

Experiential learning through the Small Business Development Center (SBDC) model in Faculty of Accounting and Administration

Aprendizaje experimental a través del modelo del Centro de Desarrollo de Pequeñas Empresas (SBDC) en la Facultad de Contaduría y Administración

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Abstract

Although it is true that there is a great diversity of teaching-learning methods, it is important to identify that their didactic components comply with three main aspects: a) stimulate the exchange of ideas, findings and suggestions; b) prepare people for the working world as well as for assuming their personal responsibilities; and c) respond to the demands of today's society. Based on this context, exploratory-descriptive research was developed at the School of Accounting and Administration of the Universidad Veracruzana, with the objective of proposing a methodological system of experiential learning that allows the generation of applied knowledge for the benefit of society and to improve the training of future professionals. The design of the study is of an analytical-propositive type, since, from an orderly review of: the different sets of competencies that make up the thematic contents of the study programs, the knowledge applied to reality, the teaching strategies and their impact on learning and the resources provided to students to perform in the workplace; a methodological learning proposal oriented to the generation of knowledge through the Small Business Development Center (SBDC) model is constructed.

Resumen

Si bien es cierto, existe una gran diversidad de métodos de enseñanza-aprendizaje, es importante identificar que sus componentes didácticos cumplan tres aspectos principales: a) estimular en intercambio de ideas, hallazgos y sugerencias; b) preparar a las personas tanto para el mundo laboral como para asumir sus responsabilidades personales; y c) responder a las demandas de la sociedad actual. A partir de este contexto, se desarrolló una investigación de carácter exploratorio-descriptivo, en la Facultad de Contaduría y Administración de la Universidad Veracruzana, con el objetivo de proponer un sistema metodológico de aprendizaje experiencial que permita generar conocimiento aplicado en beneficio de la sociedad y mejorar la formación de los futuros profesionales. El diseño del estudio es de tipo analítico-propositivo, toda vez que, a partir de una revisión ordenada de: los diferentes conjuntos de competencias que conforman los contenidos temáticos de los programas de estudio, los conocimientos aplicados a la realidad, las estrategias de enseñanza y su impacto en el aprendizaje y, los recursos que se brindan a los estudiantes para desempeñarse en el ámbito laboral; se construye una propuesta metodológica de aprendizaje orientada a la generación de conocimiento a través del modelo de Centro de Desarrollo de Pequeñas Empresas (SBDC).

Strategies, Experiential, Learning, Administration, Competencies

Estrategias, Aprendizaje, Experimental, Administración, Competencias

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## Introduction

In a world of globalization and institutional diversification, universities need to develop thinking strategies that allow a transfer of knowledge in accordance with the present social and cultural reality, and the personal and material means necessary to achieve them.

This implies carrying out an adequate learning management, through activities that recognize the complexity of the teaching and learning processes and that achieve a transfer of knowledge through the recognition of applicable situations.

However, the acquisition of these strategies does not have to be the only objective of learning; on the contrary, the following should also be considered: competencies, work methods, evaluation processes between different alternatives and the teaching of skills such as reasoning, creative thinking and problem solving, which really allow learning.

As can be seen, the role of higher education institutions is key in the structuring and organization of teaching-learning methodologies. It is under this context that this research is developed with the objective of "proposing an experiential learning methodology, which allows to generate and experience knowledge through the recognition of applicable situations and is useful to develop competencies, since knowledge can be learned theoretically, but without the development of competencies there will not be an adequate training".

Generally, the processes related to learning are studied independently and no interrelationships are established between them; however, the nature of propositional research demands the realization of a study that allows linking diverse elements that affect the learning process with the needs of professional training, in this sense, this work is structured in three sections.

In the first section, the fundamental ideas obtained from a documentary research are outlined, regarding the experiential learning theory, the application of the university linkage in the learning process and the model of the Small Business Development Center (SBDC) is explained, whose main idea is to provide assistance to entrepreneurs and small and medium-sized enterprises in areas such as business planning, marketing, financing, development and commercialization of new products/technologies, government contracting and international trade.

The second section shows the results obtained from the exploratory-descriptive research carried out at the School of Accounting and Administration, with the objective of determining which are the competencies mostly applied during the development of the study programs, the knowledge provided through experiences as "real" as possible, the teaching strategies and the means adopted for the students to perform in the work environment.

Finally, in the third section, and after linking the results with the SBDC model, the methodological proposal for achieving significant learning is presented, which is based on an experiential, active, problem-based learning style, consisting of the generation and application of knowledge through the provision of extension services from the university community to the business sector through the Small Business Development Center (SBDC) model.

## Experiential learning theory

Although knowledge can be widely shared, it is at the same time very individualized and difficult to transmit to others, which "tends to work against a formal education system unless the individual is adept at handling routine, experiential, conceptual and systemic knowledge types" (Garcia & Flannery, 2010, p. 2).

Experiential learning is a theory built “on social and constructivist theories of learning, but situate experience at the core of the learning process” (Huaizhong et. al., 2019, p. 284), whose essence is learning by doing. The development of the experiential learning process and a multilinear model has been introduced by Kolb in 1984 (Ibid).

