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Application of the CSA incremental process in the development of an academic advisory system

Aplicación del proceso incremental CSA en el desarrollo de un sistema de asesorías académicas

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Abstract

This article shows the development of an academic advising software under the premise of an agile development model that is generally considered as a cooperative, simple and adaptive incremental process, particularly referred to in this project as the CSA incremental process. The result achieved, considering that currently the counseling process is done manually in Excel formats, is the automation of the process through the use of software development and information storage tools such as SQL Server Management Studio, Visual Code, Visual Studio 2019 and Angular, contributing to the operation of an information system that allows the optimization of the request for advice, the registration of advisers, the evaluation of the advice provided and the generation of reliable and timely information for decision-making, seeking to improve the institutional indicators that apply to it. Finally, it is important to mention that this document presents the second phase of a technological development project.

Incremental Process, Software, Academic Advising

Resumen

El presente artículo muestra el desarrollo de un software de asesorías académicas realizado bajo la premisa de un modelo de desarrollo ágil que generalmente es considerado como un proceso incremental cooperativo, sencillo y finalmente adaptativo, denominado particularmente en este proyecto como proceso incremental CSA. El resultado logrado, considerando que actualmente el proceso de asesorías se realiza de forma manual en formatos de Excel , es la automatización del proceso mediante el uso de herramientas de desarrollo y almacenamiento de información como SQL Server Management Studio, Visual Code, Visual Studio 2019 y Angular, contribuyendo este software en la operación de un sistemas de información que permita optimizar la solicitud de asesorías, el registro de asesores, la evaluación de las asesorías impartidas y la generación de información fiable y oportuna para la toma de decisiones, buscando mejorar los indicadores institucionales que le competen. Para finalizar, es importante mencionar, que este documento presenta la segunda fase de un proyecto de desarrollo tecnológico.

Proceso incremental, Software, Asesoría Académica

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Introduction

In 2001, the National Association of Universities and Institutions of Higher Education (ANUIES) published that "one of the biggest problems at the undergraduate level in the first semesters are: student failure, dropout rate, low academic performance, and low terminal efficiency" (Chávez & Vargas, 2007). In response to these problems, new proposals for tutoring and advising programs emerge to address these indicators, being tutoring and advising programs one of the main efforts that should work to abate the problems that occur in higher education institutions.

As mentioned by Alvarez (2013), "In the educational model of the European Higher Education Area (EHEA), tutoring is considered as a task contemplated in the responsibilities of a teacher, and one which involves a more personalized interaction between the teacher and the student and in addition to this, it is important to monitor the acquisition of basic skills and guide his or her learning process throughout the degree, thereby guaranteeing adequate academic and professional development".

The 1990s saw the greatest worldwide surge of interest in tutoring. Thus, international and national organizations such as the National Association of Universities and Institutions of Higher Education (ANUIES), and the General Management of Technological and Polytechnic Universities (DGUTyP), have included in their menu of recommendations or in their "strategic lines of development", both in the medium and long term, tutoring as a mechanism to "raise the quality of higher education", based on a more individualized accompaniment to students, within a general framework derived from the idea of making the student the center of learning. (Aguilar, 2012).

According to Romo (2011), "the innovative and quality improvement strategy granted to tutoring is to see it, then, as a viable alternative to help reduce dropout rates and backwardness in higher education. Certainly, it does not actually refer to a new practice, but what is important to consider is that its operation and impact from an innovative perspective, depends on the ways in which it is implemented and organized in an institution".

