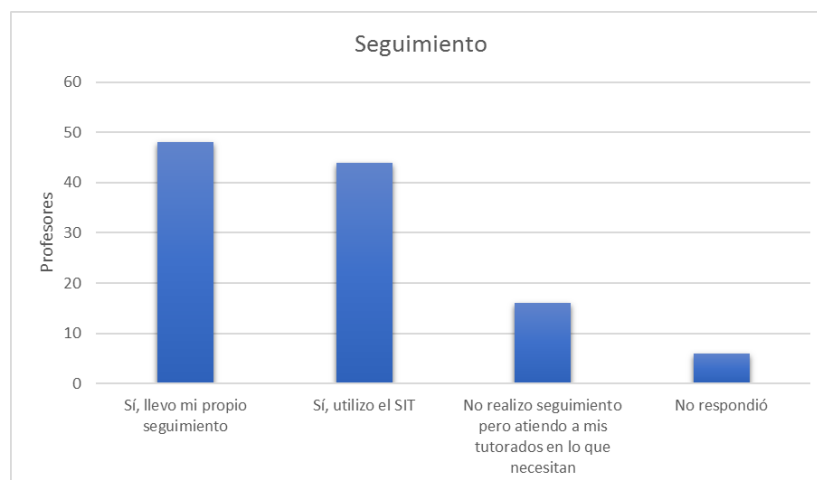
On the other hand, Unacar offers the service of a web application, the aforementioned SIT, which among other functions allows to see the student's academic history, the session log and the realization of channeling; However, the use of the application for monitoring school trajectories was questioned, giving the choice of teachers surveyed among three possible answers: the use of a tutor's own follow-up technique, the use of the SIT and the alternative of not performs a formal follow-up, but the tutoring is limited to attention and channeling (Figure 4). More than 42% of teachers responded that they follow up according to their experience and needs, independently of the SIT. On the other hand, 38.60% say they use the SIT to carry out the tutorial work; while 14.04% do not carry out follow-up activities.

Figura 3. Relación de alumnos asignados a cada tutor en el PIT



Fuente: Elaboración propia

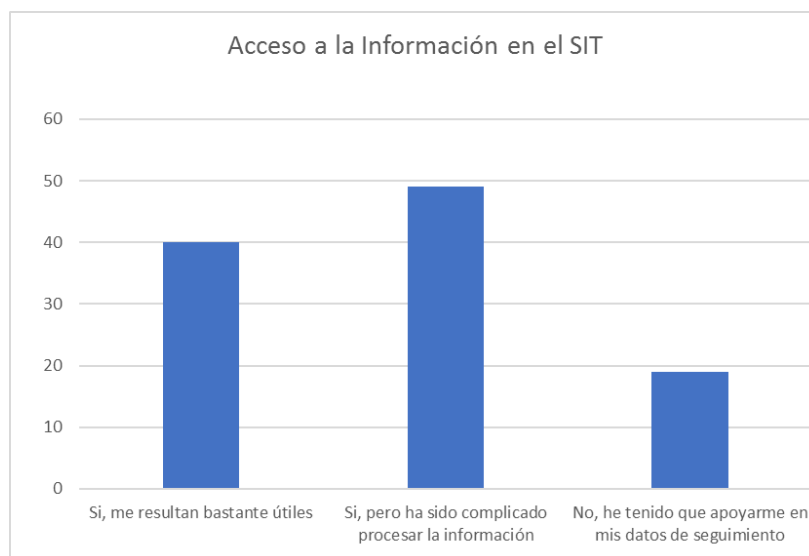
Figura 4. Método para el seguimiento de trayectorias escolares



Fuente: Elaboración propia

Finally, the tutors were questioned regarding the usefulness of the information presented by the SIT (Figure 5). From this it was obtained that 37% are satisfied with the information that can be consulted in the SIT; However, the remaining 63% indicate that it requires the processing of information through other tools, such as spreadsheets, documents, statistical applications, among others.

Figura 5. Acceso a la información de trayectorias escolares desde el SIT



Fuente: Elaboración propia

The second section of the instrument focused on the information needs that need to be met to provide a formal and reliable follow-up of school trajectories, namely, according to Altamira Rodríguez (cited in Ortega, 2015): quantifiable aspects (indexes or indicators) of the advancement of students in their professional studies, from admission, during their stay and graduation.

Tutors were questioned regarding the different terms or indicators that would facilitate the identification of students according to their current academic situation. And as part of this, six statuses were proposed that already exist in other institutional applications, such as the School Control System (SUCE+) and the Executive Portal, which are systems to which tutors do not have access (Table 5). The statuses put to the consideration of the tutors had an approval superior to 45%. On the other hand, tutors were given the possibility of proposing other status indicators for better monitoring of academic trajectories. The most suggested were the identification of students in mobility, at risk of definitive withdrawal, students with lag and students who are about to graduate but have not completed the process of the professional certificate (Table 6).