Kolb’s model of experiential learning (loc. cit.) was created out of three important aspects:

- Experience in Learning (concrete experience)
- Active Participatory Learning (observation and reflection)
- Conceptualizing as result of individual interaction with the environment (formation of abstract concepts and testing in new situations)

The learning process begins with the student undergoing an actual “real life” experience which becomes the basis for their Observations and Reflections. These observations and reflections subsequently become a concept or theory, and then these concepts or theories work as guides for creating new experiences. According to Kolb’s learning model, knowledge is created through the transformation of experience and rests on six basic assumptions:

Learning is a process, not an outcome; derives from experience; requires an individual to resolve dialectically opposite demands of grasping and transmitting experience; is holistic and integrative; requires interaction between person and his involvement; and results in knowledge creation (Bhandarker & Kumar, 2017, p.245)

Students should be exposed to experiential learning to improve their understanding of theory significantly and to enhance their learning. In this sense, the use of theoretical perspective of Kolb’s theory helps in the process of counseling and supervision of small group teaching.

As is evident, this model requires “the development of a learning space that positions its student in- habitants as central, active and engaged participants in their learning and knowledge created through the experience” (Sharma, et al., 2018, p. 543). This means that, this learning experience extends beyond the classroom, making universities need to evaluate their facilities by providing learning spaces in for group activities and quiet areas for individual learners and small group discussion (Op. cit.).

At the same time, the role of the professor has to change from being a “teacher” to becoming a “coach”, so that learners develop their individual experiences, rather than simply adopting those explained by the educator (Ibid).

### **University link-up as an educational learning strategy**

There are several strategies designed to deepen learning, among the most frequently utilized are simulation, games and case studies (Restrepo, 2005). However, if you want to bring the student to a higher level with experiences that are as “real life” as possible, it is necessary to consider other types of strategies that allow for the enhancement of various professional and cognitive skills and that can adjust to different content as appropriate.

Considering the characteristics of different educational strategies, it has been determined that the university link-up can function as a method through which learning is achieved, since it allows for the building of a meaningful and cognitive universe within the learning process of university students (González, 2011). The objective from the point of view of the university should be understood as a mechanism that helps to raise the quality of research, university teaching and to facilitate a better integration with social needs (Acuña, 1993).

There are different forms of university link-ups that may be identified, such as technology transfer, courses, services, consultancies, collaboration agreements, research financing, exchange of personnel, association with new companies, centers jointly administered by the university and industry, incubators, and many others. According to Campos & Sánchez (2005), there are three approaches on which different types of linkages can be developed, which are:

- The Economist. It is based on the sale of products and services by the university in order to gain access to resources, which allows for it to partially solve the lack of financial resources. As a result, it tends to focus on the productive sector. The majority of its efforts are focused on technical assistance activities, provision of services and research and the development and transfer of technology. Its duration can vary from weeks or months to indefinitely.
- The fiscalist. This is the most traditional approach. It conceives the link as the relationship of the institution as a whole with the broader society, which not only considers the productive sector but also the social one. The main idea is to contribute something to society, so it takes into account varying extension activities such as offering dental services in underserved communities as well as the transfer of technology, to name just two examples.
- As part of the outreach functions of universities. The idea is to establish the link as a function and not as a university extension, so that the functions of teaching and research are developed, helping to contribute to the solution of problems facing society.

Regarding university linkage as an educational learning strategy, going back to the objective of experiential learning, it can be affirmed that employing the linkage with the approach of positioning it as a new function within the universities, allows us to achieve a greater achievement of this learning.

### **Linking through the Small Business Development Center (SBDC)**

In 1976, The Small Business Administration (SBA) of United States of America (USA)

Created the University Business Development Center pilot program to establish small business centers within universities to provide counseling and training for small businesses. The first center was founded at California State Polytechnic University at Pomona in December 1976. Seven more centers were funded over the next six months at universities in seven different states (Jay Dilger, 2019, p. 5).

With the premise that the nation's small business owner's lack of management expertise as the primary cause of business failures, in 1980 legislation was signed establishing the program, citing.

The network of SBDCs would be charged with the counseling this demographic concerning the managing, financing, and operation of small business enterprises as well as the delivery or distribution of such services and information; and providing access to business analysts who can refer small business concerns to available experts (Ryan, 2014, p. 128).

The principal idea of SBDCs is to establish a link between the private sector primarily, and the university community, "to deliver management and technical assistance training to small businesses in order to promote growth, expansion, innovation, increased productivity and management improvement" (Jay Dilger, 2019, p. 6). This is achieved through programs and training designed to improve the profit and growth potential of small businesses and potential new ventures, and at the same time, achieve job creation and retention.

SBDCs “are funded through partnerships that bring together a combination of SBA federal funds, leveraged by partnerships with state and local governments, the universities and colleges that host the SBDCs, as well as community and business partnerships” (Ryan, 2014, p. 128); the services are typically provided at no charge, so that “SBDC funding is based on a dollar-for-dollar Federal funds matching requirement; matching funds from state, regional or local sources” (Garcia & Flannery, 2010, p. 4). This means that, for every dollar invested from federal sources, the local and regional non-federal funding should be contributed at the same level.

In summary, the SBDC model is based on a cooperative funding and resource partnership that includes collaboration between the SBA, the host institution and other stakeholders. The SBDCs can be identified in the current model:

Small Business Development Centers are now found throughout the Americas. (For example, the ASBDC in U.S.A), CONAMYPE in El Salvador, SEBRAE in Brazil, AMCDPE in Mexico, etc.). In all cases, host institutions (Universities) economic development entities and Governments work together in a cooperative and collaborative fashion to deliver the SBDC services. As such, it is vital to expand the role of the SBDC networks in order to contribute to the growth of local, state, regional, and national economies. The host institutions provide infrastructure such as buildings, offices, computers, research resources, students and the administration of funds. The Federal funding partner which is the SBA in the United States, provides funding, technical assistance and oversight, sets goals in support of small businesses development and promotes government backed loan programs within the services of the SBDC (Op. cit.).

