



STRATEGIES FOR DISSEMINATING KNOWLEDGE ABOUT DISTANCE EDUCATION IN A MEXICAN HIGHER EDUCATION INSTITUTION

ELSA BEATRIZ PALACIOS CORRAL¹, MANUEL FLORES FAHARA²

¹Professor & Director for Innovation and Design Department,
Ave. Eugenio Garza Sada 2501, Col. Tecnológico, Monterrey, N.L. 67174

²Professor for Education, Humanities and Social Science School, Tecnológico de Monterrey



**ELSA BEATRIZ PALACIOS
CORRAL**



Manuel Flores Fahara

ABSTRACT

This paper describes the history of the distance-learning mode of a Mexican higher education institution, and highlights the dissemination of knowledge strategies, which led to its consolidated model and best practices over the past 25 years. Firstly, the paper provides a review of the literature on the topic. Then it tells the story of the mode and provides an analysis of the dissemination strategies used by the institution. Finally, the conclusions and some recommendations on dissemination actions, which might be implemented to improve the process and assure a better capitalization of organizational knowledge, are discussed.

Key words: Higher education institution, distance education, organizational learning, and knowledge dissemination.

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Article Info

Received on:18/03/2015

Revised from:28/03/15

Accepted on: 31/03/15

Available online:01/04/15

1. INTRODUCTION

Higher education institutions, like other organizations, can be impacted by constant environment changes, which demand adaptation and change (Collinson & Cook, 2007). Organizational learning, and specifically knowledge dissemination, is a factor that facilitates adaptation to changes in the environment of such institutions (Di Bella & Nevis, 1998).

Distance education is a mode that combines the use of technologies to take the institution beyond the classroom setting. This mode arose in some institutions in response to environmental changes and new learning needs of students (Piña, 2008).



Based on the analyses of documents such as official presentations, institutional publications, meeting minutes and webpages, as well as participant observations (Spradley, 1980), this paper describes the way in which a Mexican higher education institution adopted distance education 25 years ago as a strategy to deal with the changes and demands in its environment. Particularly stressed is the process of knowledge dissemination on the distance mode followed by the institution to achieve organizational learning.

For the above, the most relevant aspects stressed by knowledge dissemination and organizational learning literature are presented, in order to provide the background and the most important achievements in the institution's distance education efforts. Also described, is the knowledge dissemination strategy for distance education applied by the institution over its 25 years' experience with this educational mode. Finally, conclusions and recommendations on actions for the dissemination of knowledge about distance education, which could be implemented, to improve the process and assure a better capitalization of organizational knowledge are provided.

2. Organizational learning and knowledge dissemination

Revolutionary changes are creating dynamics that are having a strong impact in the performance of the economy, politics and society at large. New organizations will need to take these dynamics into account and transform themselves in order to be able to respond to change, complexity, and the uncertainty of the context (van Winkelen, 2010).

The above also applies within the realm of educational institutions. Some studies (Kulatti, 2000; Jansen, 2007; Grummell, Devine and Lynch, 2009) exemplify the way in which context changes have indicated that higher education institutions should adjust their practices and structures.

According to Senge (1990), organizations that will become relevant in the future will be the ones that discovered how to take advantage of the enthusiasm and learning capability of people at all levels. Palacios (2000), asserts that organizations should learn to create, develop, disseminate, and exploit knowledge in order to increase their capacity to innovate and competitiveness to adapt to the demands of a changing environment.

Collinson and Cook (2007) point out that educational institutions have the great challenge of taking advantage of individual learning in order to institutionalize and use it for their adaptation and change needs; the foregoing despite being considered as traditional and resistant to change (Schulz & Geithner, 2010). Organizational learning is a response to this challenge and at the same time, a process that allows the organization to improve its performance by channeling its experiences (DiBella and Nevis, 1998), and to achieve renewal and transformation (Collinson and Cook, 2007).

