Implementation process of quality management tools

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Abstract

The aim of the article is to describe the research focused on understanding the relationship between quality management tools and results in the training of students of educational establishments of the city of Manizales. To achieve this objective, a process of qualitative nature was developed with a comprehensive intention in mind, based on hermeneutics: a reading of a phenomenon of the reality of management processes to interpret the logical relationship between quality management tools and results in the formation of students in schools and the impact it has had on education.

The main findings allowed an approach to the main theoretical contributions focused on the implementation process of quality management tools and training of students in educational establishments. However, we found that nationwide investigations are very few and show a significant co-relation between educational standards and discourse. In recent years, these studies emphasize the development plans of the political and administrative authorities, but even these proposals and speeches are not reflected effectively in the social-cultural transformation that the country needs in relation to processes of the quality management system.

Key words: Quality management, hermeneutics, educational regulations.

Introduction

This research focuses on the relationships established between the processes of implementing quality management tools and learning outcomes of students in public and private educational institutions of the city of Manizales. This study is based on the recognition that education is the axis of development of the societies of the twenty-first century and as such requires management with quality approaches that allow the education system to meet the needs, expectations and demands of the environment, achieving complete satisfaction of the communities, but mostly reaching a comprehensive training projection for the new citizens that the country needs. The quality of which we speak is possible by management that energizes, opens doors, routes strategically and puts on stage every educational organization in the social, economic, political and cultural context. Through quality management, educational institutions may be effective, efficient, effective and can sustain, grow and compete in today's world.

To achieve the quality that we are talking about, a clear trend in public and private establishments of initial, primary and secondary education has emerged to implement different models and systems of

quality management, in some cases certified and / or accredited by national and international regulatory bodies. In Colombia, accrediting bodies recognized by the Ministry of Education National (MEN) are ISO 9001, recognized by decision of the MEN No. 4434 of August 8th, 2006. The country's national accreditation body is called ONAC. It is responsible for authorizing and monitoring the certifying entities and making sure that the education certification process is guided by the technical Colombian guide GTC-200[1], among others, which are addressed specifically in the background and theoretical framework.

Following the approach of the research done, there is concern in educational practice and a critical look from the dynamics of education, pedagogy and management and their impact on the education of children that the country and the world require. Quality management processes that are designed, implemented and maintained in educational establishments impact and strengthen the educational system from administrative and managerial perspectives. In turn, we may identify factors to work on in classroom management, including educators, managers and other stakeholders who contribute to the education system to be legitimated.

Therefore, this research reflects on the quality management systems. It also identifies points between the guidelines and policies and management practices at educational institutions and others, which contribute to the redefinition of education based on reflection, to reach new ways of education, aiming at quality management.

There are educational institutions that enhance comprehensive quality management and go beyond the technical approaches and instrumental quality. It is necessary to

rescue them, promote them and project them recognizing their good or bad practices and meaningful experiences that help replicate and integrate them into any of the existing models.

From the foregoing statement, this research attempts to recognize existing relationships between the processes of quality management and results of the process of training students to overcome that gap and achieve comprehensive quality management in a conception that permeates all areas, processes and actors in the educational community.

During the literature, theoretical, conceptual and especially the historical review of precedents of similar investigations or institutional intervention processes to implement quality systems in educational institutions, some approaches and trends were identified that support the need to initiate specific research processes in the area, which would advance knowledge, from the understanding of the realities of the systems of quality management and their relationship to the results of the evaluation of student training. The most representative findings are:

- It is necessary to articulate the quality management system to the Institutional Educational Project, so that its tools facilitate its implementation. Another finding is that the lack of continuity in the process of accompaniment from the Secretary of Education and resource management for certification make educational establishments abandon quality processes and tools and the path is lost.

- Quality certification does not necessarily guarantee the quality of education. It is necessary to consolidate processes of cultural transformation that benefit training. Likewise, rotation of personnel, especially managers and teachers directly affects the maintenance of the quality management system and the ability to

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1   "Technical Guide for the implementation of ISO 9001 in establishment of formal education in pre-school, primary, secondary and non-formal education establishments" (ICONTEC, 2005)

maintain their certification.

