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THE IMPORTANCE OF THE EDUCATION TECHNOLOGY AND THE INTERNAL MARKETING IN TEACHERS OF A HIGH SCHOOL OF TIJUANA, BAJA CALIFORNIA, MEXICO

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ABSTRACT

The use of the technology in the educational activities is very relevant because can provides the tools to students, when they finished your educational career, and develop your skills and qualifies to be applied in the industry of the Tijuana, Baja California, which located in the northwest of the Mexican Republic. One relevant aspect of the use of the educational technology is the resistance of some groups of teachers, which were evaluated in a high school of this city, to have an actualization to use the technology that can support to realize his topics of any thematic in the classrooms. For this reason, an application of strategic method called internal marketing was evaluated in all teachers of the high school, where was made this investigation, to convince to us the technology in his scholar activities and promote to the students to use the technology with adequate use to be improve the skills of students and teachers. This is very important to evaluate the skills of students to be use the technology in any type of industrial process and in any type of industrial plants, considered in this scientific study the activities in the industrial activities of the Tijuana city. The use of the educational technology support to students when finish his career, to design and develop with specialized software as AUTOCAD, Solid Works, the structure of the industrial process in the agricultural industry where was made this investigation. Also, with the specialized software of mathematics as MATLAB was made the statistical evaluations and simulation of the industrial process and sale to customers, and finally was made the automatized systems by specialized software to control factors as temperature (°C) and relative humidity (RH, %) to improve the crop yielding of the asparagus cropped. This scientific study was made from August-2021 to July-2022 in a high school located in the Tijuana city. In this study was observed that teachers that was generated a resistance to use the technology in his scholar activities and promote to students, with the internal marketing strategies, these teachers improved his skis about the technology and promote to use to students adequately.

Keywords Educational technology, industrial activities, specialized software, industrial processes.

1. INTRODUCTION

The education technology is a relevant thematic in the educational institutions where was used the most modern technology to the teaching-learning process from teachers to students, which will be applied in the functions of students when they will be working in industrial, commercial or government activities (Estapa et al, 2017). In the industrialized countries as England, France, Germany, Italy, Japan, Korea, United States of America (USA); and other

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countries that are used in the most modern technology. Figure 1 shows the three principal factors that support to the educational institutions about this thematic (Mallinson, 2018).

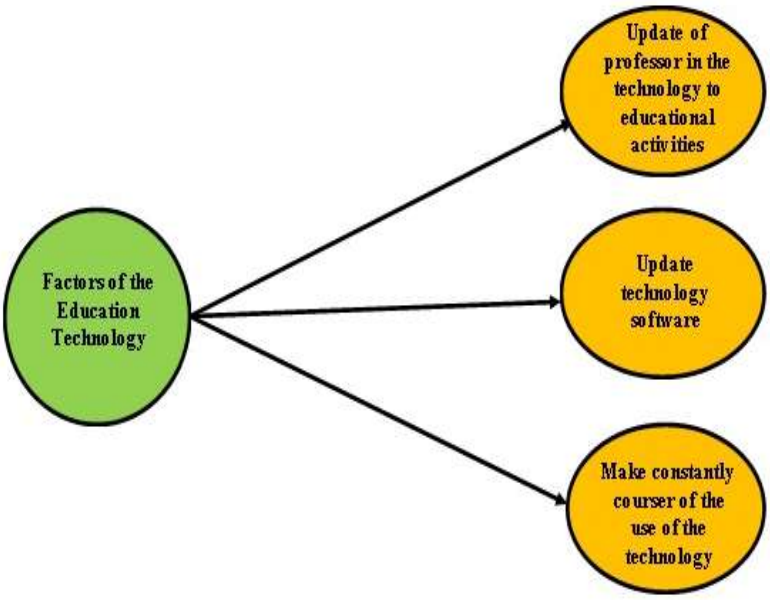

Figure 1. Factors of the education technology

Figure 1 shows the principal three factors that are used in the education technology to support to teachers to update and have an educational system as teaching-learning process to obtain specialized students to industrial, commercial and government activities (Aletdinova, 2017). This thematic is relevant to generates students with a great skill to use the modern technology to solve industrial, commercial and governments problematic situations, and have an industrialized regions of countries to have more competitivity in the industrial commercial activities. Only that some professors, presents resistance of this thematic, because not want get updated, and not use the modern technology in the educational activities (Aleksankov, 2017).

