

Preliminary assessment of knowledge management in education. Study of knowledge creation

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Abstract

The purpose of this study was to analyse the development of the society through an educational institution in Mexico considering Nonaka's Knowledge Creation in the ontological dimension on developing ideas phase to get an explicit knowledge. Become to get tacit knowledge through applying in the context and return to explicitly measure their impact. The research was conducted from 2012 to 2014 considering 1,106 young people from 10 cities within the state of Guanajuato. The results showed that Knowledge Creation has allowed an increment of 51.40% students, inclusion and the creation of three new programmes concluding the usefulness of Knowledge Management in Institutions of Mexico. The study shows a model to help another institution to increase their competitiveness.

Keywords: Education, knowledge management, knowledge creation.

1. Introduction

Knowledge Management is becoming a relevant practice inside the organisations not only for their success but also for the development of societies (Ragab & Arisha, 2013). The development of society, most of the time, implies an institutional inclusion that supports the basic needs of the population and one of the most important is education. The education in Mexico—is an important element for society development—is facing too complex challenges like desertion or education coverage. According to the National Institute of Statistics, Geography and Informatics (INEGI) (2010), of each 100 students of 20 years or more, just five go to school and 53% of young people between 15 and 19 years old aren't registered in any educational programme in spite to have the biggest population in the history of the country (OECD, 2014). For this reason, the pressure for searching new ways and creating new knowledge to avoid this kind of problems are important tools to support the society development.

Today, the knowledge management is a relevant practice to create new knowledge that would support the development of society, even though it represents one of the most critical variables to get an organisational success (Argyris & Schon, 1978; Kogut & Zander, 1992; Nonaka, 1991). Many researchers have done considering knowledge management practice in organisational and institutional stage like the research of Smokotin, Petrova and Gural, (2014). Smokotin et al. (2014) registered the theoretical principles of knowledge management focused on how to move the classical university to one that is more research-oriented. The author believes that knowledge management is a strategy of the modern theory that supports the work of university oriented research and brings it to international standards. Connell and Voola (2013) conducted a longitudinal study in an industry cluster through the transfer of knowledge, considering variables such as market orientation and competitive advantage, along with positive results of this relationship; although they are victims of their own success due to fast growth. Ryan, Zhang, Prybutok and Sharp, (2012) research's highlights three ways of analysing knowledge management: leadership, strategic planning and customer/market focus. This study analysed originally 1,110 employees of which 178 correspond several questions focused on e-government initiatives, concluding that, leadership, strategic planning and customer focus/market are factors that significantly affect knowledge management in e-government environment. Hung, Lien, Yang, Wu and Kuo (2011) analysed the knowledge management through a total quality system. This study was performed at 1,139 companies resulting in a positive relationship between the total quality system and learning, innovation and organisational development. Yang (2010) examined 500 high-tech enterprises in China through their CEOs. Using variables as the reward system, process innovation, integration and integrated past projects, market intelligence and intraorganisational knowledge development for analysis, the results suggest that the reward system, process innovation and knowledge sharing improve the effectiveness of knowledge management in these businesses.

In addition, many research studies were exposed considering different models that promote knowledge management and its creation. For example, the Trumbo's (1961) model focused on the trait; the spiral knowledge model, from Nonaka and Takeuchi (1995), focused on the conversion of tacit knowledge to explicit knowledge for properly exposing inside the company. This model has been a precursor from many concepts and further research (Lloria, 2000). Another way of achieving this was developed by a prominent international panel of practitioners and academics of knowledge management known as the Knowledge Chain model (Holsapple & Singh, 2003). This model helps to measure the learning level of organisations considering the creation of new knowledge, identifying some activities focused on knowledge acquisition, identification, selection, generation, internalisation and externalisation included in primary activities and measure, control, coordination and leadership corresponding to secondary activities. Liu, Chen and Tsai (2004; 2005) considering obtaining, refining, storage and transfer of knowledge, revealed that the capacity of knowledge has a very large and positive impact on the competitiveness of industry in Taiwan, developing strategies for new products in the high-tech industry. Darroch (2005) found that the acquisition of knowledge dissemination and responsibility have different effects on innovation. Besides, we have the knowledge management

model for Small and Medium Enterprises developed by Calderon and Garcia (2012). This model exposes the relationship between culture, direction style, structural and relational capital trying to achieve a systemic approach and knowledge.