The organizational learning processes leads to follow the phases of acquisition, dissemination and use of knowledge proposed by Di Bella and Nevis (1998). In order for the institution to assure good organizational learning it is very paramount for it to learn the importance of sharing and diffusing knowledge, which corresponds to the dissemination phase (Loon & McShane, 2010; DiBella and Nevis, 1998; Collinson and Cook, 2007).

For organizations in general, there are barriers to knowledge dissemination, such as communication problems, lack of clarity in collaboration objectives, lack of organizational incentives and lack of members' time (Seider-de Alwis and Hartmann, 2008).

In the realm of educational institutions, Collinson and Cook (2007) highlight the fact that the lack of collaboration among the members of these institutions, especially among faculty, can be related to issues of structures and rules. The environment of the organization can be so "toxic" that it isolates the members and prevents exchange and collaboration.

In the subject of knowledge dissemination for organizational learning, the importance of the existence of informal dissemination processes, such as spontaneous and voluntary activities for sharing, is highlighted (Nonaka and Takauchi, 1995; DiBella and Nevis, 1998). But above all, there should exist the commitment of the institution to make sure that each individual and group knowledge can be used for its adjustment and



change processes in response to the demands of the environment. It is also important for institutions to consider the tacit knowledge, the most strategic for organizational learning (Nonaka, 1991).

The next section relates an organizational learning experience lived by a higher education institution in Mexico, which for the purposes of this paper will be called Mexico University.

3. Distance education in México University

The Mexico University is a Mexican institution that has experienced change in dealing with the demands of the environment. This educational Institution was founded in 1943 in the northern zone of Mexico, and during the 70s and early 80s, it experienced geographic expansion, which transformed it into a multi-campus system with 26 academic campuses throughout the Mexican Republic.

In the face of this growth arose the need to improve their communication system so as to interconnect the students, faculty and personnel within the different campuses. Among other actions, in 1987, a satellite network was installed to transmit voice and data among all of the Campuses.

Having taken advantage of the technology to solve its communication needs, in 1988, there ensued an academic need that led the Institution to channel its experiences in the use of technology.

As a member of the Southern Association of Colleges and Schools (SACS), the Mexico University had the need to comply with the criteria set forth by this organization to accredit its members every 10 years. In 1987, the Institution was asked to comply with faculty ratios with professors that had at least a Master's Degree in their area of specialty in all undergraduate courses, and at least a PhD in 25% of the terminal courses of all programs.

The Mexico University was very far from complying with this criterion because in 1988 only 38% of its faculty in undergraduate programs had a Master's Degree and only 30% of the professors in terminal courses had a PhD (Palacios, 1995).

In 1989 the experience of the use of satellite communication technology was channeled and applied to serving the faculty training needs. That is how in that year, the Satellite Educational Interactive System (SEIS) came to be, which linked all of the campuses in courses taught from the Monterrey and Mexico State campuses. The SEIS arose as an institutional project for building the distance education mode. To turn it into a reality, the efforts of different entities and all of the campuses of the Institution were integrated.

Thus the distance mode arose strongly in the Institution, with the backup and coordination of the different areas and campuses, but above all, with the active participation of deans, faculty and students who accepted the mode, despite its areas of opportunity.

The graduate programs were a priority in the offering at the launch of SEIS. In June 1989, the first course on Programming Systems in the Masters Program for Computer Science was offered.

Taking advantage of the benefits offered by the distance education model designed for the graduate programs (see Appendix A), in January 1990, two courses that were common core to all undergraduate programs were offered. With this offering of distance undergraduate program courses, it was possible to provide to the students of all campuses, the teaching of highly experienced professors who also had the credentials necessary for SACS accreditation.

The experience of the first programs taught in the distance mode led the Institution to develop exchange strategies among deans and faculty. This with the purpose of adjusting both the academic model of the programs, as well as the administration, operation and technology use aspects.

Once it was offering several graduate and continuous education programs, in 1992, the institution explored the alternative of offering programs outside the Mexico University campuses. Soon the link to the alumni association began to be used, and receiving classrooms were installed to be able to take continuing education programs in their cities. The process consolidated and allowed the Institution to disseminate the distance mode beyond its own premises. In 1984, in addition to its 26 campuses, the Mexico University had 23 external sites in companies, universities and alumni association offices.



