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Post-Pandemic Remote Supervision and Evaluation in Higher Education Academic Programs

Evaluación y Supervisión Remota Post-Pandemia en Programas Académicos de Educación Superior

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Abstract

The aim of the research presented is to implement the process of evaluation and remote supervision of academic programs (AP) of the Incorporated Institutions (II) to a Mexican University, through a integral information system to record the level of compliance with each of the quality indicators and standards. It is justified from a gap in the post-pandemic remote academic-administrative evaluation and supervision process, for the fulfillment of curricular criteria and indicators, by not incorporating the use of ITC in these processes through an information system for the adequate supervision of AP. The methodological design focuses on a qualitative, exploratory-descriptive study, a case study method, with a non-probabilistic sample of 10 higher education institutions. The results show the need to incorporate ITC in these processes, to systematize the information for both face-to-face and remote processes. Consequently, a Integral System of Evaluation and Academic Supervision for Higher Education was developed that allows obtaining efficient results systematically and permanently from the evaluation and supervision of the AP of II, to record the level of compliance of each one of the quality indicators and standards.

Evaluation, Supervision, Academic Program, ITC, Information Systems

Resumen

La investigación que se presenta tiene como propósito instrumentar el proceso de evaluación y supervisión remota de programas académicos (PA) de Instituciones Incorporadas (II) a una Universidad Mexicana (UM), mediante un sistema integral de información para registrar el nivel de cumplimiento de los indicadores y estándares de calidad. Se justifica a partir de un vacío en el proceso de evaluación y supervisión académico-administrativa remota post pandemia, para el cumplimiento de criterios e indicadores curriculares, al no incorporar el uso de las TIC en estos procesos mediante un sistema de información para el adecuado seguimiento de PA. El diseño metodológico se enfoca en un estudio cualitativo, exploratorio-descriptivo, método de estudio de caso, con muestra no probabilística de 10 II de nivel superior. Los resultados muestran la necesidad de incorporar las TIC en estos procesos, sistematizar la información tanto para los procesos presenciales como remotos. En consecuencia, se desarrolló un Sistema Integral de Evaluación y Supervisión Académica para Nivel Superior para obtener resultados eficientes de manera sistemática y permanente de la evaluación y supervisión de PA de las II, con la finalidad de registrar el nivel de cumplimiento de cada uno de los indicadores y estándares de calidad.

Evaluación, Supervisión, Programas Académicos, TIC, Sistemas de Información

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Introduction

Currently, the use of information and communication technologies (ICT) has become essential in the daily life of human beings, the above was accentuated with the health emergency by COVID-19 decreed in March 2020 (DOF, 2020). Consequently, the world experienced changes in various economic, labor, social and educational environments, where traditional ways of acting had to change suddenly. Therefore, ICTs are key tools for the development of all the aforementioned sectors, hence the vast majority of people have found it necessary to use, train and apply them.

Due to the above, the educational institutions mostly had to improvise the distance modality at first; subsequently, they have gradually adapted to the integration and use of ICT. In other words, the transition from face-to-face to non-attendance (remote), or mixed (hybrid), directly affecting the teaching-learning models that had to be adapted. However, as García (2020) points out, all these changes present challenges in the proper use of ICT, where digital gaps have further marked social and economic inequalities.

In this sense, higher-level educational institutions incorporated into a Mexican University (UM) were no exception. These institutions must adhere to the institutional regulations of the UM that allow them to operability of their plans and programs. Therefore, they carry out permanent academic evaluation and supervision processes by the University, to verify, on the one hand, compliance with the incorporated programs; on the other hand, the foregoing contributes to the strengthening of their plans and programs in order to join accreditation processes to promote the improvement of the quality of education, through evaluation processes through both national and international accrediting bodies.

For this purpose, the Mexican University conducts on-site academic supervision and evaluation processes for each of the PAs of the incorporated institutions, based on a series of categories and indicators already defined. However, derived from the Covid 19 pandemic, these processes also had to move to a virtual mode.

It should be noted that under this circumstance, like other HEIs, the absence of a systematization of information in their academic supervision and evaluation processes for these PAs is evident, which facilitates and helps to achieve their quality assurance. Therefore, the purpose of this study focuses on implementing the process of evaluation and remote academic supervision of PA from II to UM for accreditation purposes, through the design and implementation of a comprehensive information system in order to record the level of compliance with each of the quality indicators and standards. It is important to mention that academic evaluation and supervision is essential so that the UM can verify the proper compliance and operation of these institutions, consequently being able to guarantee the pertinent training of its students.