• Findings in research at international and local level agree that management tools should be contextualized to institutional dynamics so as to make part of everyday life and the management of institutional education project. Measurement, analysis and continuous improvement processes require ongoing support in educational establishments. It is also necessary to go beyond measuring the quality of training of educational establishments based on the results of external tests, to gain ground in criteria such as relevance. We highlight the performance of graduates in the productive sector or university, the scope of the student profile and the development of the critically reflective ability that must be taken care of and included in the syllabus and the continuous improvement plans of each institution.

As significant background, in Manizales and Municipalities of Caldas, the Catholic University of Manizales (UCM) has been carrying out research, development and continuous training processes in quality management with public and private educational establishments of the city. This experience constitutes the history of the research project, given the need to take a step further in understanding the logic design, implementation, maintenance and continuous improvement of quality management systems as possible commissioning of the Institutional Educational Project. Among them we have: Research "Meanings of Quality Management in Urban Teachers Executives of Educational Institutions of Manizales" by Zuluaga, C. & Rivera. J, Quintero, E. (2011). This research was aimed to understand the meaning that managers and teachers give to quality management of public educational institutions in Manizales. The methodology was framed in the qualitative approach from grounded theory in combination with techniques such as Likert scale is, the focus group and

document review. The most representative results were acceptance and value around quality management subsequent to a critical process of management and educational communities related to management. Other findings show that the concept of quality has changed making an impact on organizational culture, incorporating the cycle of continuous improvement, management and team work.

Another prominent research as a precedent in this study was the Documentary Research on Quality Education in Educational Institutions. It was conducted in 2015 by Durley Bernal Suarez, Mary Luz Martinez Pineda, Angelica Pineda Parra Yulieth, teachers - researchers at the Santo Tomas University. This research had as main objective to establish the state of research on educational quality from articles published in the databases (Dialnet, Doaj, E-journals, Latindex, Rebiun, Collects, Redalyc and Scielo) in the last 10 years. This study was conducted with a qualitative approach. Some of the findings were as follows: the quality of education is a macro concept, taken from government entities, in which it is important to demonstrate quality in educational settings in relation to national and international requirements. In addition, the study highlighted that the quality of education leads to glimpse the purposes of educational institutions in a meso-level, taking into account the quality of teaching and learning processes before the regulating bodies of control and evaluation; and as a last concept, at the micro level, "quality education" stands as one that takes place in the classroom from the curriculum and planning led by the educator with the sole aim to strengthen student's skills and competences, being the educator directly responsible for the resulting quality.

Finally, international research called "Leadership styles and results of the measurement system of the quality of education: an empirical study in basic schools in the city of Arica - Chile" by Padreja Rejas,

Liliana; Rodriguez Ponce, Emilio; Olavarra, Manuel Barreda, Naorez, Omar Sagredo, Leon, Cristian Segocia in 2007. The results suggest that leadership in schools consider that institutional agents and leaders must share the mission and vision with their technical team and teachers, making them implement the objectives established.

Previous studies were very significant for research, identifying that the leadership of educational agents, such as managers of the institutions are very important for the system of quality management in the company of a participatory and committed team, improving the quality of teaching in the classroom. Also these investigations contribute to perform continuous analysis regarding endogenous and exogenous factors that are woven into an institution, placing in context the management tools implemented and how they facilitate or limit the implementation and relationship with internal and external factors.

Methodology

The study was conducted from a qualitative approach with a comprehensive intention, in order to analyze and interpret the logic of relationship between quality management tools and results in the training of college students from a review and interpretation of the legal, regulatory, theoretical, conceptual, strategic framework of the implementation of these tools in approximately three (3) educational establishments of the city of Manizales in the public and private sector. The intent of the research project is framed in the hermeneutic vision of the educational context, characterized for being a philosophical current that seeks to interpret and understand, thereby revealing subjective, psychological realities of human beings. In this sense and as Grodin (2002) states, making reference to Hermeneutics, "the pretention to explain the relationship between fact and context in context.