Over the first few years, in addition to consolidating the initial model for the distance programs it was possible to incorporate certain innovations that came up as projects, which would later be formalized into strategies and disseminated throughout the Institution. Among others, the following were established:

- In 1991 the figure of facilitating professor was established. This faculty member would coordinate the local work of the students in the campuses, stemming from significant coordination with the tenured professor teaching the course, both for operational and academic aspects.

- In 1993, assistant professors were assigned to the tenured professors of massive courses, in order to assure personalized attention and a better response time in providing feedback for activities.

- In 1994 satellite based courses were enhanced with the use of the first multimedia, and the use interactive resources with additional content to the course that were sent to the students through physical devices. The use of multimedia was a preamble so that in 1996 the first webpages were released.

- Also in 1994, in view of the need to centralize the most advanced knowledge on distance education strategies in a group with pedagogic bases, development was begun to produce a profile for the function of instructional designer.

The first six-year cycle in the distance mode left in Mexico University a wealth of experiences and learnings in more than 15,000 undergraduate program students, more than 4,500 Masters Program students, more than 300 professors and over 20,000 participants in lectures and continuous education programs (Palacios, 2005).

And thus, in 1996, the SEIS turned into the Virtual University (VU) of the Mexico University. The institution decided to forcefully drive distance education and for this, established an organized structure that would centralize many of the functions that hitherto had been carried out throughout the different entities.

Also, in the new stage, the decision was made to evolve the instructional model by incorporating new technologies, such as the videoconferencing system, and the use of webpages with larger amounts of content.

The programs offered also evolved, not only by increasing the number of undergraduate courses and graduate programs, but also, by including new projects altogether:

- The Virtual Business Classroom, with specialized offerings to be received at company facilities.
- Social Programs, an effort planned to contribute to the development of human and social capital to transform Mexico, with programs aimed at faculty, NGOs, public officials, communications media, and the community at large.
- School of Education.
- Community learning centers, a project from which, the distance education has been taken to remote rural communities with little access to education.

Consolidated as a virtual education entity of value to Mexico and Latin America, in 2002, the decision was made to change the instructional model and migrate it from an educational offering mostly supported by the use of satellite link to a full offering of on- line courses (see Appendix B).

Over the course of 2013, the Virtual University provided services to 48,509 students registered in its academic programs; 143,251 participants in its continuing education programs; and 31,114 participants in its education for development programs; a total of 222,874 persons who experienced distance education.

At the close of this 25-year stage of distance education within the Mexico University, new horizons and ways to assure the evolution of the teaching-learning model open up to take advantage of the best practices not only in virtual programs, but also, in new modalities that must respond to the demands of the environment. For this, the Institution should channel its experiences in distance education, by performing more actions for dissemination of knowledge about this mode within the entire organization. The next section is a description and analysis of the dissemination strategies that are identified in the distance education experience of the Mexico University.

4. Dissemination Strategies for distance education

Organizational learning is a process that allows institutions to channel their experience to improve their performance (DiBella and Nevis, 1998), as well as to renew and transform themselves (Collinson and Cook, 2007). Within Mexico University and according to the documentation researched, the start of the distance mode of education occurred as of the first experiences in the use of technology which were channeled to cover academic need, but that also, led the institution to transform itself in several aspects.

A learning organization faces many challenges, one of the most important of which is knowledge dissemination throughout all its levels (Nonaka and Takeuchi, 1995). The success of this process will depend on the systems created and implemented by the organization for collaboration and exchange, and also on the culture and climate fostering it (Davenport and Prusak, 1998).

The formalization of the distance mode and the subsequent process of dissemination of knowledge about it lies to a great extent on the efforts carried out during the first six years, over which systems were established to assure collaboration and exchange among its members. As stated in the foregoing paragraph, at the beginning of the distance mode work teams were created with members from different entities and roles, who participated in defining the model and its operation.