Opportunity to use the technology

The majorly of the educational institutions of the world, have at least any type of the technology software to learning about the approach of the technology with modern software as basic and specialized techniques and methods to make great quantity of functions, which are realized in industrial, commercial and government activities (Dagdilelis, 2018). For this reason, all teachers of the world, debit update about the education technology, with the techniques and methods, in addition with the basic and specialized software to the teaching-learning process, reaching the update of the students about their skills to use the technology in industrial, commercial and government activities to solve problematic situations and improve the operations. Figure 2 shows the type of educational institutions that use a lot time of times the education technology (Aleksankov, 2017).

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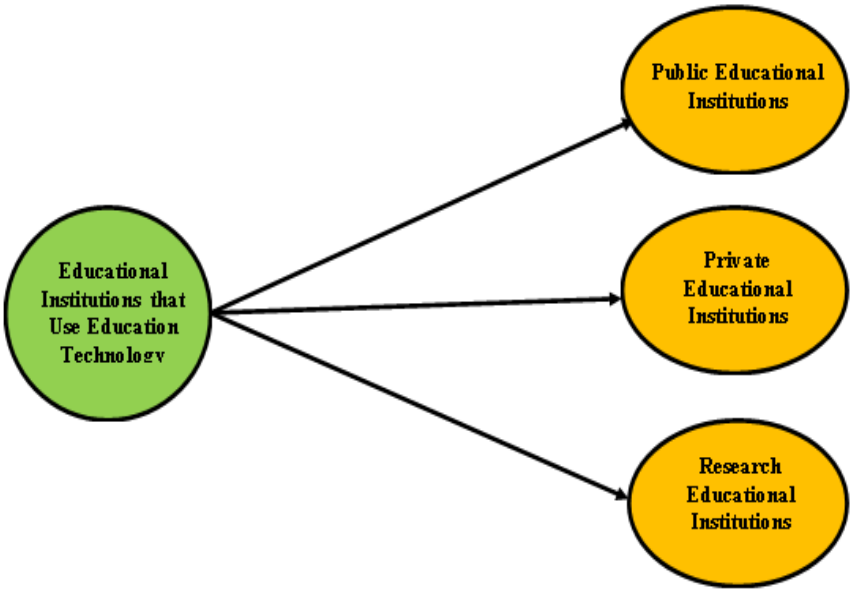

Figure 2. Educational institutions with education technology basic and specialized methods and techniques

Figure 2 represents the main educational institutions in any place of the world, which are used the education technology, to improve the teaching-learning processes.

Online courses in the educational institutions

Actually, exists a lot online courses that can use in the educational institutions, which are designed and presented by the Secretaria de Educacion Publica-SEP in Mexico to update the teachers from the maternal and preschooler level to the university level, where are made to approach in the classrooms or informatic laboratories or other type of scholar laboratories. These online courses, have high costs and for this reason debit be approached by the teachers. Some teachers present resistance for these online courses and directive and administrative personnel, debit convince to all teachers to take these online courses (Aletdinova, 2017.

Education technology in the Covid19 pandemic

In the Covid19 pandemic, was used a lot times the online courses and basic and specialized software, because was necessarily made the scholar courses by internet for the presence for this pandemic (Estapa et al, 2017. This situation was made to avoid the contagious between students, teachers, administrative and directive personnel. For this reason, a lot teachers in the world must have use the educational technology to teach and support to students, being necessary the update of all teachers if the world in the use of internet with technological techniques and methods to made this event during the Covid 19 pandemic. A lot professors in the world made resistance, and they had to learn about the education technology with a lot resistance from they (Mallinson, 2018).