The claim of the foregoing statement in the framework of the research was to identify and relate trends in the regulatory context, the theoretical and conceptual models that support different management tools of quality, their understanding and implementation in the educational context from perceptions, knowledge, practices and experiences of the various actors involved in this process. In this sense, the operation of the tools of management systems in educational institutions was linked, from the daily actions of the different stakeholders, based on the understanding of the realities and issues within the framework of various theoretical bets, current regulations and relating it to management practices.

The design used was hermeneutic, using qualitative systematic procedures for generating a theory explaining a conceptual level action, interaction or a specific area, whose purpose is to develop theory based on empirical data "(Hernandez et al, 2010, p. 492). In this study, the systematic design was implemented in order to build the categories of analysis from data collected by research.

Stages of research

Descriptive stage

The field of study was established, getting closer to educational realities. Likewise, triangulation of methods of data collection was conducted through in-depth interviews to leaders of the quality management system: directors, coordinators and teachers. The interviews had open questions and were semi-structured. They were recorded in audio, for later typing, classification and analysis. In this phase, review of primary sources, such as documents, records or materials developed by principals, teachers and coordinators regarding the Institutional Educational Project, measurement and analysis of indicators, evidence of institutional assessment and improvement

actions, institutional improvement plans, human talent management, space management and resources, academic training structure, related to the subject matter of the investigation in order to identify the antecedents of the environment, related experiences or situations and operations. Finally, in-depth sessions were conducted with focus groups, in order to validate emerging categories, clarify relevant information and achieve better understanding of the reality of systems of quality management in the educational context.

Interpretative stage

Data was analyzed as part of the systematic design: Open coding, where all segments of the material are reviewed, generating initial categories. Axial coding, where the identified data are grouped, separated and encoded by the researcher, to create links between categories and topics, and build a model of the studied phenomenon (scheme). Selective coding, in which the investigator returns to the units or segments and compares them to substantiate their emerging scheme, which give place to a narrative linking categories and describing the process or phenomenon being studied, using qualitative analysis of mental maps as tools. At this time, categories were consolidated, integrating segments of the same nature, meaning and characteristics, identifying the relationships established between them, in order to facilitate the analysis and interpretation of data.

Category sense making

Categories are identified and relationships between them are established with the purpose of revealing the wires connecting the different categories constructed in the previous stage, allowing the understanding of interviewees' narratives regarding quality management and threads woven into the relationship with results in the training of students at Educational Establishments of Manizales.

This study addressed three (3) public educational establishments in the city of Manizales, which implement the quality management system in their organizations, with quality certification by national or international bodies. In this sense, the search was conducted in databases to identify institutions that meet this requirement:

- 1 Private school with ISO 9001 = San Clemente María Hofbauer school

- 1 Private school with EFQM = Santa Inés school (they also have ISO 9001 Model)

- 1 Public school with Model = Fe y Alegría, la Paz school (Manizales)

From each of these institutions we had the participation of directors, coordinators of the Quality area and teachers, as key educational agents to uncover the relationship between quality management and results of student assessment. This study was carried out taking into account the period 2014 and 2017.

Analysis Unit, the following criteria were taken into account

Quality management model

- Selection of the management model (ISO 9001, EFQM, Fe y Alegría)

- Criteria for the choice of the management model and the relation with the results of training.

- Strategies used for training, design, implementation and certification of the management model.

- General perception of the quality management model implemented and certified and its relationship with institutional academic results.

Institutional planning

- Planning type selected

- Strategies and forms of design and implementation of the type of planning

- Strategies for leadership and teamwork

- Relationship between planning, the purpose of education and institutional horizon

- Dissemination and understanding strategies of institutional horizon

- Compromise with institutional horizon

- Improvement planning of institutional academic results: strategies, activities, tools.