Since 2016, the Technological University of Southern Sonora (UTS) has implemented an Institutional Program of Academic Advising, considering it, as mentioned by the National Autonomous University of Mexico (UNAM), a support activity that a teacher provides to students, outside their class schedule, in order to overcome academic difficulties in the different subjects they take, or to reinforce their school education (UNAM, 2016). This has triggered the need to automate the academic advisory process through the creation and implementation of a web application that allows managing the advisory request made by the student, the registration of the advisory, the registration of advisors, the assignment of an advisor which may be a student or a teacher, depending on the availability of time and experience in the subject requested to advise. Likewise, to generate reports that provide reliable, accurate and timely information on the advisory services provided and not provided, the evaluation of the advisor on the service provided and the consultation of pending advisory services, thus seeking better decision making and to know their effectiveness. To date, the records on the academic advisory service are carried out manually, using electronic spreadsheets and through the use of online forms as an emergency measure when the COVID-19 pandemic occurred. It is important to mention that since the beginning of this program, the reports generated by the person in charge of it have only been quantitative, in general terms, the reports included the total of advisory services provided in a period, by Educational Program, but not their effectiveness nor if there was any change, favorable or unfavorable, in the academic performance, dropout and failure rates, when the student received the service.

Reaffirming that the objective of the Advisory Program at UTS is to provide timely academic support in the different subjects taken by the students of the different educational programs, so that they reaffirm their knowledge, solve their doubts and develop the habit of being self-taught, which translates into better academic performance, it is also "known that the lack of reliable and valid information hinders actions and analyses that limit the evaluation and confuse the purpose of the programs" (Islas, Baltazar, & Arriaga, 2010).

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The purpose of this research work is to offer academic and technological services in a more efficient and effective way, that support the student community and contribute to the improvement of institutional indicators, as well as to implement an information system to manage and generate reliable information, in a timely and effective way, for decision making.

Problem statement

The National Association of Universities and Institutions of Higher Education (ANUIES), as regulator of public Institutions of Higher Education (IES) in Mexico, points out that in order to fulfill the purposes of the university, it is necessary for each IES to design strategies and implement actions to increase the quality of the integral formative process of students, increase their academic performance, reduce failure and dropout rates, and contribute to the achievement of higher grade average and terminal efficiency rates.

Academic advising in some universities has been implemented as part of the Institutional Tutoring Program, with the purpose of accompanying students academically during their education; however, this service is regularly requested by a very low percentage of students or when the student has already failed.

On the other hand, there is the accelerated development and growth of Information Technology (IT), the administration of educational institutions tends to evolve; however, at present, most of these institutions do not have the vision or the resources to systematize, through the use of IT, the services that are required daily by students, teachers, administrators and the community in general. That is, useful information such as statistics, reports, and indicators that support decision making.

Currently, early actions are being carried out to have a positive impact on the institutional indicators; it is also important to work with the motivating factor in order to achieve a better performance of the participants in this type of programs. However, the process is not controlled, generating a lack of information for decision making and for the successful attention of students.

Considering the above, it is essential for educational institutions to record and monitor, through the use of computer systems, the follow-up and control of academic advisory services, in such a way, that allows them to carry out the analysis of information for the definition of the strategies required to achieve the institutional academic objectives. Likewise, in this sense, the problem could lie in the low grade average that the student community may present on the topics that are taught in the subjects where they present greater difficulties.

Therefore, the lack of computer systems that allow a more accurate and timely measurement of the substantive processes of academic work, gives rise to what Islas, Baltazar, & Arriaga (2010) mention, "This problem is due to the lack of reliable and valid information that hinders actions and hinders analyses that limit evaluation and confuse the purpose of the programs".

Otherwise, having information systems adequate to the needs of any institution would at least allow:

- To offer more efficient and effective academic and technological services that would allow optimizing the advisory process by improving the overall quality of the service to be granted.

- To operate information systems that allow to manage and obtain information with reliable statistics, for decision making and improvement of institutional indicators that concern this process.

Since 2016, at UTS, an academic advisory program has been implemented in which students can request an academic advisory session, through their tutor or directly with the teacher, on the subjects they are taking or on a specific topic. Academic advising is provided to students in teams, individually, in pairs or in groups, normally outside their class schedule.

In order to carry out the implementation of this program, a professor responsible for the academic advisory program was appointed, keeping the records of the sessions manually in an electronic spreadsheets.