Specifically, SBDC assistance in management and operations of the businesses area is accomplished through:

- In-depth confidential one – on-one counseling. Personal attention is provided to the client over an indefinite period of time, with support provided in all areas of the organization, improving the competitiveness of small business.
- Transfer of information. This is about additional services that are offered by different public or private institutions including credits, benefits, free courses, training for employees and employers, among others.
- Provision of learning opportunities. Capacity building for all entrepreneurs and strengthening the human resources of the organization in general, through a variety of seminars on topics such as: advertising and promotion strategies, marketing the small business, developing a business plan, obtaining a bank loan, leadership and motivation, licensing and franchising, among others. They are focused on develop skills and abilities that helps in increase the productivity and de competitiveness.
- Applied research. Through technical assistance in all areas of the organization in order to solve specific challenges faced by the business. This is where the University can best be taken advantage of through its ability to carry out research, workshops, technologies, products, among others.

The SBDC can certainly help small businesses; however, it is important to establish a link between small businesses and the center because not all enterprises know about the true benefit that they can get from them.

## Methodology

As previously mentioned, this work is developed under an Exploratory-Descriptive methodological perspective. Likewise, it was mentioned that it consisted of three parts, the second one being the one we are interested in, which has the objective of knowing how the competencies of the students of the Faculty of Accounting and Administration - Xalapa of the Universidad Veracruzana are developed, and to determine how their application through counseling to SMEs, allows them to obtain experiential learning, achieving not only to accredit the educational experience but also to acquire work experience.

This Faculty has a department known as the University System for Business Improvement (SUME), which is based on the SBDC model (explained in previous sections); thus, it is responsible for providing better assistance to small and medium-sized enterprises, and through its methodology, groups of students led by their professor participate, allowing in a certain way an experiential learning opportunity, bringing them closer to a real work experience, and therefore improving their level of competence to face the business market.

To carry out the analysis of how the competencies that are developed in the students in their various curricula, and their applicability through their interventions in SUME, within the framework of the exploratory-descriptive methodology, a data collection instrument constructed mainly of items in Likert scale format was developed. For its application, data were obtained on the number of students enrolled in the Faculty's careers with admissions in the years 2015, 2016 and 2017 (labeled as S15, S16 and S17 respectively), being the total number of students for these enrollments provided by the secretary of the faculty was 1201, distributed as illustrated in table 1. Thus, a stratified random sampling was performed, with the objective of obtaining data from students with these years of entry (which allows them to already have a significant curricular advancement, that is, from advanced periods), and from the 4 educational programs, with the purpose of enriching the results and consequently the description obtained from the analysis.

Bachelor's degree	Number of students
Accountancy	420
Management	478
Administrative Computer Systems	196
Business Management and Direction	107
Total	1,201

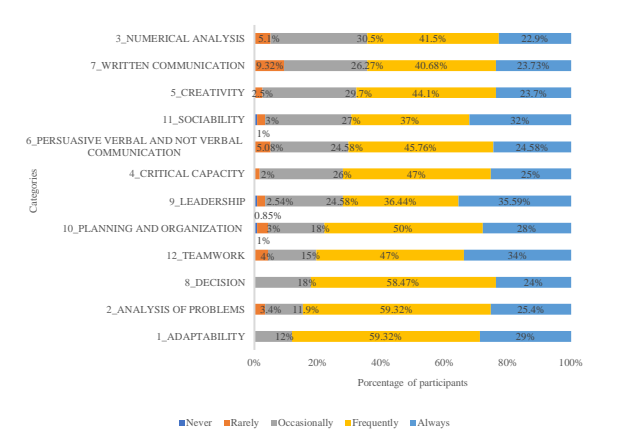
**Table 1** Distribution of the 2015, 2016 and 2017 pollution by academic program  
*Source: Obtained information of the Universidad Veracruzana.*

We proceeded to apply the sample calculation formula for population proportions (QuestionPro,sf) with a confidence level of 95% and a margin of error of 10%, obtaining a sample size of 90. Given the confinement caused by the pandemic of the covid19 disease, the instrument was distributed to students through the social networks of the career heads, obtaining as a response 118 resolved questionnaires, and with which the sample size was satisfied and proceeded to carry out the analysis.

The instrument was created on an electronic platform from which the data collected were exported to a spreadsheet, to carry out their processing and gratification using the R language and the integrated development environment Rstudio. These are complemented with the installation of the likert package (github, n.d.), which allows processing and tabulating the data obtained in a Likert-type questionnaire, as well as carrying out three types of graphs for this type of instrument: bar, density or heat (Perán, 2016). The code used to process the data collected and generate the graphs shown in this paper can be found in the appendices of this paper.

**Results**

A benchmarking instrument was made of the different sets of competences that are frequently used throughout our educational experiences. Based on this, we contributed to a sampling in different graphs based on the Likert scales, for this the instrument was divided into seven parts where each of them corresponds to different intertwined questions that were answered by a maximum sample of 118 students of higher education. In the first part the frequency of a set of competences for the development of educational experiences is indicated, in the second part it is considered that both knowledge is applied to reality, in the third how often teachers use learning strategies in their classes, in the fourth part the levels of impact that these strategies have are shown, in the remote part the impact of the strategy for our learning is indicated, in the sixth part it indicates if they give us the necessary resources to perform in the workplace and in the last part we show which ones have a greater impact on our learning and which would improve our academic training.