Therefore, the antecedents that are supported by empirical evidence that support the problem will be presented. A review of both empirical and scientific literature is carried out focused on the use of ICT, information systems, systematization and academic programs to achieve accreditation, consequently moving towards the assurance of their quality. Studies were extracted based on certain selection criteria, which are supported by current references in specialized databases in higher education that allow validity and relevance to the study. A methodological design was defined with a qualitative, exploratory-descriptive approach, a case study, where the findings of the instruments applied to a sample of the institutions incorporated into the Mexican University will be shown. Consequently, it will be possible to propose pertinent strategies that help to achieve the academic objectives of future post-pandemic school periods under similar contexts (modality: face-to-face, remote or hybrid). Finally, a series of conclusions will be presented.

Developing

This study focuses on the academic programs of the institutions incorporated into a Mexican University, where their instrumentation had to be addressed due to the COVID 19 pandemic; as a result of the sudden change from a face-to-face teaching system to a virtual one.

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Therefore, the processes of evaluation and supervision of the PA of the II, by the University were also affected, highlighting that these processes were carried out in person and with information on physical (paper) mostly (evidence) . With the COVID-19 pandemic, at first, face-to-face academic-administrative evaluations and supervision were suspended, restarting eight months later. On the one hand, the process had to adapt to the new reality, where the procedure together with the information had to be modified and systematized; on the other hand, the staff had to be trained for this purpose, taking into account their limited knowledge in the management of digital resources for this purpose.

It should be noted, for example, that before the pandemic, the academic evaluation and supervision process of the PAs was carried out in person through evaluation and supervision visits to the Incorporated Institutions. The results obtained are mostly in physical documents, which makes the integration and analysis of data and information difficult from the pandemic. Additionally, the UM detected in some II lack of adherence to the institutional normativity, this is reflected in a low academic quality and in a variable operation of the academic programs that is different among the Institutions Incorporated to the University, a situation that deserves the name and academic prestige this one.

The project is based on the following needs in the UM: a) Obtain timely academic data and indicators from the Incorporated Institutions; b) Optimize the supervision process of the incorporated institutions; c) Reduce the time of attention in procedures and services offered to students of incorporated schools. In this sense, it is important to highlight that the built-in system (SI) is distributed in 31 municipalities of the State of Mexico, in Mexico; It is made up of 51 institutions that offer upper secondary level studies, five professional studies and 10 more both educational levels. Enrollment at the Higher Level for the 2019-2020 school year was 8,261 students. The educational offer of the incorporated system is made up of 22 undergraduate study plans in different training fields: social sciences, economic-administrative sciences, architecture and design, exact sciences and engineering, as well as the health area, which translate into 67 educational programs for professional studies implemented by these institutions.

The university evaluates and supervises 100% of the II, where aspects such as regulations, study plans and programs, teaching staff, academic bodies, specifically student support services, educational guidance, tutoring and academic advising, as well as scholarships are verified. . Therefore, the purpose of this research is focused on implementing the process of evaluation and remote academic supervision of PA from II to UM for accreditation purposes, through the design and implementation of a comprehensive information system in order to record the level of compliance with each of the quality indicators and standards.

1. Background

Distance education (DL) has allowed changes in current relationship models and in the global behavior of society. However, the benefits that technology offers to this educational modality should be seen as the tools that facilitate education and depend on it, and not the other way around (UNESCO, 2019). In this sense, it is not possible to speak of DL in the 21st century without referring to ICT, in addition to computer-mediated communication and virtual training or learning environments (EVF / AVA). Salinas (2018) points out that new learning environments will not replace traditional classrooms, rather they allow them to be complemented or transformed; Likewise, the educational offer of the institutions is diversified.

It is clear that during the first months of the COVID-19 pandemic, in the educational field the improvisation of academic activities to be carried out digitally and virtually prevailed using ICT as a medium. As time has passed, as indicated by Corral and Corral (2020), countries have designed and adapted academic programs, which use digital media for their implementation, making evident the challenge that it has represented for the educational system and that it continues to be present. as long as the situation of the COVID-19 pandemic does not stabilize. As well as, Romero, et al. (2020) derived from the variants that have been presented worldwide. Consequently, the processes of evaluation and supervision of AP, in all educational institutions have also had to be transformed in the same way (CIEES, 2021),

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2. Theoretical framework

The study is based on the analytical theory of data information (Arduin, et al (2015), in order to provide objective and accurate information to have the information necessary for making strategic decisions, making it possible to maintain the competitiveness of organizations through the application of prospective scenarios.