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The information required to generate the reports of the teachers with advisory services given, has to be obtained from the submissions made by each teacher, and by doing so, there is information that is usually not recorded or lost and not considered in the quarterly report also, if by the time the registration forms are delivered, the person responsible of the process has already entered the information, these advisory sessions are not considered, even if these were carried out by a teacher. In addition, no statistical reports are generated, only informative ones, which would allow for a more timely follow-up and informed decision making, since the information is not regularly complete or measured. Therefore, senior management or academies cannot make decisions that lead to the improvement of this process. Therefore, because the current process is completely handmade, it is easy to make mistakes in filling out forms, obtaining information and follow-up control, leading to poorly informed or statistically uninformed decisions, resulting in incomplete reports.

Consequently, the current needs can be met by automating the process, through the development of a software that allows improving the academic advisory service and obtaining the pertinent information on time so it can be used for decision making and the improvement of the collection of institutional indicators.

Methodology

According to Maida, EG, Pacienzia, J (2015), the methodology is one of the specific stages of a work or project that starts from a theoretical position and involves a selection of specific techniques or methods about the procedure for the fulfillment of the objectives, likewise, it determines the steps to follow and how to perform them to complete a task. Taking into account the way in which this project was carried out in this second phase and its characteristics, it was decided to use an incremental process, generally used in agile software development methodologies, which was adapted and named, for this project, as CSA Incremental Process, defined in the order in which the acronym is presented, as Cooperative, Simple and Adaptive, given that it is theoretically composed of frequent deliveries with fast cycles, as mentioned by Maida, EG, Pacienzia, J (2015). Figure 1 shows the structure of the CSA incremental process, followed by a description of each of the aspects that comprise it.

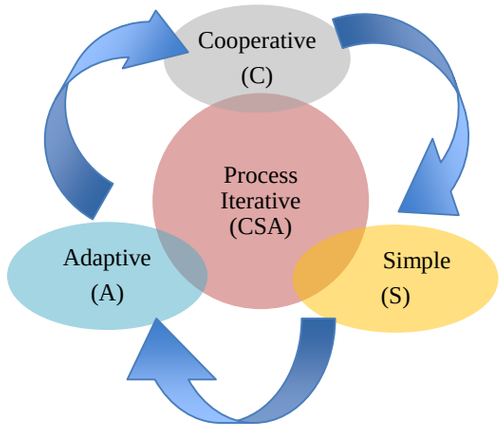

Figure 1 CSA Iterative Process
Source: Author's own (Theoretically based from Maida, EG, Pacienzia, J (2015).)

- Cooperative(C): customers and developers work constantly with very fine and constant communication.

- Simple(S): the method is easy to learn and modify for the team and finally

- Adaptive (A): the ability and flexibility to allow last-minute changes.

The following is a description of how each aspect of the CSA incremental process was applied during the second phase of development of this project:

Aspect 1. Cooperative(C):

In this aspect, both customers and developers held several meetings, first face-to-face and then, due to COVID-19 pandemic issues, through Google Meet. The meetings were held as follows: first, contact was established with those involved before starting the development of the project and the generalities of the project were presented, the requirements that the client had for it, the class diagram currently implemented in the integral system in which the developed software is to be integrated and to finish with the opening meeting, the assignment of roles and activities of each member of the work team was carried out. Communication was also maintained through the use of instant messaging and email to address doubts about the requirements. Following this, the pandemic began and the work team had to adapt to the new way of working, especially the activities that were face-to-face, such as advisory services and/or visits with the client in their work cubicles.

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In compliance with the contingency protocols, meetings continued to be held by Google Meet and with the channels of communication that were established to work and be in contact with those involved in the project. As for the presentation of the project progress, these were done using Google Meet and for very specific and brief points where a synchronous meeting was not necessary, social networks were used. To finalize this aspect, communication was established with some students and teachers of the Software Development area to perform some functionality tests of the system and to verify the existence of possible failures and/or defects that should be addressed in order to have a system operating optimally at the time of its implementation. A very important bond was created between clients and developers.