**Graphic 1** Competences in educational experiences  
*Source: obtained information of the Universidad Veracruzana of the R system*

### Frequency in the use of competences in educational experiences

From the following set of competencies indicate the frequency you consider you have used each of them during the development of your Educational Experiences

- 1 Adaptability
- 2 Analyses of Problems
- 3 Numerical Analyses
- 4 Critical Capacities
- 5 Creativity
- 6 Persuasive Verbal and Not Verbal Communication
- 7 Written Communications
- 8 Decisions
- 9 Leadership
- 10 Planning and Organization
- 11 Sociability
- 12 Teamwork

A sample of 118 responses from Higher Education students of the Administrative Computer Systems career of enrollment S15, S16 and S17 was configured. Given the results obtained through graphs, it can be considered that students apply some of the skills during the development of their experiences; within the Likert scale where: 5 always, 4 frequent, 3 occasionally, 2 rarely and 1 never.

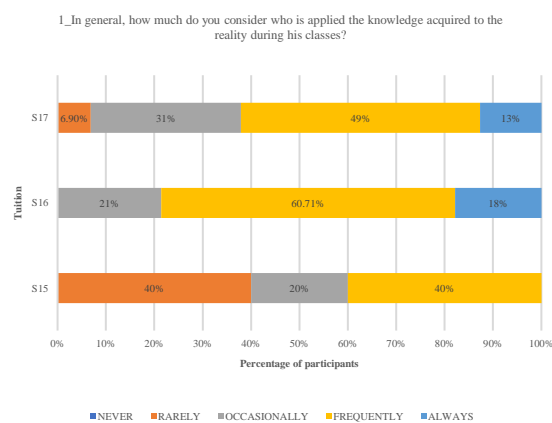
Among the lowest percentages almost zero were chosen the competencies of leadership, sociability and planning and organization with 0.85%, then written communication with 9.32%, with these data it can be considered that students do not work with these and emphasizing that they are one of the most important to carry out projects. The average percentages were those selected occasionally and always, where an average of 24.58% – 35.59% was obtained. The highest for what is attributed to be frequently used are: decision (58.47%), persuasive and non-verbal verbal communication (45.76%), problem analysis (59.32%), planning and organization (50.00%) and adaptability (59.32%).

### Knowledge during classes

The next question of the questionnaire is of a general nature: to what extent do you consider that the knowledge acquired is applied to reality during your classes?

As can be seen in Graph 2, the students surveyed from the Universidad Veracruzana responded to the question "How much do you consider that the knowledge acquired is applied to reality during your classes? where the highest percentage was 60.71% with frequently, so students if they apply their knowledge in their daily lives, the lowest percentage was 6.90% of these almost do not show their knowledge externally, it can be said that only within the institution.

With this it is determined that a maximum of 60.71% of them apply their learning either on a daily or work basis. In the graph indicated with option 2.1 the curve is shown where the frequency of ascent between frequent and always is appreciated, in option 1 the maximum percentage of 65% is shown well, the average of 28% and the low of 7% and finally in the graph named as separating by category the percentage separated by enrollment is more reflected where the S16 and s17 have a percentage between 62% and 79% so these students are applying their knowledge to reality, the lowest enrollment was S15 with 40%, so they should be asked more about this case to students to reach a more detailed conclusion.



**Graphic 2** Knowledge in classes  
*Source: Obtained information of the Universidad Veracruzana of the R system*

### Teacher learning strategies

The next question of the questionnaire addresses the issue of learning strategies used by teachers and the predilection of students, being investigated the strategies listed below:  
How often have your teachers used the following learning strategies in their classes?

14 Business Simulations

15 Case Study

16 Experimental Works

17 Resolution of Problems with the Society

18 University Link

Graphic 3, is separated by categories of learning strategies, in the first case we have a business simulator where the range was 23% - 44% for S17, 32% - 36% for S16 and 40% - 60% for S15.

In the second we have the case study where the range was 7% - 55% for those with S17 enrollment, 4% - 64% for those with S16 enrollment and 0% - 80% for those with S15 enrollment.

In third we have the experimental works where the range was 13% - 47% for those of S17 enrollment, 14% - 50% for those of S16 enrollment and 0% - 80% for those of S15 enrollment.

In fourth we find the resolution of problems with society where the range was 29% - 33% for those with S17 enrollment, 14% - 50% for those with S16 enrollment and 20% - 80% for those with S15 enrollment.

And in last position we have the university linkage where the range was 16% - 47% for those with S17 enrollment, 21% - 54% for those with S16 enrollment and 20% - 80% for those with S15 enrollment.

Moreover, we highlight that occasionally and frequently these strategies are used by teachers in the classroom. Graph 2 shows the upward and downward curves of the different learning strategies.





**Graphic 3** Teacher Learning Strategies  
*Source: Obtained information of the Universidad Veracruzana of the R system*

Level of impact based on a set of competences

The next item of the instrument addresses the impact of previous learning strategies on competencies.