Institutional assessment

- Evidence of development and improvement through the years of implementation of the management model

- Historical results of institutional self-evaluation

- Institutional indicators and goals

- Measurement strategies and analysis of targets and indicators

- Contribution of goals and indicators to institutional improvement

- Types of targets and indicators that enhance results of training

- Assessment strategies of the management model

- Relationship between strategies assessment of the management model and improvement actions

- Strategies for monitoring planning

- Measuring the perception of the educational community

- Analysis of the results of internal and external academic tests.

- Relationship between evaluation and academic improvement of students

Continuous Improvement

- Relationship between evaluation and continuous improvement

- Approach to eliminating the causes of the opportunities for improvement identified

- Improvement actions planned during the implementation of the management model

- Relationship between management model and institutional improvement

- Actions to improve the academic performance of students

- Relationship between continuous improvement and academic outcomes for students

Curricular design

- Logic and rationale for curriculum design

- Strategies for articulation, interdisciplinarity and curricular flexibility

- Strategies for incorporating the results of external and internal testing in curricular design

- Curriculum design competence

- Tools of the management model that affect curricular design

- Relationship between the tools and results of curricular design

- Relationship between curricular design and academic achievement of students

Curricular development

- Strategies for monitoring the effectiveness of curricular design

- Using pedagogical mediations

- Pedagogical model

In this project, new categories emerged, which were classified as those proposed by Creswell, as the possibility of organizing information types.

Finally, plan analysis was performed using an array of information, in order to organize categories, identifying trends. For the matrix, the following criteria were taken ingo account: empirical evidence, categories, trend, observation and analysis:

Findings

In research, we took this phrase as the horizon we were aiming for "*Organizational culture tends to be regarded as a valuable resource that can become a special source of competitive advantage … A significant component of it is the culture of quality "(Anonymous, 2011)*. This product results from days reading sessions and a committed work with educational institutions and participants.

The categories were developed by theoretical triangulation, meaning the review of authors, background and establishing categories of analysis (Alvarez, 2005; Pérez, 2015). The information derived from the first and second stage of the study was analyzed by conceptual categories referring to the quality management system and management tools, as well as the unit of analysis, in this case, educational institutions.

To approach the theoretical and methodological components we bore in mind authors like Kent and Vrie (2000) who identify

five different conceptions of quality, as well as the implications and relationships established in quality, such as education policies. We also took into account the idea of the quality management by Fontalvo (2002). The principles of quality management proposed by the ISO to support the culture of quality, are addressed in the document of management based on processes by Perez (2010). Based on the principles underlying policy and quality management in organizations, Quiñonez (2010), classifies quality models of educational institutions to manage and implement quality culture: Hoshing Planning (Japanese model Management by Policy), PDCA cycle (plan-do-check-act) or PDSA cycle (plan-do-study-act) or PDCA cycle (plan-do-check-act) Shewart/Deming cycle, scatterplot. Quality assessment and other tools are significant to the understanding and analysis of the management system.

As to quality certification models in Colombia, the Ministry of Education recognizes the management models applied by private preschool establishments, in accordance with the provisions of the Decree 529 of 2006 and the resolution 4434 of that same year. The recognition of a model requires: (1) international application (at least in five countries), (2) integration of the concepts of management and quality assurance, (3) mechanisms to ensure the independence of the evaluation, (4) self-assessment that meets the demands required in the Guide 4 of the Ministry of Education to be classified in the regime of regulated freedom and (5) be applied specifically in the educational sector. In this regard, the Ministry of Education, with Resolution No. 4434 of the August 8, 2006, established the conditions for validation of the models for recognizing quality management as a condition for applying the regime of tariff-regulated freedom, and defines the scope of the certification of the quality management system, raising the need to verify that the accrediting bodies of quality for

educational institutions meet certain minimum requirements which include the basics of quality assurance. Taken from resolution No. 4434 of August 8, 2006.

Based on the above, the Ministry of Education, recognizes that the crediting bodies that may endorse an international model for quality management in institutions of education in the country are ISO 9001: 2008, EFQM, NEASC-CIS, AdvancED, Fe y Alegría Model and PCI A Model.