As we can see above, to create, transfer and adopting new knowledge are the key resource in today's knowledge economy (Chase, 1997). Today, there exist several methodologies that support the analysis of knowledge management, however, at the moment, to our knowledge, assess the impact of new knowledge creation in educational institutions in Mexico, still are a few explored.

There are several definitions of organisational knowledge creation, but one of the most important definitions was registered by Nonaka and Takeuchi (1995) as the capability of a company as a whole to create new knowledge, disseminate it throughout the organisational and embody it in products, services and systems. The basic argument for knowledge creation is the organisation-individual-environment interaction (Nonaka & Toyama, 2003) that provides a relation to get the expansion of knowledge. This expansion of knowledge was called 'ontological dimension'.

In the ontological dimension, an informal community (customers, suppliers, distributors or competitors) provides the development of new ideas (Nonaka, 1994). These new ideas would provide the elements to face the environment changes becoming a source of knowledge creation combining tacit and explicit knowledge. For this, the purpose of this study is to show a preliminary assessment of knowledge creation impact related with an educational stage in Mexico under the ontological dimension considering the developing of new ideas as the beginning of the process.

2. Methodology

According to the objective, the methodology that best fits the characteristics was a case of study (Yin, 2013) considering the knowledge creation through an institutional education (University level) under quantitative and longitudinal design.

In the first phase, with the purpose to evaluate the impact of knowledge creation in educational stage in Mexico through Nonaka's model of ontological dimension in the developing ideas phase, we try to get the explicit knowledge considering 1,106 people of 15–20 years old during 2012–2013 of 10 local cities from the state of Guanajuato. Second, in tacit knowledge phase, applying in the context the new information and third, return to explicit knowledge measuring their impact.

In this sense, the methodology was registered considering the individual projection, benefits of keep studying and professional choice; provide a context and measuring their impact.

3. Results

According to institutional education, to create new knowledge, under developing it is the first best ideas phase, secondly, it has to most know the explicit knowledge through individual projection, benefits to keep studying and the third, the professional choice. In this sense, in the first question, just a 27% would be studying and 39% have to work for study; second, the 52% registered for professional development and 48% improve social conditions and the third, 36% physics mathematics sciences, 28% social sciences, 23% biologic sciences and 1% arts.

Table 1. Developing ideas phase

Individual projection	Benefits of keep studying	Professional choice	
Study	27% Professional development	52% Physics Mathematics sciences	36%
Study and work	39% Improve social conditions	48% Social sciences	28%
Work	15%	Biologic sciences	23%
Work in USA	18%	Arts	1%
Stay at home	1%	Without answer	12%

In the quantitative explicit knowledge, it shows the preferences of young people through empirical research. This formal knowledge was applied in the university context considering tacit knowledge to obtain explicit knowledge.

The results of the explicit-tacit combination are measurements through the number of new students and the creation of new programmes. The results show that the increment of new students was of 1,247 in 2012 and improves to 1,888 in 2014 representing 51.40% of increment. These activities have allowed the aperture of three new educational programmes, two in Mathematics and one in biologic science.

4. Discussion/Findings

Even though, in knowledge management practice there exist many variables, this study addresses those who need to find answers to question related with knowledge management, in specific with the knowledge of the creation of educational institutions, considering as a main goal the impact of knowledge creation in institutional educative considering the developing ideas as the beginning of process.

Considering that the knowledge creation centres on the building and interchange of tacit and explicit knowledge through their internalisation and externalisation (Nonaka, 1994), this study try to expose the way of creating new knowledge considering institutional tacit—explicit knowledge showing a positive impact in the field.

5. Conclusion

Today, the knowledge management empirical application in all kind of organisations and institutions is the most difficult thing to do. In spite of this situation, the effort to get a positive impact in the society is the most important for educational institutions in Mexico.

The usefulness of knowledge creation is beginning to increase the knowledge, base of what we know now and combine the tacit and explicit knowledge, it gives us a new vision for considering and adequate knowledge application.

Most of the studies confirm the worth of knowledge creation in the organisational success, searching for new ways to survive in their environment and looking with different combinations of paradigms and this research isn't the exception.

Is a reality that the knowledge management research in Mexico still is short, but with the continuous environment changes, this must be the principal activity of organisations and institutions and organisations in Mexico.

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