

ANALYSIS OF THE EFFECTIVENESS OF PROFESSIONAL INTERNSHIPS AND ITS IMPACT OVER ENTERPRICES

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ABSTRACT

It is studied the way how the internships of underdegree students of Engineer IT and other Careers have an internal and external process of relationships between the companies and enterprizes and the technological universities, particularly the Technological University of Nezahualcōyotl. It is also observed the route that directs this process and its implications because right now the the students, the teachers, the education, the technology and the society are living a critical moment that is changing our way of live and if it is necessary make desitions to take actions to adjust some routes.

INTRODUCTION

The educational model of the Technological Universities (Villa Lever; Lorenza) had its origin in the French Instituts Universitaires de Technologie -IUT- which currently has 54 years of existence having a good reputation in their place of origin. Because TU are a model imported from French institutes of technology, the purpose of both educational systems is similar [1] - Diversify the educational structure to enable low-income students to enter a professional environment. - Create links with the productive sector aligning the requirements of companies with educational plans. - Offer one more option of higher education to sectors with relative socioeconomic disadvantage.

Taking as a reference the coordination of professional internships at the Technological University of Nezahualcōyotl both for the Higher University Technician (TSU) modality and for Engineering in the Informatics and Computing Faculty in the morning and afternoon shift in the Technologies of In the Information on Multiplatform Software Development, several areas of opportunity have been detected that, if improved, can significantly impact not only this Faculty, but also the other courses of the University, which are registered in the Educational Offer section of the official website of the institution listed below: - TSU Mode (Technological University of Nezahualcōyotl, 2019. Digital Network Infrastructure, IT Multiplatform Software Development, Mechatronics Flexible Manufacturing Systems Area, Human Capital Area Administration, Business Development Marketing Area, Industrial Processes Manufacturing Area, Chemical Technology Area Environmental, Aeronautical Maintenance Avionics and IT Area Virtual Environments and Digital Businesses. - Underdegree and Engineering Mode: Underdegree in Human Capital Management, Underdegree in Business Innovation, Environmental Technology Engineering, Information and Communication Technology Engineering, Mechatronics Engineering and Technology Engineering of the production.

Professional Intershops. The professional internships are described as indeed, in the separate Vinculación and Empresas of the institutional page it is indicated that: The University of Technology of Nezahualcōyotl, "invites the Productive Sector to participate in the Medium Education Program, median Obtain various benefits for their organization and during a period of 12 to 14 weeks the students of the UTN will apply their congratulations on the need for a solution to a business problem, through the middle of the development a project aimed at the orientation and supervision of assessors: a business and another academic. Under the auspices of the signing of a convention on the subject matter of the stadium, the UTN must provide the professional staff with knowledge, skills, values and actions relevant to the needs of the sector, provided that there is no compromise of laboratory character. In the professional internships, one of the opportunity areas observed is the form of assigning alumni to the companies. Faculty of Informatics and Computation is the area where full-time professors will be provided with the coordination of professional internships and the Dual modality; so in the vespertino turn, as in the matutino, it can be ascertained in the minutes of the working meetings that he held with the representatives of the two faculties. In each faculty, there is a solicitation of alumni on the part of the business card with which the UTN has agreed, a communication is established with the business assessor to validate the viability of the project or to inform that there are no characteristics stadium project. While there are other Faculties (for the opinion that it has applied to various students and with the same issues) the process is not analyzed as described, only verifies the amount of students applied for a company, there is no verification type of activity that students attend during the professional school quartermaster, well above the large number of students who have been quartered in some processes such as project evaluation committees and days of operation. In fact, carrying out an exhaustive analysis of the projects carried out in a professional stage by the students implies that the necessities of the companies are known, suggesting that the themes are sufficient with the required requirements of the necessities of the business sector, by the adequate validation of the projects in the professional stage up to the TSU level mode as Engineering implies that the students carry out only activities related to their academic development in favor of the company and the student. It can be observed that the Practices and Internships Department of the UTN is in the process of establishing the agreement with the various companies of the company, even thought, the validation or relevance of the projects has not been evaluated in detail. It is clear that in any academic year there is a full-time professor with a specific training in each area in order to carry out this activity, therefore in the majority of cases where it is not necessary to verify the project required. It is observed that a time when the alumni culminated in his internship project did not have a study or analysis of the results, implying that he does not really know the needs of the business sector, for that matter, it is important to know the opinions of the companies respect for the training or the degree of learning of the students in order to establish whether the needs of the productive sector are actually being resolved.