Education technology characteristics

The Association for Educational Communications and Technology (AECT), mentions that the educational technology is the analysis of study and evaluation to the ethical practice to facility to the users about the use of basic and specialized software for any type of activities: industrial, commercial and governments operations. The education technology use systems have two basic devices, being the first the software, which is the basic and specialized processes used in any type of applications, focused in this investigation to the education technology, made by expert programmers to use the technology to the teaching-learning process in the educational institutions. Other device is the hardware, where have the function of elaborates the operational functions, which are programming for expert programmers. Also, the education technology has the relevant aspect of the teaching-learning process as the design, development, use and scientific analysis of the programming software utilized in the education technology operations, where realizes the functions optimally (Moon et al, 2015).

Internal marketing in educational institutions

This thematic is very relevant in any type of activity, to have efficient results in the operative yielding of workers of diverse functions, where is applied to increase the quality service. The internal marketing was founded the way to increase the productivity and quality levels of any activity and every day is improves the operations (Figueroa, 2020). For about 20 years, the education sector has implemented the ISO9000 system as a service quality action (Al-Borie, 212)), in its activities as a customer service process, and in the in the last five years, due to the competitiveness of

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educational institutions. With this, the service in any type of educational institution, has been strengthened, to improve the diversity of processes, applying continuous improvement, which is highly focused on the engineering area in industrial companies, mainly (González et al., 2012;). In the customer service process where the competitive level and customer treatment are related, four aspects are considered, which are shown in figure 3, where the relationship between the levels of competitiveness and customer treatment is observed, being factors relevant in the generation of customer service of any activity and service company (Lopez et al, 2016)). The relationship includes:

Level 1 (red color). Promotes the factors of the ineffective and unpleasant situation, such as the worst level, by representing.

Level 2 (orange color). Represents an effective and unpleasant situation, improving the level a bit, by representing.

Level 3 (yellow color). Indicates an ineffective and pleasant situation, improving the level, by representing.

Level 4 (green color). Illustrates an effective and pleasant situation, such as the best level, by representing.

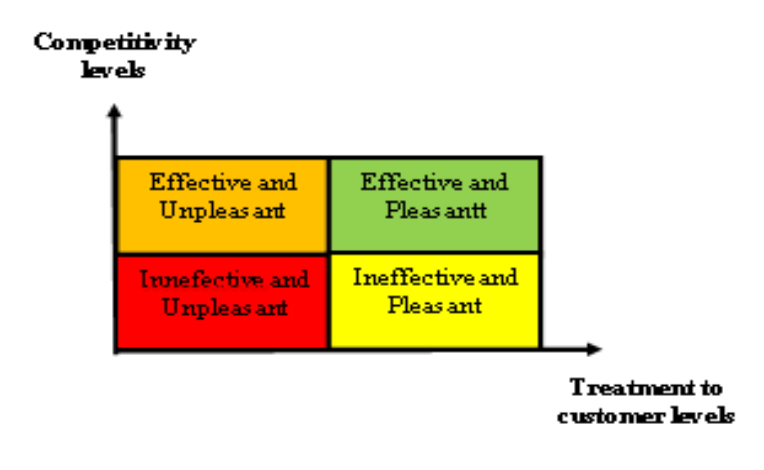

Figure 3. List of levels of competitiveness and customer service

Internal marketing in student services

One of the important aspects of internal marketing with respect to customer service is to apply the appropriate strategies used by executive or managerial staff (Tang et al, 2020), as well as heads of departments of any type of educational institution, with employees or public servants, to help achieve effective conviction. With it, that employees carry out their duties efficiently (Phabmixay et al, 2018). This is to generate a customer service process in an optimal way, and thus be constantly increasing the levels of customer satisfaction, with respect to the facilities and dignified treatment of the customer (Sotelo et al, 2017). A very important factor to develop internal marketing strategies is communication, requiring that it be as clear, concise, and enjoyable as possible on the part of directors, managers, and heads of departments of higher education institutions with their employees (Tortosa et al, 2014).