Aspect 2. Simple(S):

This project is conceived in phase 1 of its development to be worked under the prototyping model and it was possible to finish with that methodology, obtaining, as a result, the publication of a computing prototype and a series of modeling diagrams derived from the client's requirements, all this was done in person, at the university, in face-to-face meetings. The technological tools used for the development were StarUML, Visual Studio 2019, and Microsoft SQL, these technologies were used for the front end and database (DB). Likewise, for the development and administration of the system, the resources used were 5 desktop and 4 laptop computers located in the Office of Innovation and Technology Transfer in Information Technology and Applied Informatics (OITTTIA). Following this, the project continues, but already in phase 2, the development phase, still thinking in the same model and the use of more tools since it would go from being a prototype to a functional software, for that reason new tools were added, such as Microsoft SQL, SQL Server Management Studio, Visual Code, Visual Studio 2019, Microsoft Visio and Angular, without considering yet that the front end would require to be changed and new tools would be added, derived from the situation that was approaching at that time.

This aspect begins to be present, once the pandemic arrived, since it was necessary to add, as part of materials and tools, the remote access of the teams to the DB server from home to be able to continue with the development of the project. Therefore, everything changed for the development team due to the control and prevention measures for Covid and also the lack of access to the University facilities, and the lack of physical contact with the team. This is where other means were established to continue working with the project, technologically speaking and for specific follow-up with the client and its needs, since the infrastructure and materials such as connectivity, software, and human resources were no longer available at the university. Both the scenario and the method were adapted to continue with the development of this project, emphasizing the use of incremental processes and the aspects of Cooperative, Simple and Adaptive, as generally used in agile methodologies, would be the most adaptable method to continue this project, since they are mainly light and enjoyable for people who are constantly communicating with the client and who are not entirely accustomed to following processes, much less in the present situation.

In addition to the above, virtual training of HTML, CSS, and Bootstrap were carried out from home, using platforms where UTS has free subscriptions such as Edx, Académica, and Udemy, in a particular way with its own resources, in order to address some aspects of the development of the project and to make the necessary adjustments in the planning and management of resources such as the loan of computer equipment in support of the pandemic situation present at that time. The class courses, even in a non-pandemic situation, were on the Angular framework used to develop the system, this training took approximately 3 weeks.

Aspect 3. Adaptive (A):

This aspect was applied once the training was carried out and the developers were already trained to deal with changes without the daily presence of the clients and to solve any problem that arose.

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Once the client had been presented with the progress of each of the modules of the advisory system, in terms of design and functionality of the software under development, several adjustments were made to the modules because those responsible for the advisory process were discovering the need to adapt new functionalities, also, through the process of validation and verification of the software requirements, in one of the meetings, it was detected that some elements did not exist and that it was necessary to have them in order to make its operation more optimal and the information it generated, more accurate and timely. During the last period the team continued with the development of the web API (Application Programming Interface) for each of the assigned modules, these APIs were developed in C# and ASP.NET. Some changes were made to the web API since another database was added to complement the system, with this there were already 2 databases.

Once the web API was finished, the team continued with the development of the components that had been incomplete in the Front End, some adjustments were made in terms of system design, code was optimized, the requested changes were made in the last presentation of the modules mentioned, to adapt them to the new changes that were made in the web API and leave the system finished and functional to later use the corresponding testing process. In addition, the current class diagram of the integral system was integrated with the class diagram resulting from the changes requested by the client, since they could not, in the first instance, be fully integrated due to the diversity of changes that were applied at the last moment to the academic advisory system developed.

The system access data was shared with the program coordinator so that he could test and evaluate the advisory system to be implemented in order to improve the service and information management. Likewise, other users played the role of students, teachers, advisors, and tutors.

It is important to mention that due to the confinement, the project has not been able to be implemented, because there is still no access to the university facilities to make the necessary configurations in the server where this software will be hosted. However, remote access was enabled in order to test with a copy of the database.

The system is complete, according to the requirements and with the database tables that were provided.

The third phase of this project will be the implementation and evaluation of the software to measure the impact on some of the institutional indicators such as: academic performance, dropout and student failure rate, student retention, graduation, and graduation rate of those students who received advisory services versus those who did not. Also, some of the variables to be considered are: immediate academic performance through the passing of exams or the improvement in test performance, the increase in their grade, the understanding of the topics, improvement in overall grade point average, and increase of graduated students.