However, it is also important to know the perspective student on the areas of opportunity that the University can face, that is; if he has accompaniment or support for each assesses, what knowledge was in the curricula and what was not. In order to establish the prior searched information for the professional stadiums process, in the evaluation and opinion formats that academic, business and alumni assesses will finalize the stadium process with respect to each year, which only reflects the actuarial pattern of each participant involved, giving the aspects of learning descriptions [2], in addition, the only information that is included in these documents, there is no analysis of all the projects can indicate if the process of stages as well as the plans and programs are in line with the requirements of the productive sector or are at some point rebuilt. It is possible to attend the Mission and Vision of the University which is looking to the vanguard with the requirements of the private and social private sectors, without embarrassment, which has been observed in the coordination of stadiums and in the teaching activity, is that some aspects of the programs are not at the level of the requirements of these sectors or some companies give their level of technological demand is high, well, the large amount of time that transcends to the plans and study programs that are updated, for example, in the Tasks of Assignment with Glossary of Thematic Units we can announce that from Sep 2009 to Sep 2018, no modifications. If this is the case with the issues that are being addressed in the research problem, it is worth noting that the process of analyzing data is verified: if in fact the plans and study programs are complete with the market requirements or acquires and products requested by the students complete the expectations of the employees, as well as the companies set up with the infrastructure in accordance with the projects to be developed and, if the collateral effect of the study is to be verified with the totality of the themes in the classrooms.

Continuing with this analysis, we have also verified that there is no such thing as a format for the elaboration of the technical memory of the internship, although there is a document that will be published in all the faculties, if revised, we will find details on the elaboration of a summary, from a theoretical square, from a factuality study, by mentioning some separate documents, as well as for the TSU modality as Engineering. At this last point, it was noted that there is no differentiator for project designation, it is said; which aspects need to have a project of TSU and Engineering, a license from Ingeniería, do not have a document that defines it, given that the engineering modality was implemented in 2011. Finally, an increment of alumni assigned to full-time professors was noted in the Informatics and Computing Faculty, in some cases he launched more than 5 projects by a professor in each lapse, it is possible that the teachers can realize the total number of business visits, and that it is necessary to attend the University one week or more to complete with at least a visit to the company campus that impacts negatively on the participation of classes and in some cases, problems with the entrance register and / or the University's health. More cases have been documented in other divisions where the number of super projects 10 per professor, which in some cases involves the attention of up to 20 students per period. The attention paid to the stadiums is not the only problem that full-time professors or foreign investigators have, it is important to dedicate a lot of time to the stadiums and institutional projects, and to work on research projects that are more effective than they are. Academics are reducing the productive quantity of scientific articles. In this respect, it also verified the work of the academic groups with the requirements of the productive sector or the winning of interdisciplinary or interinstitutional projects.

PROBLEM STATEMENT AND OBJECTIVES.

PS. There is no congruence between the process of professional internship and the requirements of companies or enterprises.

GO. The need to have a solid business relationship implies having an effective professional internship model. To achieve this, it is necessary to carry out a punctual follow-up of the results that the process has produced over time from the perspective of the three fundamental actors; university, business sector and students. It is urgent to know what has worked, what has not been done and where Faculty wants to go: **Implement a methodology for assigning, monitoring and qualification professional internship to satisfy the requirements of the companies and enterprises.**

SO. - Evaluate the linkage strategies established with the Faculties and the University, starting with the assignment of teachers to coordinate internship with the profile of each career to determine the relevance of the projects that the companies propose. - Standardization of the criteria for assigning, monitoring and evaluating projects; suggesting the unification of publications and verifying that the activities to be carried out by the students are in accordance with their career profile to ensure that the technological and operational infrastructure of the company is adequate for the development of projects. - Analyze the scope of the projects between the coordination of internships and the teaching staff to encourage the work of academic bodies in collaboration with the productive sector for the feedback of the knowledge of both sectors. - Develop a decision-making support system that takes into account the opinion of businessmen, teachers and students to constantly verify the process of internships, measuring the results in the short and medium term. - Identify the needs of the productive sector based on a line of research or development of academic bodies, taking into account projects that require continuity in more than one scholar lapse by 4 months, encouraging students to participate in the analysis, design phases and implementation of large projects.