These theoretical bets and the findings identified in this study allow the triangulation of knowledge for the implementation of quality systems in educational institutions. Within this framework of ideas, categories and subcategories were identified, which underpin the need to initiate research processes specific in the area, helping transcend knowledge, from understanding the realities and senses of quality management systems and relationships that are established from the results of the evaluation of student training. Within the findings, 6 major categories are identified in the system of quality management.

Continuous improvement

The need to implement a continuous improvement plan to align training processes towards achieving the proposed goals is recognized. In addition, the need for improvement plans in each management area, depending on the weaknesses of the institution. Continuous improvement plans are part of the principles of quality management proposed by the ISO to support the culture of quality, as stated by Perez (2010, pp. 229-232). For the author, this term is part of recognizing the needs of constantly making improvements, taking into account the details of each process, the intention is to make improvements or arrangements as a fundamental requirement to achieve long-term success,

The evaluation

A key input is considered to design improvement plans and institutional planning. Likewise, the quality management system provides a variety of tools such as: tools for evaluation, checklist of activities divided by process for monitoring them, checklist of indicators divided by result, evaluation guide of the improvement plan, perception logging tools according to the moment. The culture of constant evaluation allows the understanding of management tools and openness to self-assessment and evaluation to identify areas for improvement from different perspectives. In this sense, self-evaluation is valued as an engine for qualifying permanent performance by teachers.

Permanent comprehensive assessment of curricular design

This tendency alienated to internal audit processes is an important process for evaluation and follow-up processes.

Family and community involvement

Involvement of family and community in assessment processes and in all institutional dynamics. The community may have an institutional presence, as an educational institution different from what many others have because they do a lot of social work, then the image of the institution outside is credible in both human and social senses.

Planning

Risk management is recognized as an important planning strategy. As a strategy of design and implementation of improvement plans, a strategic line is generated. It is focused on processes of coexistence and interaction between them and the environment and between academic processes and external test results. Another strategic line are academic

outcomes, as well as other stakeholders, such as parents, the school community, teachers. They become think tanks which organize all components of the educational community. Strategic lines should be designed in a participatory manner.

Improvement teams

Participatory and collaborative work reinforces the ownership of the processes of quality management. Improvement teams become a strategy for joint work in the institution, highlighting the leadership of the Quality Committee and the Academic Council as key for giving feedback and support curricular management from design, assisting in the evaluation and analysis of the process to develop.

To encourage participation of the different levels of the institution in the process of continuous improvement, think tanks are established as a working strategy. These scenarios that help us see the educational

practices of students, family context and other social actors. The strategy of team reflection is covered by the quality management system. Other processes acknowledged in the framework of improvement teams are recognized by the Academic Council as key for feedback and support curricular management from design.

Curricular management

Institutions recognize the need for curriculum planning and management, based on diagnoses, theoretical, normative and contextual trends, as well as needs and expectations.

Another fundamental requirement for curriculum design is consistency between the pedagogical model, training strategies and pedagogical mediation, responding to the needs of the context, the teaching model and institutional guidelines. Curriculum management is carried out based on the guidelines, being executed with the management of area leaders. These curriculum processes are performed from the improvement plan and their validation is done jointly.

Other narratives suggest that curriculum management is a facilitating factor in development process of the institution and also help measure effectiveness of the curriculum in order to verify consistency between planning, execution and actual results. It also measures the traceability of processes and support and monitoring of managers to verify compliance with the proposed goals. It strengthens the academic processes focused on results and the desired impact not only in the training process of the student, but in the context as well.

Integration of the quality management system

This category establishes the possibility of qualification of pedagogical and academic processes. Joint curriculum is a key factor in the processes for thematic development articulated in matters that can be integrated, allowing greater optimization of processes and achieving significant learning. This curricular articulation by students and their parents is important.

Another significant aspect of this category is to integrate the family to encourage school inclusion. Inclusion is perceived as an institutional culture that involves transcending the valuation of the human being exclusively from academic productivity, to accept it as an integral human being who deserves respect, not only by teachers, but also by other fellow classmates.