Results

The results that have been obtained so far in the second phase of this project is the redesign and coding of the interfaces of the academic advisory software whose general objective is to offer academic and technological services in a more efficient and effective way that supports the student community and allows an improvement in institutional indicators. Each of the interfaces that make up the developed software is presented and described below, showing the basic process that must be followed to request an academic advisory, execute the advisory, evaluate the advisory and obtain the report of the status of the service received.

In Figure 2, the Login interface, the user with registration and password assigned at the beginning of his studies will be able to log in to the system.

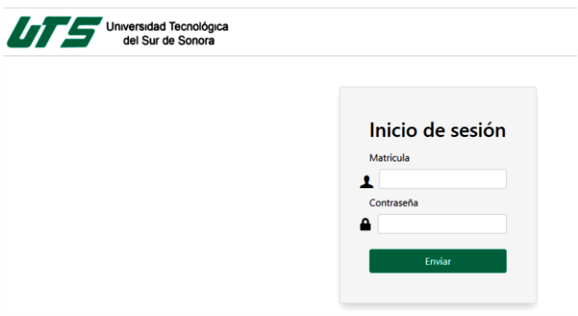

Figure 2 Login Interface
Source: Own elaboration

Following this, in Figure 3. The options menu, the users (advisor, student, teacher, coordinator) can access the options, according to the level of access they have, to request the advisory service, register advisors, evaluate the advice received and register the advice, the user must be logged in beforehand.

Figure 3 Option menu
Source: Own elaboration

On the other hand, in order to start the advisory process, it is necessary to register the advisors and enter the data shown in Figure 4.

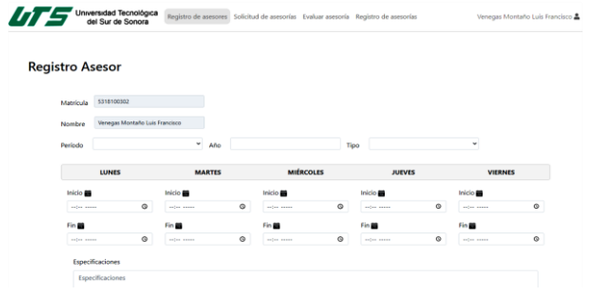

Figure 4 Advisor registration
Source: Own elaboration

Figure 5. Shows the counseling request that the student must make in order to receive the service from an advisor who has the availability and knowledge of the topic requested by the student.

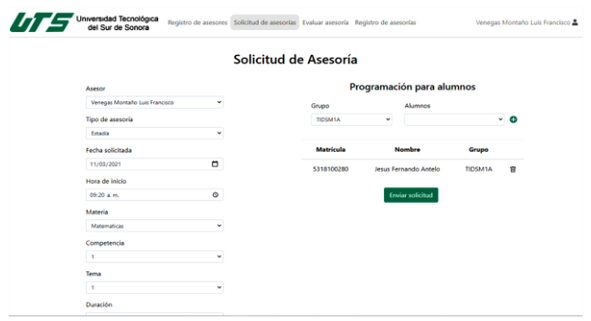

Figure 5 Request for advice
Source: Own elaboration

In Figure 6. Advisory Registration, the advisor, once the advisory is given, proceeds to register it and specify whether the student attended or not in order to give him/her a grade. The student must evaluate the advisory.

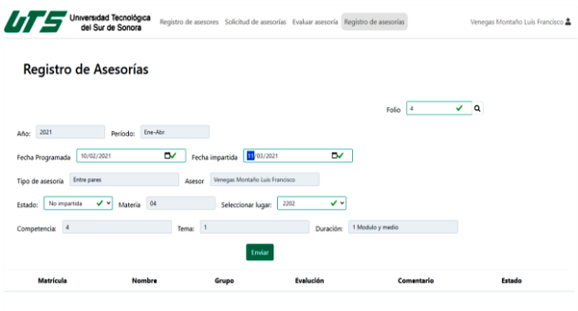

Figure 6 Advisory record
Source: Own elaboration

In Figure 7. Evaluate Advising, once the requested advising has been given, in the end, the student will have to evaluate the advisor and/or the advising in general.