19 Adaptability

20 Analysis of Problems

21 Numerical Analysis

22 Critical Capacity

23 Creativity

24 Persuasive Verbal and Not Verbal Communication

25 Written Communication

26 Decision

27 Leadership

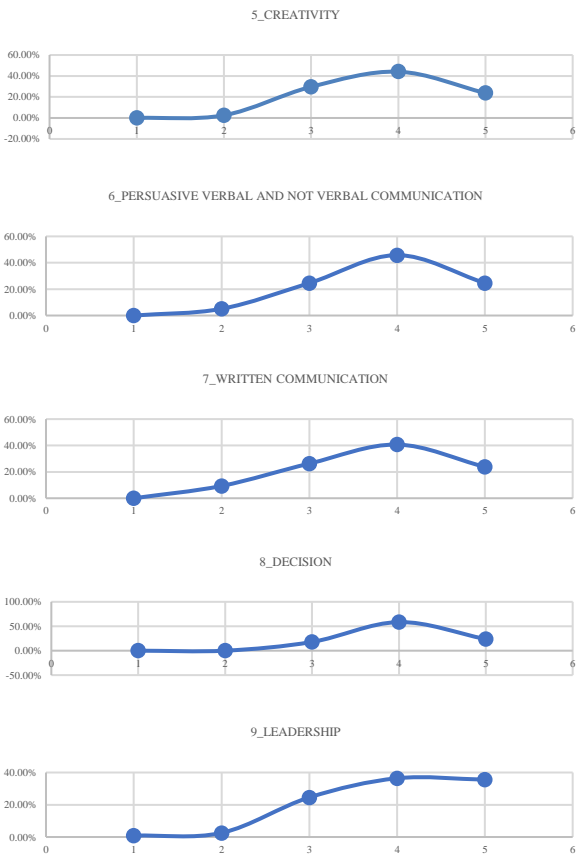
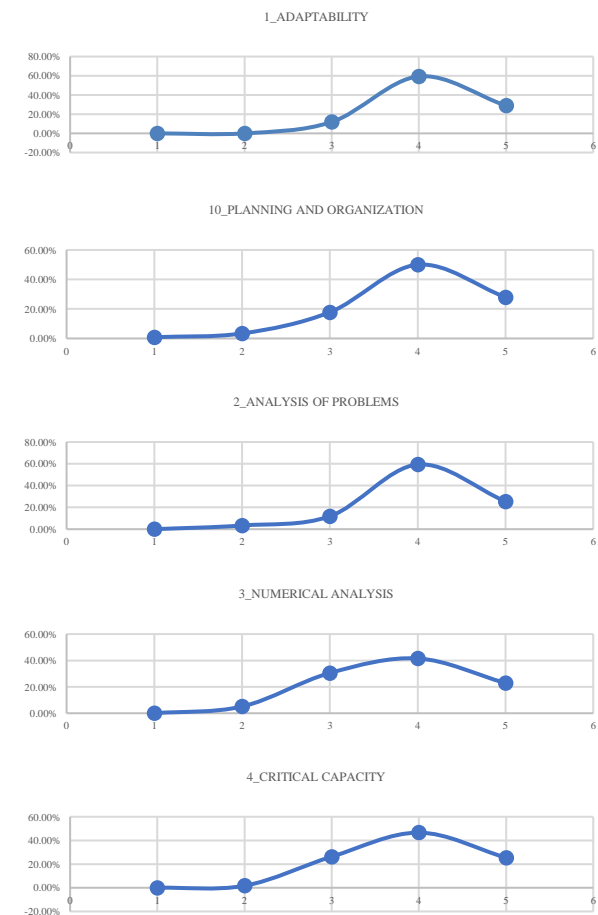
28 Planning and Organization

Through a probabilistic sampling and taking as a reference adaptability, problem analysis, numerical analysis, critical capacity, creativity, persuasive and non-verbal verbal communication, written communication, decision, leadership, planning and organization, to be able to consider which of these is having a level of impact on their development; To answer the question, a sample of 118 Higher Education students from the Administrative Computer Systems career was taken from enrollment S15, S16 and S17. Within the Likert scale where 5 is very high, 4 high, 3 normal, 2 low and 1 very low.

As an interpretation of this graph taken from option 2, the lowest point of 0.85% was taken, which corresponds to creativity, and with a normal of 41.88%; so, it is considered that it is among the average of the level of impact of learning strategies on their development. Those that have a very high impact with 34.17% is planning and organization, 30.00% decision, 26.67% leadership and with 25.83% adaptability.

Those that are at a high level are: 40.83% adaptability, 36.13% critical capacity and 34.17% problem analysis. Those that are in the middle range, that is, normal are, 49.17% persuasive and non-verbal verbal communication, 47.06% written communication, 46.67% numerical analysis, 42.50% problem analysis and with 40.00% leadership. And finally in the low range we have decision with 6.67%, written communication with 6.72% and numerical analysis of 6.67%.

Consequently, it can be said that there is a high percentage of impact level in the different learning strategies, where this exceeds 45% of all these. Graph 2.1 shows the ancestry curve between the normal and high level of Likert levels within the different strategies. And finally, in there is a graph that is separated by categories, it shows us in more detail the percentage of each of the students based on their enrollment, which is how they are separated in the different categories; in these the one that stood out the most was a 100% in planning and organization of the S15 enrollment.