2. METHODOLOGY

This investigation was made to support to teachers of a high school of the Tijuana city, which was measure the operative yielding of teachers as program of the SEP-Mexico. In this scientific study was made three activities to determine the grade of participation of professors with respect to the education technology and the use of this technology to the teaching-learning process:

a) Correlation evaluation of the education technology and the internal marketing method. This part was made to determine the percentage of professors that was participating in the period of this scientific study, being before and after apply the internal marketing.

b) Correlation analysis of the operative yielding of teachers with the internal marketing method. This section was made to determine the relationship of the online courses elaborated by the SEP-Mexico and the educational institution where was made this scientific study and the operative yielding using the technology tools to the teaching-learning process with students, being before and after apply the internal marketing.

c) Correlation analysis of student's skills and the internal marketing method. This part was made to analyze the effect of the application of internal marketing and the operative yielding with respect to use the technology tools to teach to students, and the students skills presented. This was before and after apply the internal marketing, when was evaluated the students' skills of different topics, being promoted by the teachers of the high educational institution evaluated.

3. RESULTS

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This investigation shows relevant information about the operative yielding and the impact of the application of the internal marketing to convince to teachers to use in the teaching-learning process, and the benefits of this strategic method to improve the ways to teach to students from teachers. In the next sections are illustrated the results.

Evaluation of use of technology tools in a high school

This part of the investigation was made to know about the participation of the teachers of the high school where was made the scientific study, obtaining important information, which shows the professors with availability to learn and teach about the technology tools to students and teachers that was putted resistance to the learn the technology tools. This information is illustrated in table 1. This analysis was made with all professor of the high school evaluated, being 50 professors, which was analyzed by thematic areas of the scholar topics being ten of this educational institution evaluated. The majorly of professors (80%) have most of 50 years, which presented more resistance to the technology tools learning process, being a relevant aspect.

Table 1 Evaluation of use of technology tools in a high school of Tijuana (2021) before the investigation

Parameters / Topics	Quantity of Professors	Professors with Availability	Professors with Resistance
Administrative	6	3	3
Chemical	5	3	2
Communication	5	4	1
Electronic	6	2	4
Electricity	5	2	3
Informatic	6	5	1
Literature	4	2	2
Mathematics	6	3	3
Mechanical	3	1	2
Physics	4	2	2

The last table shows the participation of professor of a high school located in the Tijuana city, where was the age of the teachers was an interesting factor for have the availability of teachers to learn about the technology tools and be applied to teach to students of diverse topics where were imparted in this educational institution. As is illustrated the table 1, is observed that 50 professors evaluated around the middle of these teachers, presented have availability and the other middle had resistance to learn about the technology tools to be used to impart class in the classrooms or laboratories to students in the educational institution evaluated.

Table 2 Evaluation of use of technology tools in a high school of Tijuana (2021-2022) after the investigation

Parameters / Topics	Quantity of Professors	Professors with Availability	Professors with Resistance
Administrative	6	6	0
Chemical	5	4	1
Communication	5	5	0
Electronic	6	4	2
Electricity	5	4	1
Informatic	6	6	0
Literature	4	4	0
Mathematics	6	5	1
Mechanical	3	3	0
Physics	4	3	1

When was begin this investigation was sued the internal marketing method to convince to professors to get with an efficiency technology tools to teach, observing in table 2 the positive impact of the use of the internal marketing in

teachers. As is illustrated in table 2, the quantity of professors with a great availability increased, not at 100%, but the internal marketing provider of specialized researcher of a professional school was relevant to increase the approach of the technology tools and increase the skills and knowledges of teachers and for this reason the skills and knowledge of students of the educational institution evaluated.