Despite the formation of an area to coordinate the efforts to operate the programs in the new mode, the institution distributed the responsibility for the creation and deployment among all of the campuses and strategic areas.

Each party would play a role focused on the common objective of assuring a successful distance education model. True collaboration exists when people make an effort to find the same results jointly in such a way that they can share the work, the thinking and the responsibility (Perkins, 2003). Collaboration and exchange in an educational institution facilitate knowledge dissemination (Collinson and Cook, 2007).

In the first few years, in addition to forming work teams to carry out the strategy and facilitate the operation, it was very important to form exchange groups among faculty members. In the schools there is evidence that the professors do not have a constant practice of knowledge dissemination, despite the importance of exchange on practices and perceptions which can improve the performance of these institutions a lot (Collinson and Cook, 2007). The development of Distance Education in Mexico University also had the involvement of faculty as a determining factor. Within the main areas that were established in the first few years, the faculty groups committed to the project through exchange and collaboration. The following were some of the cases that show the dissemination strategies used among faculty groups:

- In the instructional model of undergraduate programs defined in the first semesters of the distance mode, it was established that it was very important that in addition to the tenured professor that taught using the satellite, there would be local work time with face-to-face faculty. In this way, the students that had a totally face-to-face experience could be introduced to the new mode with local accompaniment. This model would not have worked had it not been for the decision of integrating the professors who were involved to exchange and build the model jointly. So in the summer of 1990, the first face-to-face meeting was held between the professors of courses in undergraduate programs where they had the opportunity to share experiences with the mode and to jointly plan the course. This additionally provided the opportunity for all of them to reach a consensus on the distance model and how to take advantage of it in order to enrich student experiences (Palacios, 1995).

As pointed out by Winkelen (2010), a way of successfully disseminating knowledge in organizations is to make sure that participating groups can collaborate and maintain a common understanding of the importance of the new knowledge and what is expected of them.

- In order to assure that the distance mode would support the development of the faculty of the Institution, the Masters in Education with areas of Specialization was proposed. The educational model of these masters established the teaching of satellite courses during the semester, and

face-to-face courses, especially in the different specialties, during the summer. This strategy was established not only for the convenience of the instructional model, but also as a strategy that allowed integrating the professors of the different campuses. During their first semesters the Master of Education managed to have students enrolled in almost all the campuses comprising the Mexico University (Palacios, 1995).

These professors not only were able to experience the distance mode, but also they had the opportunity to establish informal exchange and collaboration networks. The professors would exchange not only on topics relating to their subjects but also they would exchange on issues to better understand the mode and ideas to improve in drive it forward. Generating activities that allow the informal exchange of knowledge and the networking facilitates dissemination and organizational learning (Nonaka and Takeuchi, 1995; DiBella and Nevis, 1998).

In general, the knowledge dissemination on distance education during the first years of the mode was a strategy driven by the leaders of the Institution. For a learning organization, leadership plays an important role, because it establishes the knowledge to be disseminated as both a strategy and a priority, in addition to creating the conditions and molding the contextual factors that allow the transfer of knowledge (Amy, 2007). Within Mexico University, the participation of the main deans in the process of defining the strategy and its diffusion was very important. Many deans acted as professors, course instructors or lecturers in the first few semesters. (Palacios, 1995).

Finally, the consolidation of the process of dissemination that the institution experienced in the first years of distance education, culminated with the decision to give more weight to the organization by creating a Vice-Presidency within the Institution to manage the strategy and programs. Thus the Virtual University was created in 1996. The first few years when "learning became institutionalized" on distance education were strategic (Crossan, et al. 1999) through the different processes generating exchange networking and collaboration to facilitate knowledge dissemination about the mode.

The knowledge dissemination model on distance education at the Mexico University, was characterized by the generation of an eco-system that integrated the following strategies:

- Strong involvement of the institution's leaders.
- Integrating different entities from the entire institution, which participated actively in the definition of strategies and the operational model of the mode.
- Distribution of the mode responsibilities throughout areas in the entire Institution. Putting the possibility of centralizing all knowledge on the mode in a single area first, they bet on starting distance education by making it a part of all.
- Active participation of professors in the definition of the instruction model. Selecting high-impact courses in the Institution and having enabled spaces and times for exchange among the faculty was an important support for the mode.
- Institutionalizing knowledge on the mode, which implied integrating the knowledge of such mode to the life of the Institution in order to turn it into something generalizable. It additionally allowed improving the original strategy and the generation of knowledge to shape new strategies.