**Graphic 4** Impact of competences  
*Source: Obtained information of the Universidad Veracruzana of the R system*

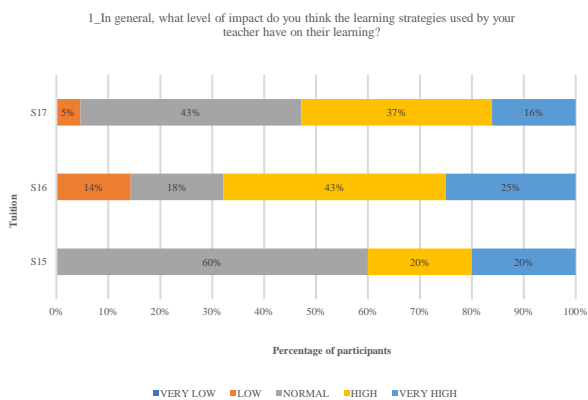
**Level of impact of strategies used by the teacher**

The next question in the questionnaire is: in general, what level of impact do you think the learning strategies used by your teacher have on their learning?

Within the Likert scale where 5 is very high, 4 high, 3 normal, 2 low and 1 very low. In the graph with option 1 we can see how the surveyed students of the Veracruz university, answered the question of What level of impact do you consider that the learning strategies used by your teacher have in their learning? where 7% are between low and very low, 38% in normal and 56% in high and very high. In the linear graph named with option 2 the curves of ancestry and descent are shown and so that it is understood rather this graph option 2.1, where it shows that with 6.7%, they consider that there is a low percentage with respect to the strategies used by the teacher, with 37.5% it was considered a tie between normal and high, so you can see in the linear graph is the peak of ancestry between these two and 18.3% is cataloged at very high.

In the graph where these were separated by categories based on the enrollments indicated above, it is considered that those of the S15 60% cataloged that the strategies considered by their teacher have a normal level of impact against 40% that is high and very high. Those of registration S16 reported a percentage within the low range of 14% based on the 68% that is constituted in high ranges and finally those of the S17 contributed to 43% within the normal scale against 53% in high – very high.

Based on the graphs and the results obtained through the differences between the percentages, it was concluded that the students consider that, of the impact levels cataloged within the Likert scale, they are within the high – very high range; so, when the teacher uses the different learning techniques, they have a high level of impact for our learning.



**Graphic 5** Strategies used by the teacher  
*Source: Obtained information of the University Veracruzana of the R system*

**Job performance based on educational experiences**

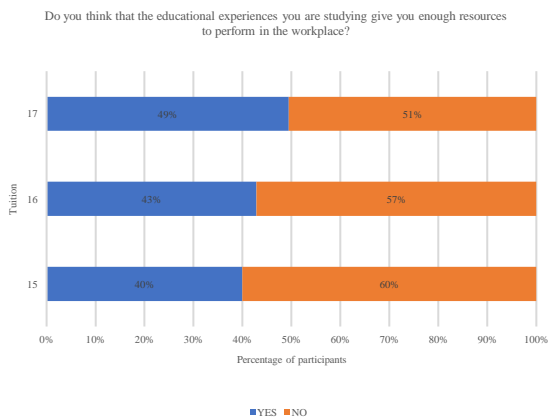
In the following question of the questionnaire, do you consider that the educational experiences you are studying give you sufficient resources to perform in the workplace?

Within the Likert scale where 2 no and 1 yes. In this sample we can see that percentage of the students surveyed consider that the educational experiences taken can perform within the workplace.

4 graphs were cataloged with different options, the first of them we can observe it within option 1 in which it shows us the percentage only of the two possible answers and of all the students, we can see that 48% of them consider that the experiences if they can help you in the workplace against 52% that tells us that they will not serve you in the workplace so that you perform. In the second graph with option 2 it shows us the same as the first, but with a difference that in this one it is showing us the average of all the values in general with a 1.52 (0.5) that leads to the percentages already mentioned above.

The third shows us in a linear way the ascent curves with respect to the two answers. Within the last graph where the information divided between the three registrations with their respective percentage is being specified in more detail; where the enrollment S17 a 49% of students said yes and 51% that no, the enrollment S16 43% said yes against 57% that no and in the last enrollment S15 40% said yes and 60% that no.

Taking as a reference the results obtained in a general way, it can be contributed that the experiences that are being studied offer you resources to perform in the workplace in 50%, that is, half of them consider that yes and the other 50% consider that no. This may be because the experiences taken are not related to a future job and only some can help you solve problems or situations that are presented to you in the professional field, this may be the reason why only half consider that they cannot offer you the necessary resources to perform.



**Graphic 6** Performance of educational experiences  
*Source: obtained information of the University Veracruzana of the R system*

**Strategies that improve academic training and its impact on learning**

To analyze this area, the following questions were asked:

31 Which of the following strategies do you consider to have the greatest impact on your learning?

32 From the following set of learning strategies, indicate those that would improve your academic background

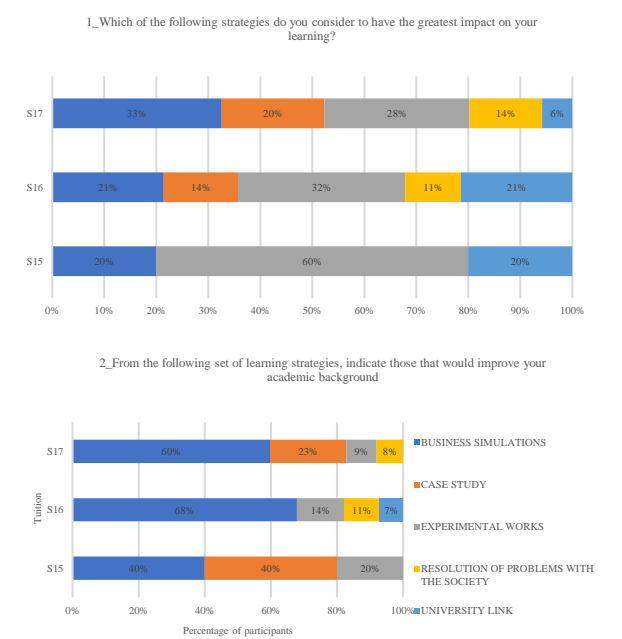
Through a probabilistic sampling and taking as a reference the business simulator, case studies, experimental works, problem solving with society and university linkage to be able to consider which of them have a level of impact on their learning and which would improve academic training.