Figure 7 Evaluate advisory
Source: Own elaboration

In Figure 8. To generate reports, the advisory coordinator will be able to generate reports of the recorded advisories, whether they have been given, not given, or in process.

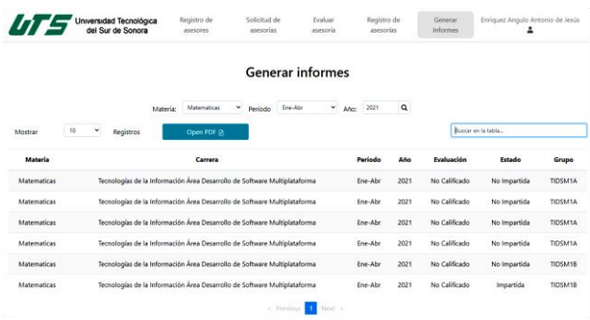

Figure 8 Generate reports
Source: Own elaboration

Figure 9. Report of advisory services given and not given shows a sample of those advisory services that have not yet been given to the student who requested them.

Materia	Carrera	Periodo	Año	Evaluación	Estado	Grupo
Matematicas	Tecnologías de la Información Área Desarrollo de Software Multiplataforma	Ene-Abr	2021	No Calificado	No Impartida	TIDSM1A
Matematicas	Tecnologías de la Información Área Desarrollo de Software Multiplataforma	Ene-Abr	2021	No Calificado	No Impartida	TIDSM1A
Matematicas	Tecnologías de la Información Área Desarrollo de Software Multiplataforma	Ene-Abr	2021	No Calificado	No Impartida	TIDSM1A
Matematicas	Tecnologías de la Información Área Desarrollo de Software Multiplataforma	Ene-Abr	2021	No Calificado	No Impartida	TIDSM1A
Matematicas	Tecnologías de la Información Área Desarrollo de Software Multiplataforma	Ene-Abr	2021	No Calificado	No Impartida	TIDSM1B
Matematicas	Tecnologías de la Información Área Desarrollo de Software Multiplataforma	Ene-Abr	2021	Muy Buena	Impartida	TIDSM1B
Matematicas	Tecnologías de la Información Área Desarrollo de Software Multiplataforma	Ene-Abr	2021	No Calificado	No Impartida	TIDSM1A
Matematicas	Tecnologías de la Información Área Desarrollo de Software Multiplataforma	Ene-Abr	2021	No Calificado	No Impartida	TIDSM1A

Figure 9 Report of advice given and not given
Source: Own elaboration

Figure 10. Evaluation of advisory given, the evaluation made by a student on the advisory he/she received is shown.

Materia	Carrera	Periodo	Año	Evaluación	Estado	Grupo
Matematicas	Tecnologías de la Información Área Desarrollo de Software Multiplataforma	Ene-Abr	2021	Muy Buena	Impartida	TIDSM1B

Figure 10 Assessment of advice given
Source: Own elaboration

Before concluding this section, it is important to mention that as part of the results of this project, the integration of a domain model was obtained, in which the different entities and relationships are described, as well as the restrictions that will have to govern the integral information system of the university due to the different modifications requested by the client. See Figure 11. Integral domain model

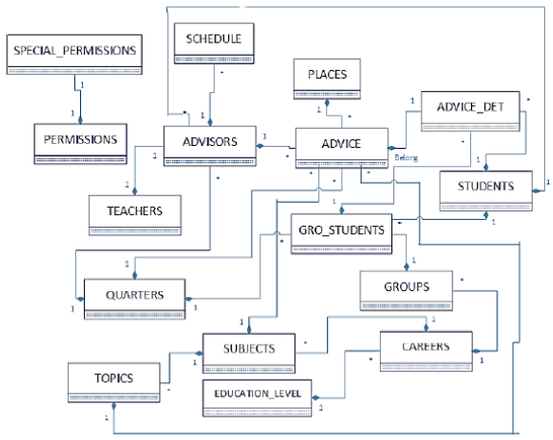

Figure 11 System domain model
Source: Own elaboration

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To the Technological University of Southern Sonora and especially to the members of the Center for the Development and Application of Information and Communication Technologies (CADTIC) and collaborators, for their support in the development of the project.