3. State of the art

León, Bringas and Encinas, (2018), in their work regarding the comprehensive system for academic information management in higher education, state that the use of ICT in Universities is presented as an engine of change and adaptation for new ways of doing things, which directly impacts society. Hence, they point out that these allow "the automation of processes of a typically repetitive or administrative nature, making use of operational or transactional information systems (IS). These systems have facilitated organization, solving the operating needs of the institutions "(p. 59). Likewise, they have come to facilitate the evaluation processes of their AP both internally and by external accrediting bodies, taking into account that they always seek educational quality.

Where, the IS facilitate both the management of the information and the evaluation processes and at the same time they become indispensable tools that are used in decision-making. These authors concluded that "the comprehensive information system facilitates the construction of the necessary evidence during the evaluation processes to seek accreditation or re-accreditation of an educational program" (p. 64). In this sense, it is clear that the systematization of academic-administrative processes makes it possible to have the necessary and precise information for the analysis of results, as well as decision-making.

Rodríguez, Bastidas, and Ramírez-Anormaliza (2021) mention that an information system consists of having and providing information to the organization, regarding the other systems and processes, the information that is required in a timely manner, which allows the prospective of the organization for decision making concerned.

Hence, these authors highlight the importance of both ICT and information systems in the platform they developed for the Bolivian Technological Institute of Technology, where "integration and improvement of management in the institute is achieved and contributes to the change in the management of internal processes" (page 3) and external processes for evaluation.

For his part, González (2021) points out that the pandemic and post-pandemic by COVID-19 has become a challenge for all educational institutions worldwide, where the incorporation of ICT is necessary and inevitable as part of their processes of teaching learning; Likewise, the author mentions that this adaptation to virtual environments is the opportunity to put aside an obsolete education, where ICT as tools have been consolidated as part of various processes in the field of education. In agreement, Serrano, (2021) argues that the use of ICTs significantly influences the educational quality of AP; However, it is necessary to carry out educational reforms in the HEIs to regulate their implementation in the operation of the AP, in addition to that they must have the necessary conditions in terms of technology and infrastructure.

4. Methodology

The methodological design of this research for the fulfillment of the purpose of the study, focused on the design of instruments addressed in the field work. Research techniques such as observation, questionnaire, and content analysis were used. The questionnaire sought to propose a comprehensive information system for academic evaluation and supervision that allows, on the one hand, the UM to have orderly, updated, concise and precise information; as well as incorporated educational institutions. The proposal was supported by the Higher Level Academic Supervision Guides that are applied for evaluation and supervision and in situ at the UM. In this way, the research results were supported by the application of valid research techniques by experts in the field, as was the case with the questionnaire. For the development of the study, a population of 30 higher-level educational institutions incorporated to the UM was considered, for the application of the questionnaires in order to know their needs, strengths and weaknesses in terms of the academic supervision evaluation process in situ.

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The questionnaire was addressed both to the directors of each of the II and to the academic supervisors of the UM. It was structured as follows, the first section focused on the data of the educational institution; The second section referred to the operational characteristics of both the academic evaluation and supervision process and the guidelines for that purpose. A third section, on the integration of ICT to the academic evaluation and supervision process.

The questionnaire was applied to a sample of 20 directors of the institutions incorporated to the UM, as well as 10 academic supervisors. The results show: in the second part of the questionnaire, 95% of the sample agreed that the remote academic evaluation and supervision process should be systematized. In the third part, 100% of the sample indicated the need to have an information system, essential to concentrate and process information more easily and quickly, to facilitate operation among all the actors involved (University, incorporated institutions , academic supervisors). After obtaining the results, the data was extracted, ordered and processed, which facilitated the interpretation of the information.

The findings reveal the coincidence in their results and make evident the need for the higher level incorporated institutions to have information systems in their processes of self-evaluation, evaluation and academic supervision of their plans and programs, incorporating or supporting the use of ICT, for your benefit by having complete and updated information on your AP. Consequently, the Comprehensive Information System for Academic Evaluation and Supervision (SISAII) in Incorporated Institutions of Higher Level is developed, which is described below:

5. Architecture

The SISAII uses custom software development, designed to operate through the Internet making use of a transactional database and linked to a free software tool used to collect data and information based on a survey model. . Access to the system is based on roles: administrator, supervisor and head of the incorporated institution.