Research Limits.

When addressing a problem that not only affects the Information Technology and Computing Faculty, it will impact the adequacy of current procedures and the implementation of others. It is considered that, 30 years after training Superior Technicians and 11 years after training Graduates and Engineers, an analysis is necessary that covers the process of professional internships, being the strong letter of the model to attract enrollment, in contrast to nearby higher level schools to the University. It is necessary that the projects developed really impact the productive sector and the learning of the students. Since its creation, the UTN has undergone major changes, which, although they have resulted as part of the influence of the technological, economic and social environment, there needs to be an analysis from the institution itself. With regard to professional internships, it is desirable to know if the current mechanisms have been modified to improve or if due to the routine of the process, as well as the exchange of those in charge without prior training, some stages have been distorted or omitted. Therefore, an investigation is necessary to tell us where and how we are and where we want to go. The aforementioned study will allow it to be in accordance with the practices of the Administration and Senior Management, that is, how the organization processes information about itself and its environment, which will allow sharing the experience of its results to improve skills (Knowledge, Skills and Values) as well as the effectiveness of the professional internship process. On the other hand, with regard to processing information, the requirements that accreditation bodies such as CONAIC impose to evaluate institutional processes will also be positively impacted.

Those involved or direct beneficiaries of this study are the student, business and teaching community, firstly from the Information Technology and Computing Division, later to the other divisions and even to other schools of the Technological Universities Subsystem.

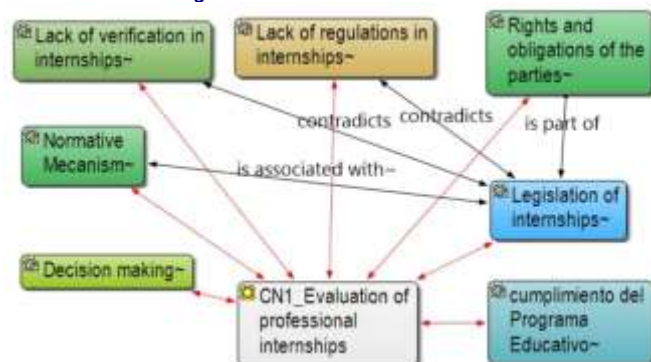
With the use of computer tools and optimization techniques for decision-making, the results of the questions expressed in the surveys of this research will be obtained. Samples or results will be taken from the rest of the academic units to strengthen the investigation. In the same way, it is important to apply the Intelligent Management of Organizations for the diagnosis, planning, standardization and execution of the processes described in professional internships through adequate management of students, entrepreneurs and projects to be developed because the problem it has a multidisciplinary approach that integrates the human capital competencies of the actors involved in this institutional process. Finally, business analytics will be used for the diagnosis, planning and optimization of operations, as well as the standardization and execution of the evaluation of the process of internships for a better decision-making of the organization, in such a way that they are produced constant improvements on the results of professional internships, promoting a culture of learning, technology transfer and continuous improvement. For example, based on the analysis of the monitoring of the current process, propose that academic bodies get involved in these types of research, invite representatives of related companies to participate in AST workshops (Situational Analysis of Work) on a constant basis, as well as highlighting the satisfaction of the students as another primary objective of the results of the internships. Even if it is detected that the teaching staff has no experience in the productive sector, suggest teaching internships.

DEVELOPMENT.

Evaluation process and regulations for professional internships.