4. Recommendations for the process of dissemination at Mexico University

The development of the distance education model in Mexico University is an achievement that has been endorsed both for its great impact in the number of programs and students and for the international recognition to the Institution for its model. However, in order to assure organizational learning on the subject, there are certain situations where the Institution needs to reinforce its knowledge dissemination process.

A good deal of the experience in distance education of the Institution has been disseminated and integrated into the life of different areas and people, especially that which has been capable of being translated into explicit knowledge. Nonetheless, a lot of this experience stems from tacit knowledge, in other words, that which we all know but we cannot necessarily express. It's knowledge tied to beliefs, ideas, and



values (Nonaka, 1991). A large part of the history, the processes and the lessons learned, have remained with those who participated in different roles and stages. There is still more of that tacit knowledge of the members of the Institution to document and pass on.

And it is precisely the tacit knowledge that has the greatest impact in the generation of new knowledge within organizations (Collinson and Cook, 2007). Therefore, it is necessary that this type of knowledge be separated from the "knowledge workers" and integrated to the Institution explicitly (Kreine, 2002).

In view of the above a limitation that is detected in the knowledge dissemination process on distance education at Mexico University is the lack of strategies so as to formally and permanently allow the capitalization of the tacit knowledge on the mode.

On one hand, there is no evidence of permanent places for exchange on the mode throughout the entire Institution, not just in the areas formally involved in it. During the first years this was a constant practice, but since the institutionalization of the mode, the places have been scarce where faculty and operational personnel from different areas not part of the Virtual University can sit down to discuss the strategies of distance education.

On the other hand, the explicit knowledge existing on distance education is very focused on those who participate directly in distance education projects and programs. There are no formal training programs on the mode for professors that are not directly involved in distance education programs and who could channel a lot of their knowledge for the professional training and for taking advantage of the face-to-face models.

Also worthy of stressing is the lack of electronic loci to document the experiences on distance education of the last 25 years. An important practice for institutions wishing to keep current in a process of learning, especially in the educational area, is to build and keep current knowledge repositories, expanding the learning environment with that, so as to allow not only access to knowledge but also to assess its value and increase it. (Rowley, 2000).

5. CONCLUSION

In order for organizational learning to occur, institutions must make sure that those who participate in making the decisions will learn jointly as they move along, and share beliefs and the commitment towards the performance of actions that will assure the change (Senge and Fulmer, 1993). This objective needs the commitment of the involved to share and disseminate knowledge, which corresponds to the dissemination phase of organizational learning (Loon and McShane, 2010; DiBella and Nevis, 1998; Collinson and Cook, 2007).

Throughout this paper the case has been made for the dissemination of knowledge on distance education at a Mexican higher education institution. For the above, first some conclusions on the subject were reviewed in the literature, where it was stressed that in the face of different contextual changes, organizations knowing how to take advantage of the capabilities of their people are the ones that will not only be able to survive but also grow and have an impact. In the face of the above, following a process of knowledge dissemination may allow knowledge to be learned and institutionalized in an organization.

In the subject of knowledge dissemination for organizational learning, the literature stresses that institutions should promote and create informal dissemination spaces and processes, such as spontaneous and voluntary activities for sharing (Nonaka and Takauchi, 1995; DiBella and Nevis, 1998).

Likewise a description was given of the road traveled by the institution being analyzed, over 24 years, to the implementation and development of the distance education mode. For this, the way in which the academic and operational models were defined was discussed, stressing the integration of different areas and processes. An important aspect that was highlighted during the historical review is the way in which the different players integrated and related to each other in the process, including the Institution's leaders, in decision-making and in defining the mode. This is perceived to be a key factor that allowed the achievement of significant numbers over the course of 25 years in students, programs and goals achieved.