The system is made up of two components:

– Institutional surveys, the adaptation of the free software LimeSurvey was carried out to collect the data and information derived from the academic evaluation and supervision exercises that are carried out periodically at the incorporated higher-level institutions.
– Information system, set of Web modules that extract the information from the evaluation and supervision processes housed in the Institutional Surveys database; They allow the registration of improvement plans and issue reports and reports on the study plans of each incorporated institution. It contains an administration section that enables the configuration of academic supervision and evaluation periods or processes; In addition, it facilitates the administration of the incorporated institutions, as well as their incorporation history.

As a technological base, Laravel was used as a development framework and MySQL as a database manager, as well as Apache as an application server. The system interface is responsive, self-adaptable to mobile devices. The security scheme is based on the use of username and password and the inclusion of a security certificate. It is linked to the institutional authentication web services and the human resources services to verify the validity of the supervisory personnel. It is also optimized for use in the Chrome browser.

6. Models / Practices

The SISAII was managed in accordance with the UM Quality Management System based on the ISO 9001: 2015 standard; Likewise, the technological service was processed based on the Service Management System of the Information and Communication Technologies Directorate also of the University under the ISO 20000-1: 2013 standard.

Regarding the development or construction, the agile software development framework Scrum was used. The GitLab platform was used for code management and application deployment in a production environment.

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The quality assurance was carried out by means of the design of test matrices that were validated by the quality personnel of the UM. The system was evaluated in its safety at the application and production environment level; The vulnerability analysis was carried out using the institutional security tool and had the approval of the security personnel of the Directorate of Information Technologies and Communications of the UM.

7. Transformation of Educational Practices Through ICT

In this project, ICTs are integrated into the process of evaluation and academic supervision of higher level II focused on the fulfillment of the operation of plans and programs of the University. Consequently, transforming this process of evaluation and academic supervision directing the II to the assurance of the quality of the programs they offer.

8. Scope and Impact

Based on the stages that were defined to conclude the SISAII project (supervision, action plan, reports and configuration), it is intended that by the year 2022 100% of the higher level incorporated institutions will have the results reports, as well as with the improvement plan in the SISAII. In addition, it houses current administrative academic information for each institution. Also, it is a valuable instrument in the process of evaluation and academic supervision, both physical and remote. Returns a quantitative and qualitative assessment by institution in each school period. It privileges the quality policy of the University, the indicators that comprise it and that are evaluated are aligned with external evaluating bodies.

9. Benefited

First. The direction in charge of this process at UM considering that it has the systematization of the evaluation process and academic supervision of the II, a substantive function. In addition to having a complete information system of all the II, as well as the feasibility to determine the administrative academic level that each one maintains. Second. The academic supervisors have complete information on each of the institutions under their charge and have a support tool in the evaluation process and academic supervision that they carry out.

Third. The incorporated institutions have updated information on their institution, they can consult and update it, as well as their improvement plans, helping to ensure the academic quality of their AP.

10. Results

On the one hand, since the implementation of the SISAII, the UM, the academic supervisors and the Incorporated Institutions have had timely and reliable information. Likewise, it allows the institutions to know their academic results and give timely follow-up to them. It should be noted that the average cost of an academic evaluation and supervision visit decreased by 50%; As a result of the pandemic, adjustments were made to the academic supervision guidelines and the SISAII, to apply remote supervision. Consequently, there are savings in stationery supplies and consumables of 35% per year of the budget assigned to the management in charge of these processes.

On the other hand, the SISAII is the technological tool that supports part of the process of evaluation and remote academic supervision of Incorporated Institutions of higher level that was certified in October 2021 by American Trust Register, S.C. The process must be updated for the internal and external audit of 2022 to maintain its certification.

For all the above, value is created in its users, that is, the 8,261 students served by the system incorporated in the higher level benefit by promoting quality, as well as in the development of an internal culture of continuous improvement that permeates towards incorporated institutions.

Conclusions

The incorporation of ICT in the academic evaluation and supervision processes of AP in the II allows them to be more efficient, as mentioned by González (2021) and Serrano (2021). In this sense, the development of the SISAII makes it possible to standardize the reports of the II; it also facilitates having the necessary evidence during the evaluation processes to seek accreditation or re-accreditation of an academic program.