Given the results obtained through graphs, it can be considered that students apply some of the skills during the development of their experiences; within the Likert scale where 5 is university linkage, 4 problems solving with society, 3 experimental works, 2 case studies and 1 business simulator.

In the graph option 2 the curves are found linearly within the different standards of the scale and in option 2.1 it is shown answering the first question of which of the strategies are considered of greater impact; we have an average of 1.72 (1.1), with 60.8% for business simulator, 18.3% of case studies, 10.8% experimental work, 8.3% for solving problems with society and 1.7% university linkage; based on the percentages obtained, it is considered that the business simulator is the one that has the greatest impact on our learning and the university link the one with the lowest percentage. Regarding the second question of which would improve their academic training we have with an average of 2.56 (1.3) to business simulator with 29.4%, case study 17.6%, experimental works 30.3%, problem solving with society 12.6% and university linkage 10.1%; so, of the strategies mentioned the one that would help our academic training the most is experimental work and business simulation.

In the separation by category it is separated by the enrollments where the percentage obtained based on the first question is: for the S17 enrollment we have a percentage of 52% business simulation and case studies, 28% for experimental work and 20% for university linkage and problem solving with society, in the S16 enrollment we have a percentage of 36% business simulation and case studies, 32% for experimental work and 32% for university linkage and problem solving with society, and the S15 enrollment we have a percentage of 20% business simulation and case studies, 60% for experimental work and 20% for university linkage and problem solving with society.

The percentage obtained based on the second question is: for the S17 enrollment we have a percentage of 83% business simulation and case studies, 9% for experimental work and 8% for solving problems with society, in the S16 enrollment we have a percentage of 68% business simulation, 14% for experimental work and 18% for university linkage and problem solving with society, and the S15 enrollment we have a percentage of 80% business simulation and case studies and 20% for experimental work. So, the strategies that would improve our academic training are business simulator, contributing to that it was one of the highest in this case and case studies.



**Graphic 7** Academic training and its impact on learning  
*Source: Obtained information of the Universidad Veracruzana of the R system*

### Methodological proposal for the generation of learning through the small business development center (SBDC) model

The starting point is the experiential learning process and the fundamental characteristics of a linkage through the SBDC model. With these elements, a triple helix method is established, where the organization, students and teachers (the latter in their role as advisors) converge.

The central objective is to support student learning, but at the same time, to promote the development of the social and productive sector through the linkage of educational, governmental and productive agents. In this way, students can acquire their own working methods and apply them to different types of situations, thus generating experiential learning.

The perspective of the proposal is that learning is achieved through theoretical knowledge but complemented, and to a great extent is generated through the combination of experiences, so that the fusion of these variables will allow a dynamic learning; as benefits of the application of a triple helix model will allow, among other aspects, the following:

- Transfer and incorporate to the curricula, experience, technology and business knowledge.
- Promote the linkage between students, academic entities and productive sectors.
- Promote multidisciplinary research and the formulation of alternative solutions to business problems.
- Promote the integral formation of the students, through their participation in the solution of problems in the organizations that allow them to acquire experience.
- To achieve intellectual support in the projects of the organizations, through which technologies and methodologies are developed that allow the organizations to update their processes and contribute to their competitive improvement.

For this method to work within the academic entity, it is considered necessary to establish an organizational structure that allows supporting the organizations through academic specialists and students, from a multidisciplinary approach. In this sense, it is recommended to apply the methodology through the University Business Improvement System (SUME) of the School of Accounting and Administration, since it is made up of a coordinator, academic specialists with professional experience and students.

As explained in later sections, the SBDC's main objective is to provide technical advice and training focused on competitiveness issues for small enterprises, and to conduct business research tailored to the client's requirements; all of this on a confidential, free and long-term basis. Therefore, SUME will be responsible for guiding the efforts to articulate the linkage and alliance so that they translate into benefits for both the academic entity and the productive sector.

As for the academic groups, they will be integrated by specialists in the functional areas of the different organizations and will be responsible for the first contact with the economic entities and for developing the specific requirements of the companies. Throughout the process, the students' learning will be reflected in their participation in the solution of real situations in the organizations, which will increase their knowledge base. This participation translates into an accompaniment between the academic groups and the students. Regarding the development and application of the methodology, based on Kolb's experiential learning model and the SBDC model, four phases are proposed: linking the university with the business sector, experiential learning, active participatory learning and feedback for conceptualizing. The above with the objective of achieving experiential learning in students and a proactive impact on organizations.

The following is a description of the phases of the methodology application process using the SBDC model.

Phase 1: Linking the university with the business sector

As already mentioned, the organization in charge of the linkage in this case is SUME, which must work to achieve recognition from government agencies. For this purpose, it should elaborate a university offer focused on solving the problems faced by the private sector so that, according to the information, it can promote this service through brochures, videos, web page, among others; reflecting what the academic entity offers to the organizations.