Professional internship offers many advantages, both for students and for economic units, however. Mr. Rodríguez says "by not having adequate and specific regulation that clearly establishes what they are, what are their objectives, what are the rights and obligations of young practitioners or interns, what is its duration, who will supervise it and who will certify the knowledge, we are then faced with a terrible situation that leads to strong criticism of the school-work transition mechanism since, in reality, far from being a springboard to access the labor market, they can become tools used in a perverse way by employers"[3]. When they are considered a source of cheap labor, it is then that young people end up stagnating in activities that prevent them from acquiring new knowledge that prepares them for a successful future job and, consequently, they have risk of termination in performing tasks that were contemplated for workers without any educational content. Starting from the previous statements, it is necessary to build a global regulatory framework that impacts all types of University-Company linkage, call it: "Academic exchange and mobility, academic internships, professional practices, staff training, entrepreneurship, access to specialized infrastructure, provision of services, sponsored projects"[4], as happens in Peru, which is one of the few countries in Latin America that has Law number 28518 on Labor Training Modalities where it is established that professional practices and internships are related to a theoretical practical learning that induces the training and professional training of students, therefore, The design of the plans and programs should not only be in charge of the educational institution, but also of the companies, which would imply that the needs of the productive sector were really being resolved, prevailing the institutional interest of both sectors.

It might be thought that only companies or educational institutions are responsible for the success of the educational process, however, there are rights and obligations of all stakeholders as in the World Economic Forum in Geneva Switzerland [5] a prediction for the year 2030 is made about the future of work for all, they emphasize that people who are at risk of being displaced must adopt lifelong learning as a habit, that is, that continuous learning will not only be key to guaranteeing a job but also to developing stable professional careers. For employers, investing in workforce restructuring and human capital development will be a necessary investment that will yield more income while building the skills of their workers. In relation to governments and universities, they should promote permanent training to promote inclusive economic growth for the benefit of the economy and society. In this regard, the question arises, how it is guaranteed that the results or strategies proposed yield the expected results or that the actors are developing their part. In the case of the evaluation of internships, compliance with the objectives of the plans and programs must be verified through surveys of employers who receive students in their companies to verify that they have the necessary skills for the tasks entrusted [6]. Another way to guarantee that the processes are being carried out correctly or to make appropriate decisions to redirect activities is through the validation of certifying bodies, by Certification 2015, which emphasizes the need to measure the satisfaction of the needs and expectations of the client based on the performance and effectiveness of the quality systems, determine if the planned has been implemented effectively to be in a position to address risks and responsibilities. Finally, it is necessary that the competences of the students are evaluated during the professional internship. In this regard, the [Coordinación General de Universidades Tecnológicas y Politécnicas](#) – General Coordination of Technological and Polytechnic Universities - CGUTyP have the methodology called AST (Situational Analysis of Work) where an evaluation of the requirements and needs of the productive sector is carried out to implement educational programs [7]. This methodology is implemented with workshops where businessmen, managers and academics from academic faculties participate, however, the participation of businessmen who have the pulse of the needs that a Technological University graduate should have is not always achieved. It is for this reason that the present research aims to ask entrepreneurs in the region who already work with students in residence so that this approach is, if not mandatory, if a condition to improve plans and programs and the performance of students from a real experience. It is essential to note that AST workshops are not carried out with the required continuity and those that are carried out are not protected from one administration change to another in each academic division, which is confirmed by the questions made to two deans. See follow figure:

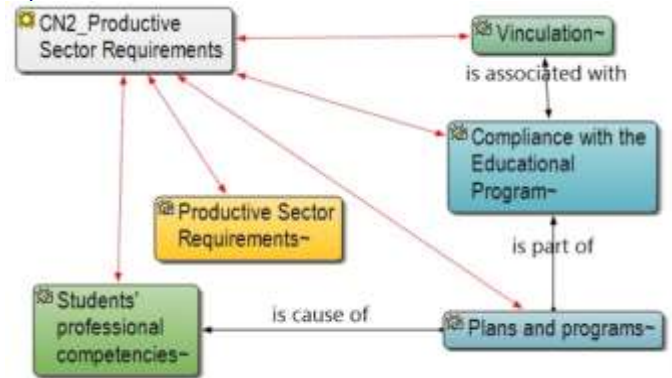


It can see the conceptual map or network of nodes regarding the process of evaluation and regulation of professional internships developed in Atlas TI7. The interdependence that the codes have with respect to the family Evaluation of professional internships and the interaction between them. It is observed that the existing relationship between codes carries a statement that describes their link -solid black arrows-, while the relationship of the codes with the family is only indicated by the red segmented arrows. Having defined the regulations and the evaluation of professional internships, we need to know the needs of the productive sector to complement our current regulatory framework or to solve an existing need or problem.