Curricular flexibility

The flexibility emerges in the formative processes when we make adjustments to the training processes, strategies, mediations and level of achievement according to the possibilities and expectations of young people, which involves training of teachers. An important aspect in this category is the diagnosis or comprehensive characterization of children in special conditions to make

curricular flexibility according to the needs and actual conditions. This characterization is done by means of the SIMAT.

Bilingualism

Bilingualism appears as a trend in schools analyzed from the comprehensiveness of the curriculum and aims to train excellent human beings. This must be coherent with daily work, as outlined by the social partners. Collaborative and team work emerge as strategies for integral curricular design.

Management of the PEI

The design of the PEI starts from the review of the relevance and coherence of the institutional horizon. As operating strategy of institutional processes is the articulation of the PEI with the guidelines of quality.

Another important aspect of this category is the recognition made by teachers and managers of the work with the logic of continuous improvement and quality promotion which allows greater coherence, integration and effectiveness in achieving results. Social actors recognize the following inputs to achieve the implementation of quality processes: First, commitment of each member and collaborative teamwork. Second, a process of knowledge and constant qualification must be made. Third, the teacher must engage in each of the planning processes and improvement plans. Fourth, the constant monitoring of processes. Fifth, a permanent quality advisor, and finally, educational seminars that involve the family and community.

School environment

The school environment is recognized by social actors almost exclusively from the category of coexistence. An important quality criterion is not only external assessment but the decline in cases of difficulties of coexistence in the classroom. Healthy school

environment should give the possibility to enhance learning and achieve better academic results in school performance. In short, the school environment, as a fundamental stage of learning, should evaluate, analyze and empower, being a fundamental prerequisite for doing well at school.

Management of human talent

Ongoing training of human talent appears as a fundamental category to achieve adequate and relevant curriculum planning. This category is highlighted as a requirement to achieve results in the quality management system, which must be strategically led by the directorate of the institution.

To promote quality processes, the qualification of the staff of the institution appears as an important factor. As part of this category, the practice of talent selection is a process of quality management that defines profiles and facilitates curriculum management. Other components are the assessment or continuous monitoring of the work of teachers to ensure quality in the training process. Finally, the strategy teachers supporting each other in the induction process in the institution is a strategy for managing human talent.

Conclusions

Quality management systems and the relationship with the evaluation results, becomes a necessity for educational institutions and, in turn, big challenges for institutional actors, makers of public policy and the entire educational community involved in this process, thereby, influencing the formulation of new guidelines for the Ministry of Education. The path proposed is research, as thoughtful way that continuously redefine the sense towards which education in Colombia is oriented and implemented. In that sense, the problems and / or realities weaved and set from the education influence social and cultural aspects of the development of a country, strengthening or affecting the human condition.

Therefore, in this investigation, we make conclusions based on categories and identified trends that allow readings of educational realities within the framework of quality management and the relationship established. Some of them are presented:

- The directive, administrative, academic and community management go hand in hand with quality management, within the guidelines established by the Ministry of Education. This is why what it is necessary to enhance teamwork, promoting leadership of each person involved in the construction of knowledge.

- Bearing in mind the above conclusion, it is necessary to create opportunities for constructive dialogue, making readings of the facts established in the educational establishment, the relationships woven with students, the knowledge we have of it, and their family environments, teaching practices and knowledge of institutional guidelines. These are issues of interest of a whole educational community to discuss within reflective groups.

- Both internal and external audits conducted in educational institutions become a necessity and constant challenge for the educational community. Since the audit can reflect the processes taking place, allowing feedback, conducting situational assessments or updating them, and the performance improvement strategies that help in the process of quality management.

- Institutional planning is also important to note because it allows generating horizons to optimize the processes developed and implemented. This planning should be put into action in obedience to the demands made by the system of quality management.

- Measuring the quality of education is a category that you must highlight, because it identifies the processes developed by the institution, giving them organization, encouraging planning based on process improvement, among other processes. This contributes to the identification of the results and the impact generated.

- It is imperative that the processes carried out in relation to the quality system with institutional projects, from a theoretical and practical coherence should be articulated in order to identify powering factors to enhance projects with quality systems and thus make improvement plans to better performance.

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