Correlation analysis of education technology in a high school

This was made to determine the operative yielding and the quality operability to teach the technology tools to use the technology tools, of the 50 professors of the high school where was made this scientific study, where was evaluated the capacity of obtain the technology tools and teach to students, correlated with the education levels of each teacher and the conscientization of professors to have the availability of learn about the technology tools and the capacity to teach to students of any type of course level of the high school evaluated. This information is expressed in table 3.

Table 3 Correlation analysis of the use of technology tools of professors and the capacity to teach in a high school of Tijuana (2021) before the investigation

Parameters / Topics	Quantity of Professors	Operative Yielding, %	Quality of Operability, %
Administrative	6	66	67
Chemical	5	69	70
Communication	5	68	71
Electronic	6	65	69
Electricity	5	67	68
Informatic	6	70	70
Literature	4	68	65
Mathematics	6	69	69
Mechanical	3	68	70
Physics	4	70	69

The table 3 illustrates the operation yielding and the quality operability to teach to students, with ranges of 60% to 70% before apply the internal marketing methods and when was applied this method, the operative yielding and quality operability improved at 80% to 90% levels, which is expressed in table 4.

Table 4 Correlation analysis of the use of technology tools of professors and the capacity to teach in a high school of Tijuana (2021-2022) after the investigation

Parameters / Topics	Quantity of Professors	Operative Yielding, %	Quality of Operability, %
Administrative	6	84	87
Chemical	5	85	89
Communication	5	83	90
Electronic	6	85	88
Electricity	5	86	89
Informatic	6	83	85
Literature	4	88	89
Mathematics	6	90	88
Mechanical	3	85	86
Physics	4	89	86

Evaluation of student's skills and use of education technology

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This important aspect was made to obtain information about the approach of students of the capacity and knowledge of professors, which were had online courses of the SEP-Mexico and experts of diverse topics to the teaching-learning process and approach the technology tools to teach to students and improve his skills, and can participate in academic and researching activities to improve his knowledge. Tables 5 and 6represents the correlation analysis of the technology tools and the students' skills observed by the teachers with the capacitation of the technology tools. The students evaluated were 300 of the different topics. Table 5 represents the information before the apply the internal marketing method and table 6illustrated information after the application of the marketing method.

Table 5 Correlation analysis of the use of technology tools and students' skills in a high school of Tijuana (2021) before the investigation

Parameters / Topics	Quantity of Students	Operative Yielding, %	Quality of Operability, %
Administrative	32	65	69
Chemical	28	66	64
Communication	23	62	60
Electronic	25	68	69
Electricity	37	65	70
Informatic	39	66	63
Literature	32	62	67
Mathematics	32	68	66
Mechanical	28	61	63
Physics	24	65	68

The last table shows the range in percentage of the improvement of student's skills before the application of the internal marketing method, where was observed the range between 60% to 70% levels. And table 6, which have the information about the students' skills after the application of the internal marketing showing the ranges between 80% to 90% levels, observing a relevant increment.

Table 6 Correlation analysis of the use of technology tools and students' skills in a high school of Tijuana (2021) after the investigation

Parameters / Topics	Quantity of Students	Operative Yielding, %	Quality of Operability, %
Administrative	32	84	89
Chemical	28	87	88
Communication	23	85	84
Electronic	25	88	85
Electricity	37	89	90
Informatic	39	84	87
Literature	32	88	84
Mathematics	32	83	88
Mechanical	28	85	85
Physics	24	87	86

4. CONCLUSIONS

This investigation was obtained relevant information about the technology tools in the education technology, approached by the teachers, which at the begin of the scientific study has resistance around of the middle of professors of the educational institution evaluated. After the application of the internal marketing was improved the approach of the technology tools and the of teachers and students' skills improved to capacitate to students to realize the industrial, commercial and government activities in this modern city. The effort of educational authorities and the person to

promote the courses of the internal marketing were correlated to improve the operative yielding of the teachers and students.

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