

# La teoría social de Niklas Luhmann como metodología de diagnóstico

*The social theory of Niklas Luhmann as a Diagnosis Methodology*

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## Resumen

Este artículo es resultado de la investigación realizada sobre modelos educativos de nivel superior. El objetivo de la investigación fue “Identificar y proponer las características fundamentales que deben formar las bases de un Modelo de Educación Superior del siglo XXI, particularmente el Modelo Educativo de la Universidad Mexiquense del Bicentenario del Estado de México”. En el estudio diagnóstico se aplicaron nueve categorías de la Teoría Social de Niklas Luhmann en cinco campus denominados “Unidad de Estudio Superiores” de un total de veintinueve que conforman la Universidad Mexiquense del Bicentenario, a través de una encuesta y entrevistas, teniendo como informantes a alumnos, docentes y coordinadores de unidades de estudios superiores de la Universidad. Con la aplicación de la Teoría Social de Niklas Luhmann (1992) como metodología a este sistema educativo, se observó que es posible tener un diagnóstico de la Universidad.

**Palabras clave:** Sistemas sociales, Educación Universitaria, Metodología, Modelo educativo.

## Abstract

This article is the result of research carried out on Higher Education models. The objective of the research was to "Identify and propose the essential features that should form the Basis for a Model of Higher Education in the 21st century, particularly the Educational Model of the University of Mexico State of the Bicentennial of Mexico State". In the diagnostic study nine categories of the Social theory of Niklas Luhmann were applied in five campus called "Higher Studio Unit" out of a total of twenty-nine that integrate the University of Mexico State of the Bicentenary, through a survey and interviews, having as informants students, teachers, and

coordinators of units for higher studies in the University. With the implementation of the Social theory of Niklas Luhmann (1992) as a methodology to this educational system, it was observed that it is possible to have a diagnosis of the University.

**Key words:** Social systems, college education, methodology, educational model.

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## Introduction

To analyze an educational system from today's perspective it is necessary to observe that this belongs to a social system. The validity at present of this diagnosis is based on the analysis of the social system called "University of Mexico State of the Bicentenary", applying nine categories of the theoretical Social of Niklas Luhmann, which enabled to discern problems within the University.

The diagnosis carried out confronted the vision and mission of the University of Mexico State of the Bicentennial of Mexico State with the reality that is lived in five study units visited and investigated as a sample. The result of the research served to propose actions that correct and are the foundations of a model of higher education that is consistent with the current needs of the society. To do this, also presents the results obtained from academic research and on the field investigations in 2012 and 2013.

Methodology Research conducted under the title "Basis for a Model of Higher Education in the 21st century, case study: University of Mexico State of the Bicentenary", discusses the impact of globalization on education, taking into account that the current higher education has shortcomings that needed to identify and address.

The particular purpose of the investigation concerned as:

Gather the information of the events and the context of the creation of the model for the University of Mexico State of the Bicentenary since its conception, to identify the social, cultural, economic and political characterization that exists in the University; as well as contribute to its reconstruction through December 2013, through the application of techniques of qualitative and quantitative nature

The focus of the research that was used was mixed -qualitative and quantitative (Hernández Samperi, Fernandez Collado, & Baptista Lucio, *Research Methodology*, 2003, p. 21). From the quantitative focus as a substantial part of the research work, some techniques and statistical methods were used, descriptive statistics on the quantification of the results of questionnaires applied to graduates. Applied qualitative approach which is characterized by being hermeneutic-interpretative, the study method case study was used, supported by:

A). Review and documentary analysis of::

- Official documentation for the University of Mexico State of the Bicentenary texts.
- Theoretical positions on the issue, review articles, books on social theory and higher education.
- Interpretation of information relevant to the case

B). Empirical information captured through interviews:

- Licensed Students, alumni, teachers and authorities.
- Rector of the Universidad del Bicentenario Mexico State.
- Key Players<sup>1</sup>, and informants quality.
- Attendance at group discussions on the issue from a theoretical point of view.