Conclusions

What has been exposed throughout this work allows reaffirming the importance of the academic advisory process in educational institutions, especially in the Technological University of Southern Sonora (UTS), it also expresses the importance of having this process automated, but not only for its control and continuous improvement but also as a source of reliable information for the formulation of strategies aimed at reducing the indicators of student failure and dropout rate. It is worth mentioning that these indicators were increased as of May 2020, the date on which the educational service at UTS changed from face-to-face to virtual.

The methodology exposed throughout this document and used for the development of this project allowed the constant adaptation of the requirements as they were changing as a consequence of the confinement derived from the pandemic, it is also important to mention that communication was key for the collaboration between the different actors and this allowed to identify deficiencies in the current process that, if not addressed, would have been inherited to the automated process.

To conclude, it is important to mention that the software developed increases the availability, control, and overall quality of the academic advisory service at UTS; however, it is still necessary to determine to what extent this increment occurs, i.e., what is the impact of the software on the Advisory Program, and furthermore, it is necessary to define how the direct impact of the advisory services on the student failure and dropout rate will be measured.

The subjects involved in the development of this advisory software and the documentation generated from it are mainly the members of the Center for Development and Application of Information and Communication Technologies (CADTIC), being the research group responsible for monitoring compliance with the functional requirements of the system and the relevant management in each of the tasks to be performed, the Coordinator of the Academic Advisory Program and two students with the function of research assistants, all actors belong to the Technological University of Southern Sonora.

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Finally, it is necessary to point out that in each of the aspects of the CSA iterative process, the necessary inputs for the development of the project are mentioned.

References

Álvarez, P. (2013).La tutoría como eje articulador del proceso de aprendizaje del alumnado. Qurriculum Magazine Year 2013, Number 26, page 73. Retrieved from https://riull.ull.es/xmlui/handle/915/4440

Aguilar, J. (2012). The configuration of tutoring at the Technological University of Tijuana: teaching narratives. Journal of higher education, 41(164), 99-121. Retrieved from http://www.scielo.org.mx/scielo.php?script=sci_arttext&pid=S0185-27602012000400004&lng=es&tlng=es

ANUIES (2015). Higher education statistical yearbooks. Retrieved from http://www.anuies.mx/iinformacion-y servicios/informacion-estadistica-deeducacion-superior/anuario-estadistico-deeducacion-superior

Chávez, R., & Vargas, C. (2007). The role of academic advising in tutoring programs: ITT case. Tiempo de Educar, 8 (15), 9-36. Retrieved from http://www.redalyc.org/pdf/311/31181502.pdf

Islas, C., Baltazar, E., & Arriaga, C. (2010). The use of information systems as support for the consolidation of the CUAltos Institutional Tutoring Program. In El impacto de la tutoría en las instituciones de la región Centro Occidente de la Anuies (189-196). Guadalajara, Jalisco, Mexico: Amaya Ediciones.

Maida, EG, Pacienzia, J. (2015). Software development methodologies [online]. Thesis of Bachelor's degree in Systems and Computer Science. Faculty of Chemistry and Engineering "Fray Rogelio Bacon". Universidad Católica Argentina. Available at:http://bibliotecadigital.uca.edu.ar/repositorio/tesis/metodologias-desarrollo-software.pdf.

Romo, A. (2011). La tutoría, una estrategia innovadora en el marco de los programas de atención a los estudiantes. Mexico City: National Association of Universities and Institutions of Higher Education, 72-84. Retrieved from http://publicaciones.anuies.mx/pdfs/libros/Libro225.pdf

National Autonomous University of Mexico, College of Sciences and Humanities (2011). Programa Institucional de Asesorías. Retrieved from https://www.cch.unam.mx/sites/default/files/PIT.pdf.

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