Tabla 5. Indicadores de estatus

Indicador	Descripción	Porcentaje
Alumno activo	Alumno que se encuentra inscrito en el ciclo actual con al menos un curso en su carga académica.	88 %
Alumno activo sin cursos	Estudiante que se encuentra activo en el programa educativo pero que en el ciclo actual no realizó la carga de cursos.	53 %
Alumno en baja temporal	Estudiante que ha gestionado ante Control Escolar su estatus de baja temporal o presenta el estatus de activo sin cursos por más de un periodo escolar.	59 %
Alumno en baja definitiva	Tutorado que ha gestionado ante la institución su baja definitiva del programa educativo.	45 %
Egresado	Estudiante que ha obtenido su certificado profesional.	48 %
Titulado	Egresado que cuenta con el título profesional.	48 %
Otro	Los tutores propusieron estatus que no se muestran en ningún sistema institucional.	22 %

Fuente: Elaboración propia

Tabla 6. Otros indicadores de estatus

Indicador	Descripción
Alumno en movilidad	Tutorado que se encuentra realizando estudios en otra universidad como parte del programa de movilidad nacional o internacional.
Alumno en rezago	Alumno con al menos un curso reprobado.
Alumno en riesgo de baja	Alumno que ha reprobado el mismo curso al menos dos veces.
Alumno con malla completa	Alumno que ha completado el total de créditos del plan de estudios, pero no ha gestionado el certificación profesional.

Fuente: Elaboración propia

For the study, a series of indicators were proposed to the tutors (Table 7) that consider individuality in the learning process and the attribute of flexible curriculum (flexibility in time and choice of courses) that underpins the philosophy of the Acalán Educational Model of the Unacar (2018). It should be noted that these indicators are available in other institutional systems to which tutors do not have access; They are available to the staff of the School Control area and educational

program managers. In Table 7 it can be seen that all the indicators that were put into consideration obtained an approval level above 50%. Likewise, participants were asked to propose indicators that they were using in their individual follow-up and that were not considered in the proposal, but did not make contributions as they were considered sufficient.

Tabla 7. Indicadores de trayectoria escolar

Indicador	Descripción	Porcentaje
Generación	Periodo escolar de la cohorte generacional al que se integró el alumno.	74.56 %
Ciclos	Número de ciclos largos (18 semanas) que han transcurrido desde su ingreso.	73.68 %
Cursos totales	Número de cursos curriculares que integran el programa educativo.	67.54 %
Cursos aprobados	Número de cursos que ha aprobado el alumno al momento de la consulta.	76.32 %
Tasa de avance	Relación (%) de cursos aprobados en relación con el total de cursos del programa educativo.	67.54 %
Tasa de aprobación	Número de cursos aprobados en primera oportunidad.	65.79 %
Tasa de promoción	Relación (%) entre el número de créditos obtenidos con el total de créditos del programa.	55.26 %
Cursos reprobados	Número de cursos con calificación reprobatoria que tiene el alumno al momento de la consulta.	72.81 %
Cursos activos	Número de cursos que está cursando el alumno en el ciclo actual.	63.16 %
Cursos pendientes	Número de cursos que el alumno debe acreditar sin considerar los que está cursando.	67.54 %
Cursos por acreditar	Número de cursos que no han sido aprobados. Sumatoria de cursos pendientes con cursos activos.	60.53 %
Actividades de formación	Número de horas de actividades de formación integral hasta el momento de la consulta.	69.30 %

integral		
Prácticas profesionales	Estatus del alumno en las prácticas profesionales: acreditado, no acreditado o en proceso.	66.67 %
Servicio social	Estatus del alumno en el servicio social: acreditado, no acreditado o en proceso.	66.67 %
Movilidad	Ciclo escolar en el que el alumno fue beneficiario del programa de movilidad, incluyendo: universidad en donde estudió, país y beca obtenida.	57.02 %
Becas	Listado de becas con las que se ha beneficiado el alumno en cada ciclo escolar.	58.77 %
Seguro facultativo	Número de seguro social. En caso de no tenerlo indicar que no ha realizado el trámite.	55.26 %
Lista de cursos por acreditar	Nombre de cada curso. En caso de haberla cursado se incluye el número de veces que se ha reprobado, indicativo de si lo está cursando actualmente.	57.89 %
Listado por ciclo escolar	Tabla generada por ciclo escolar que incluye: ciclo escolar, estatus del alumno, número de cursos cargados, número de cursos aprobados, número de cursos reprobados, promedio del ciclo.	57.89 %
Egreso	Periodo escolar y/o fecha en que el alumno egresó.	56.14 %
Titulación	Fecha de titulación y modalidad.	53.51 %
Rendimiento escolar	Promedio del alumno considerando la última calificación de cada curso.	70.18 %
Tutor actual	Nombre del tutor asignado en el ciclo escolar actual. Con la posibilidad de ver la lista de tutores asignados en ciclos anteriores.	63.16 %