The theoretical basis of the research problem was approached from the perspective of social theory, based on the proposal made by Niklas Luhmann (Corsi, Esposito, & Baraldi, 2006), The

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<sup>1</sup> These are the people who most often seen, question, request written information or documents are required. With them the bulk of empirical information that allows the researcher to understand the problem and make appropriate interpretations is obtained. Key informants are people who have access to the most important information on the activities of a community group or educational institution; with sufficient experience and knowledge on the topic addressed in research; ability to communicate that knowledge and, more importantly, a spirit of cooperation.

categories addressed in the research were: Environment / System Sense, Differentiation, Time, Self-reference, Communication / Language, Autopoiesis and structural coupling.

Interview technique, which was applied to three units of senior coordinators study Bicentennial Mexico State University to identify whether there on academic self-reference model used in qualitative analysis.

Data from informants who participated in the creation and operation of the Bicentennial Mexico State University to identify the history and way of thinking of them at the time of its creation were obtained.

We contacted teachers from three units of study and interview the educational model quality indicators were identified: average number of students per address, salaries average hourly, type of contract, refresher courses conducted in the school year and subject they teach, receive extra bonuses, if they have meetings academia and in what time, if you have certifications institutions branch of activity, if involved titling and / or preparation of thesis.

He talked with students of the units of higher learning Temoaya and Tejupilco in semistructured interview, identifying the reasons for studying in the institution, the deficiencies in the system, identifying their sociocultural status, contributions of the educational model to life minors and if you are attached to the labor market.

30 graduates of the units of higher study Lerma, Tenango del Valle and Ixtlahuaca survey was conducted (the identity was not called for his answer was more objective), identifying the reasons why they studied in the institution, the deficiencies found in the system, their socio-cultural status, educational model contributions to the lives of young people, time employment upon graduation, means used to find employment, first job obtained after completing their studies, income earned in their first job, level of job satisfaction, if you are unemployed and what the reasons are. Could check the amount of them that have been inserted in the labor market and through what mediation process have come to get a job after graduation from university.

We interviewed staff working in the area of linking to identify areas of opportunity that has been made in the educational model also if college has links -empresa- service sector, and whether the dual model operates in practice.

## **Development**

### **Pose society theory Niklas Luhmann (1927-1998)**

Niklas Luhmann was professor of sociology at the University of Bielefeld, Germany. His work involves the development of a theory with pretensions to universality and your application demands for social phenomenon. The resulting theory provides a conceptual variety that allows to account for social phenomena in a new way, which facilitates interdisciplinary dialogue to include elements of other areas of knowledge, such as cybernetics, biology or mathematics, to name a few. Luhmann takes the critique of functionalism and Parsons' theory, but from a totally different perspective. Luhmann considers it possible to build a theoretical framework, able to question the role of the construction of a given system. This function consists in understanding and reducing complexity. The complexity, in Luhmann's perspective is not seen as an obstacle or a difficulty to build a system (Arriaga Álvarez, 2003, pp. 277, 278).

A system arises in the process of reducing complexity. It is less complex than their environment and limits on it are not physical but meaningless. The problem of extreme complexity of the world, who had led the sociology desist try making universal theories, becomes, therefore, the condition that makes this possible and fruitful theoretical attempt (Arriaga Álvarez, 2003, p. 278).

The higher education system is a social system that guides students in a process of bringing knowledge, is formed by systems, inputs are human beings with certain skills, abilities, knowledge that by entering this transform, resulting humans with desirable characteristics and that are integrated as elements of a social system, the theory of Niklas Luhmann. Note that this abstraction of reality is a result of multirrefencialidad realities, and that his intention is to guide stakeholders to develop the potential of students with expertise in teaching processes so as to achieve its objectives.

Reducing the complexity means selecting a field based possibilities to determine how much complex structures can be created. Therefore, the abstraction of this analysis used the categories of Social Theory of Niklas Luhmann, which led to a revision of the Bicentennial Mexico State University, contrasting with the vision and mission with the intention to propose actions to increase the competitiveness of this university located in the State of Mexico.