Requirements of the productive sector. In the lecture, Does the technological university contribute to training the necessary competencies for professional performance? By Marisol Silva Laya. coments that in order to be congruent with the educational offer, education institutions must verify the needs of the labor market based on the competencies required, as well as knowing to what extent students have achieved the learning established to be in a position to know if the University offers relevant training. Once the predecessor point has been verified, it will be in a position to train better qualified students to respond to social and labor needs according to what is planned in the institution from the point of view of functionality, efficiency and effectiveness [8]. Now, how to determine or manage to be in accordance with the needs of the productive sector? An important point is to retake or strengthen the methodology called Labor Situation Analysis [9]. Which, in order to be successful, must invariably be carried out through work groups formed by managers, academics and businessmen to determine the professionalization needs of the employees. sectors that are the responsibility of each university [10].

It is because of the above that the perspective of students, employers and teachers is decisive to improve the process. In the review article by Maria Yiu [11]. -where the work of several authors is highlighted- the perspective of employers is indicated; They report that students bring fresh ideas, are a vehicle or source of effective selection, training and contracting strategies based on their skills, rapid learning as well as the low-cost implementations that they represent. For employers, students can be easily trained as they are easy to mold to effectively transform job sources for today's economy. Zopiatis [12], found that in the relationship between students and employers, the expectations of the latter focus on the high motivation and willingness of students to learn new knowledge as well as their quality and commitment at work. For which, entrepreneurs need to know the learning that students will achieve to provide a positive environment for their personal and professional development. However, the perception of the students regarding their work during internships is not entirely favorable. Maria Yiu keep analyzing the research done in hospitality careers in different countries and authors: - In his work on the perception of Korean students about the effectiveness of internships in the hotel industry in that country, Ju comments that the students had an unsatisfactory experience related to increasing their personal skills as well as putting into practice the professionals, even almost 70% of the students did not consider the hiring by the company where they did their work. - In the case of South Korea, in a study that involved 285 students about the perspective on quality in the management of internships before and after the assignment, Cho [13] found that the students before being placed they were not expected. In the case of Australia, 850 hospitality managers and 211 hotel management students were surveyed to compare their skills.

Finding different expectations in both cases, while the academic part prioritizes the development of analytical and conceptual skills, the company needs supervisory skills. - Like the previous ones, it could continue to exemplify several cases, it is therefore important to emphasize the feedback of the parties involved about their experience to prevent serious errors during the process that includes the internships. Based on the previous descriptions, as follow figure explains:



It is shown the conceptual map that integrates the requirements of the companies and enterprices, it is appreciated how the interaction with the plans and programs has a lot to do with the fulfillment of the plans and programs, which affects in the professional skills of students at the end of their degree. At the other hand, and given that the relationship is one of the strong cards of the Technological Universities, it is necessary to diversify or expand the range of action, due to the fact of being in constant communication with the entrepreneurs, research and development projects could be carried out as well as the technology transfer [14].

CONCLUSIONS

It has been showed how the internships of underdegree students have not been followed as it must be. Then this collapse the internal and external process of relationships between the companies and enterprices and the technological universities, particularly the Technological University of Nezahualcoyotl. So, it must be planted a new route to direct this process that is too important for the next ten years. Once the needs of the companies and enterprices are known, it is necessary to determine whether the institutional procedures meet the established quality indicators.

OBSERVATIONS

It must be implemented a new way to direct the the internal and external process of relationships between the companies and enterprices and the technological universities for alumni and professors can be indeed the right direction to the internships and our students shall have a better future. It is necessarily to develop a platform to take data from now on to make desitions to take actions in the close future.

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