Fuente: Elaboración propia

Discussion

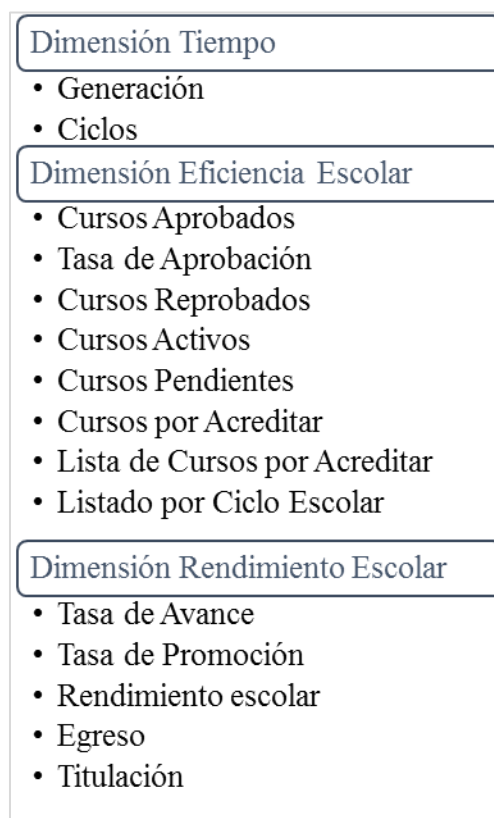
An efficient follow-up of students' school trajectories depends on having sufficient, timely and reliable information to be able to detect and determine the strategies that can solve the various challenges that students and even the educational institution must face. The goal of students is to conclude with professional studies, but for higher education institutions it is also to raise the terminal efficiency index in their educational programs (Rodríguez, 2017; Vásquez, Espino and Olaguez Torres, 2015).

At Unacar, monitoring of school trajectories is a responsibility shared between tutors and educational program managers. However, individual and personal treatment is given between tutors and assigned students. According to the study, 43% of the tutors are assigned more than 20 students to whom they should follow up and support, so it is important to integrate and process the information of each tutor to allow effective and timely accompaniment work.

The effective selection of the indicators will determine the success of the PIT, since with the consultation of the file of the tutorate the possible risks of lag or dropout can be identified. Indicators such as the rate of progress, failed courses and the number of courses to be accredited will allow tutors to establish strategies for student regularization; indicators such as the promotion rate and school performance will favor the identification and recognition of outstanding students (Guevara and Belelli, 2013).

The indicators proposed in this study have a direct relationship with the three dimensions proposed by Chain and Ramírez (1997) (Figure 6): the time dimension, that is, the continuity or discontinuity of the student's studies in relation to their generation, the dimension of school efficiency, which refers to the way in which students pass the courses, and the dimension of school performance, which represents the average or results of the student in the different courses to which he has enrolled.

Figura 6. Clasificación de indicadores



Fuente: Elaboración propia con base en Chain y Ramírez (1997)

On the other hand, indicators have been proposed that do not correspond to any of the dimensions established by said group of authors but that due to the flexibility of the educational model of the institution it is important to consult, among them the activities of integral training, professional practices, social service , the mobility program, scholarships and optional medical insurance.

The study involved the institution's tutors with a voluntary participation of 48%, who contributed with their experience in the PIT and provided useful proposals that will support the improvement of the monitoring of school trajectories. On the other hand, it has been of great value to discover that 45% of the tutors must process the information provided by the SIT with other tools; therefore, a reengineering process in the application should be considered to allow access to information that facilitates the tutorial work.

Conclusions

The Unacar went from having a traditional educational model to an educational model focused on learning with a focus on competencies, which gave flexibility to higher level educational programs and allowed students to choose the courses and the time it may take to complete the courses. professional Studies. However, it is still a challenge to define the strategies that allow higher education institutions in general to overcome the high drop-out, rejection and lag rates, as well as the low rates of terminal efficiency.

Academic tutoring is the means to identify in a timely manner the academic problems presented by students and that directly affect the terminal efficiency of educational programs; therefore, the restructuring of the follow-up of the school trajectories began with the evaluation from the tutor's perspective, with the identification and approval of the individual academic trajectory indicators, which will allow starting a reengineering process in the evaluation and in the follow-up carried out in the PIT through the SIT.

With this study, a series of indicators were proposed that will allow the tutor to monitor the student's current status, achievements and areas of opportunity to achieve graduation according to his generational cohort.

Future lines of research

As future lines of research, it has been proposed to evaluate the access and information needs of the higher level education program agencies so that, together with the determination of a series of indicators and how to measure or calculate them, a solution can be given to the monitoring of school trajectories and access to information. In addition, it could identify and combat other academic problems such as dropout, lag and terminal efficiency.

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Validación	Ricardo Armando Barrera Cámara
Análisis Formal	Ana Alberta Canepa Sáenz
Investigación	Ana Alberta Canepa Sáenz
Recursos	Ricardo Armando Barrera Cámara
Curación de datos	Ana Alberta Canepa Sáenz
Escritura - Preparación del borrador original	Fernando Enrique Sánchez Martínez
Escritura - Revisión y edición	Ricardo Armando Barrera Cámara
Visualización	Fernando Enrique Sánchez Martínez
Supervisión	Ricardo Armando Barrera Cámara
Administración de Proyectos	Fernando Enrique Sánchez Martínez
Adquisición de fondos	Fernando Enrique Sánchez Martínez