It is important to emphasize that the university in the early stages of the linkage, is responsible for approaching the private sector, making various development proposals, in order to facilitate the transfer of knowledge between the two organizations.

#### Phase 2: Experiential learning

The basic premise is interaction, so the university must provide spaces and advisors to guide the students' activities and provide them with the appropriate help for their needs. To this end, the organization interested in business consulting must conduct an initial interview where a "contract" is signed that establishes the commitment between the company and the University.

Through a confidential, no-cost, long-term relationship, focused on producing tangible concrete results; by means of a diagnostic interview, the company presents the problems in its organization to the SUME coordinator, who will be in charge of identifying the most appropriate academic specialist to help the company.

While the company presents the problems in its organization to the academic specialist, the latter must allow the students to listen to the problems faced by the organization, with the intention of actively participating in the strategic processes and being part of the dynamics with the organization, creating the possibility of reducing the gap between theory and practice.

In short, this phase consists of knowing the problem, applying the reasoning, identifying the learning needs through the process of interaction with the main actors and establishing commitments for action.

#### Phase 3: Active participatory learning

In this phase it is important to emphasize that the academic specialist should be the facilitator of learning so that students focus on how to solve business problems. Therefore, he/she should assign specific tasks to the students, who are involved in solving the problem.

These tasks can range from market research and search for specific information, to the creation and presentation of a project proposal. This, with the intention of encouraging students to apply the knowledge acquired in the classroom in real-life situations present in the different companies. However, it is important to keep in mind that all the information or work done by the students must be supervised, reviewed and verified by the academic specialist to ensure the quality of the consultancy.

#### Phase 4: Feedback for conceptualization

At this point, the academic specialist must review the results and provide feedback to the students on whether the tasks assigned to them, allow them to achieve the expected results for the company, which will be presented by the student to the organization, allowing them to develop in the students the skills of analysis and reflection, and demonstrate their skills and attitudes in problem solving.

Here, research becomes an instrument for the creation of knowledge, allowing to obtain benefits, both for the academic entity as well as for the participating companies and for the students when conceptualizing the practice.

#### Limitations and future Direction

One of the limitations that we can anticipate is the inefficiency of processes and procedures used, that in most cases are based on monotonous academic research.

On the other hand, we see that the incentive structure doesn't include cash and non-cash rewards in the payment and incentive systems. These are often factors that motivate University to support counseling free of charge.



At the same time, many academics are unaware of recent industrial advancements or changes in some regulations; or even have lack of a practical perspective. In this sense, it is necessary to have academics who have experience in the field and who are permanently engaged in updating their knowledge base for their area of expertise.

Finally, bureaucracy and the inflexibility of administrative systems in university can lead to a lack of communication and slowing down of negotiations between networks of small business, industry actors, government and academics. It is therefore necessary to increase the knowledge of industrial actors about business related services that are provided in universities.

Consequently, some practical recommendations are offered below for the coordinator of the program.

- Review the structure and processes associated with university research with respect to the internal and external contexts of the SBDC centers.
- Create a process for obtaining budgets for companies and for the SUME.
- Develop a professional proficiency system for academics that allows them to improve their professional capacities and focus in experiential learning.
- Defining common goals for the university and the small business development centers in line with the Development Vision of the local, state and country.
- Hold specialized common meetings and sessions between the university and the small business community to exchange views and to identify common issues of concern.
- Define projects based on the real needs of the sector.

## Conclusion

In a world characterized by a rapidly changing environment that is undergoing deep structural transformations, there is an urgent need for professional development and training that provide students with specific knowledge, but also with the necessary soft skills to apply techniques to solve problems in a creative and impactful way. The university is responsible for preparing its students to be able assume the level of responsibility demanded by the labor market. This requires that learners be equipped with the necessary mix of knowledge and experience in order to be more attractive to employers, but also to start or manage businesses, and assume the role of being job creators themselves.

Therefore, the importance of seeking out effective teaching strategies that allow for the achievement of adequate professional development is critical. Thus, the role of universities is key in the structuring and organization of teaching-learning methodologies.

It can be affirmed that experiential learning plays an important role as an alternative that improves the quality of learning and outcomes. There are different strategies to apply this type of learning, among which include the university linkage model. This is due to its approach of ensuring its applicability to the “reality” that businesses face and day in and day out, as well as to the fact that it favors the rapid absorption of knowledge. However, in spite of recognizing the importance of the linkage university in the teaching-learning process and the acceleration to achieve it, it has not yet been given the importance it deserves in the field of higher education and with the private sector.

The SBDC model represents a type of university linkage. This is due to its use of various tools for improving the skills and competencies of organizations and how it provides access to information and other benefits that facilitate the rapid assimilation of knowledge and significant learning.

SBDCs that are located at universities involve a learning process that emphasizes an interactive framework that highlights the building-up of knowledge. This is achieved by fostering a relationship between students, faculty, staff and entrepreneurs. This ultimately can allow students to apply what they have learned in the classroom as well as in “real-life” situations working with different types of organizations.

It is important to keep in mind however that successfully applying experiential learning through the SBDC model requires collaboration at a high level between the SBDC and its host institution. This is important as it can facilitate the development of a solid relationship with the productive sectors in order to guarantee the success not only of the experiential learning program, but also of the SBDC and other stakeholders. Without taking all the key stakeholders into account and establishing connections with members of the private sector, it is difficult – if not impossible- to carry out the activities and services that are offered by an SBDC.

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