The above is clearly highlighted in the section describing the strategy for disseminating knowledge about distance education that the institution followed. The participation of areas with different orientations (academic, operational, technological, managerial), the integration into the process of operation of the different sites of the geography spanned by the Institution, and the definition of a single strategy for all, are perceived to be the elements that facilitated the dissemination of knowledge about the mode. Davenport and Prusak (1998) conclude that success in a process of organizational learning and institutionalizing knowledge depends on the systems it creates and implements, and also on the culture and climate that promote it (Davenport and Prusak, 1998).

Nevertheless, as highlighted by the literature the knowledge dissemination process is not an easy practice, let alone in educational institutions (Collinson and Cook, 2007). In the case of the Institution analyzed here, the documentation and results of participant observations, describe a pertinent dissemination process which allowed the achievement of the initial objectives set forth by the Institution during the first stage of this mode; but at the same time, certain limitations are described which are perceived as barriers to achieving complete institutionalization of the knowledge acquire on distance education.

Another conclusion then, is that the process of dissemination of knowledge already extant in the organization needs to be reinforced, but that it needs to continue to increase so as to allow the surge of new knowledge. Especially stressed is the need to assure the dissemination of tacit knowledge acquired by the different players in the process. Tacit knowledge arises in a spiral process that begins with the individual as greater levels of interaction are reached as it moves through the entire organization (Nonaka and Takeuchi, 1995).

This paper is simply limited to presenting the results of an analysis of a specific case which illustrates the dissemination process followed by a higher education institution regarding the subject of distance education, giving both the successes and possible limitations. The conclusions derived from it, cannot be generalized, but they do allow one to get insight and guidelines that may serve in a similar process for organizational learning in educational institutions.

As regards to the subject of the dissemination of knowledge in educational institutions, the recommendation is to have greater formal research as to the dissemination strategies in the different groups comprising the Institution so as to be able to know, whether there are differences in the way of approaching knowledge dissemination, depending on organizational levels or functions. It is also advisable to continue to propose studies that will allow institutions to channel their tacit knowledge properly, as it is key to the development and consolidation of such institutions.

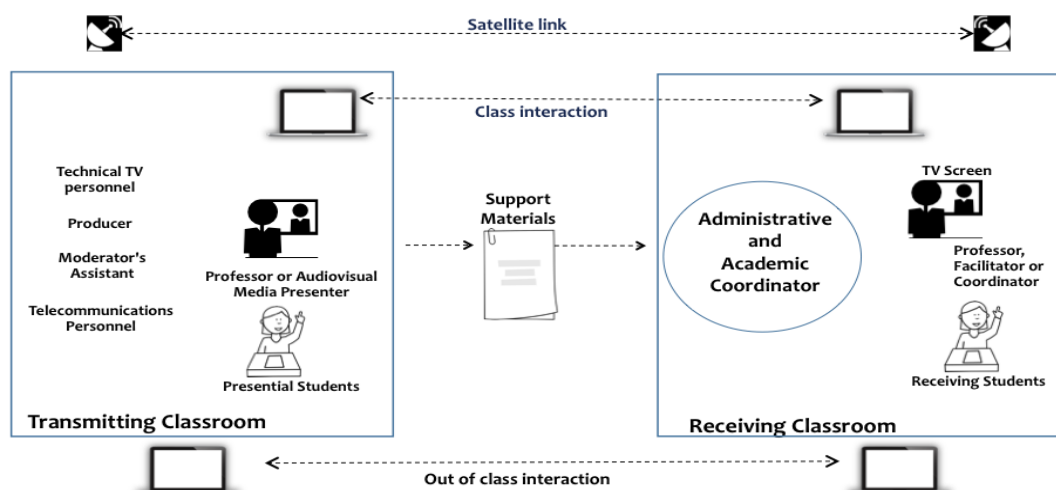
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APPENDIX

Appendix A. General Operation Model for Distance Graduate Programs.



Appendix B. On-Line courses model. 2004