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The systematization of the interrelated administrative academic processes, provides the necessary information to proceed to the permanent analysis of results, with it in decision-making; The foregoing in accordance with what was stated by Rodríguez, Bastidas, and Ramírez-Anormaliza (2021), when they emphasize that with the systematization of information, the integration and improvement of both internal and external processes is achieved.

Information systems as mentioned by León, Bringas and Encinas, (2018) facilitate the management of information such as evaluation processes, in addition to becoming essential tools for decision-making. Hence, the Comprehensive Academic Evaluation and Supervision System for Incorporated Institutions (SISAII) will make the evaluation process and academic-administrative supervision more efficient, in situ, remote or mixed modality, in time, form and content; as well as in human and economic resources. In addition, socialization will be strengthened by ensuring the quality of academic programs and their social impact.

Through the design and implementation of the SISAII, as a comprehensive information system that records the level of compliance with each of the indicators and quality standards of each academic program. Consequently, it allows the UM to carry out the post-pandemic evaluation and remote supervision processes of the PAs of the incorporated institutions, directing them towards educational excellence as Higher Education Institutions.

Finally, it is important to mention that not all higher-level educational institutions incorporate ICT for the systematization of information in their self-evaluation and academic supervision processes of their AP. So this study contributes as a guide for the development of a comprehensive information system for self-evaluation and academic supervision in the work of these institutions. Highlighting the importance that educational institutions need to develop strategies that allow their implementation, consequently contributing to the quality assurance of their programs.

References

Acuerdo Número 02/03/20. Diario Oficial de la Federación (16 de marzo del 2020). https://www.dof.gob.mx/nota_detalle.php?codigo=5589479&fecha=16/03/2020

CIEES (Comités Interinstitucionales para la Evaluación de la Educación Superior, A.C.) (2021). *Estatutos.* Ciudad de México, México. https://www.ciees.edu.mx/

Corral, Y. & Corral, I. (2020). Una mirada a la educación a distancia y uso de las TICs en tiempos de pandemia. Eduweb.

García, L. (2020). Coronavirus. Educación y uso de tecnologías en días de pandemia. Ciencia UNAM Sitio web: http://ciencia.unam.mx/leer/1006/educacio-y-uso-de-tecnologias-en-dias-de-pandemia Jesús Adriano. (2020). La brecha digital en la educación ante el COVID-19. Agosto 13, 2020, de Pluma https://www.educacionfutura.org/labrecha-digital-en-laeducacion-ante-el-covid-19/

González, E. P. (2021). Consecuencias y uso de las TIC antes y después del coronavirus: un estudio piloto. *Revista INFAD De Psicología. International Journal of Developmental and Educational Psychology.*, *1*(2), 211–220. https://doi.org/10.17060/ijodaep.2021.n2.v1.2175

León, M. C., Bringas, J. S., & Encinas, I. D. (2018). Sistema Integral para la gestión de información académica en educación superior: Integral system for the management of academic information in higher education. *Tecnología Educativa Revista CONAIC*, *5*(2), 59-65.

Rodríguez, V. G. G., Bastidas, L. T. T., & Ramírez-Anormaliza, R. (2021) El Sistema de Gestión Académica del Instituto Superior Tecnológico Bolivariano de Tecnología y su rol dentro del gobierno electrónico institucional. *Tesis.* Bolivia.

Salinas, I. J., De Benito, C. B., Pérez, G. A, & Gisbert, C. M. (2018). Blended learning, más allá de la clase presencial. *RIED. Revista Iberoamericana de Educación a Distancia*, *21*(1). ISSN: 1138-2783. https://www.redalyc.org/articulo.oa?id=331455825011

Serrano, T. I. (2021). Uso de la TIC en la calidad educativa en la Institución Educativa Francisco Montufar Pinto del Distrito de Cachora. *Repositorio Digital Institucional.* Colombia: Universidad César Vallejo.

UNESCO (Organización de las Naciones Unidas para la Educación, la Ciencia y la Cultura) (2020). Nuevas publicaciones cubanas para enfrentar efectos de la COVID-19 sobre la educación. Oficina de la UNESCO en La Habana [en línea] https://es.unesco.org/news/nuevas-publicaciones-cubanas-enfrentar-efectoscovid-19-educacion [fecha de consulta: 12 de junio de 2020]. (2019a), Marco de competencias de los docentes en materia de TIC, París [en línea] https://unesdoc. unesco.org/ark:/48223/pf0000371024.