To make the diagnosis was analyzed in each of the categories of Luhmann's theory of meaning and scope. That way you identify if the social system being analyzed fulfilled or not with them, later issues were organized to consider in each category; Here are some points considered by category are presented and then the hub picture of the results is presented. It should be noted that in this paper provides the results are presented in a general way; however, extensive research, they have all the details.

In the category "Environment" the context of the Mexico State University Bicentennial considering his decree creating the shape of operation and external bodies that influence was analyzed, identifying belonging to a larger social system, called State Government, legally an Undertaking Public Decentralized where decisions mostly have to be consensual by external authorities.

In the "System" can not be oblivious to the surroundings, because the system is formed of all the activities taking place within the university, considering that exist within this system other systems, such as: school control, administrative control, faculty and students; interaction of these meshing operation.

Also, within the category of "Sense" according to the Social Theory of Niklas Luhmann, the meaning is the medium that allows selective creation of all social and psychological ways. The sense has a specific shape, whose two sides are also reality and possibility or actuality and potentiality. The sense is its own evolutionary conquest of social systems and psychic systems: it allows to shape the Self-reference and the construction of the complexity of such systems (Corsi, et al, 2006, p 199.)

Since its inception, the meaning of the Bicentennial Mexico State University in its mission is:

... Train graduates with quality in undergraduate and graduate levels; possessing skills, an entrepreneurial spirit and a vocation of social transformation; to achieve their insertion in the public, productive, social and research sectors, so that their actions contribute to solving problems and meeting regional, state and national needs. "Their vision is" To be the Institution of Higher Education State of Mexico recognized by the academic excellence of its graduates, based on three aspects: Accredited Educational Programs and Process Certificates; High-level Research and Strategic Innovation and Development Alliances. (Bicentennial, 2013).

After identifying the meaning of the University in its mission and vision in the field study performed actions mentioned were identified in the mission and vision that does not actually exist within the social system, there is no research structure, research is very early, processes and educational programs are not certified and are even outdated.

In the category of "differentiation" we tried to identify what is the university that makes it different from other educational systems in your environment. Differentiating the Bicentennial Mexico State University does with other institutions (systems in your environment), several, we can consider first is a newly established institution where their characteristics are not imposed educational models of federal court. Search differentiate technological, polytechnic and intercultural universities, for his portrayal of having spaces in various regions of the state. It is proposed that research be suitable way to increase differentiation, for this the definition of research areas is required: we must find niches, develop a well-defined program that includes social and economic vision, depending on the region.

The same model, the category "Time" is defined from the Theory of Society of Niklas Luhmann, such as observation of reality based on the difference between past and future. (Corsi, et al., 2006, p. 212).

The study noted that only recently the creation of the Bicentennial Mexico State University in 2009; however, this was established by Extension Units of Technology for Advanced Studies that were created in the year 2006. At that time, the purpose was to solve the problem of attention to

the demand of students in locations where higher education is not was accessible by the wide geographical dispersion of the population and in sparsely populated.

With the creation of the Bicentennial Mexico State University in 2009, 22 units extension of the Technology of Advanced Studies that existed in the entity is absorbed, thereby another set of possibilities is generated, such as obtaining budget for construction of buildings and infrastructure necessary. Now in 2013, the chances of this university are others, like looking towards certification racing, plans and programs of study. In this category we observed the progress that has taken the university since its inception.

In the category of "Self-reference" the fact that systems are updated and refer to themselves by each of its operations indicated. It is (organic, psychological and social) systems that can observe reality through self contact. The self-referential systems constituted so are able to distinguish between what is proper system (operations) and which he attributes to the environment. The self-reference makes updating through the system structures, not the environment. In the case of social systems must basal self-reference in that communications have no other reference only own communications system and based on these references allows autopoiesis. (Corsi, et al., 2006, p. 44).

In the study it was observed that the integration of teachers in the educational process coordinated allows self-reference, which is accomplished through schools, communicating, interacting to achieve the intellectual growth of participants: internal academies Units Study and in the region. This creates better coordinated policies work, and the interview notes that teachers do make autorreferenciación; even say that they have tried to make in the region with the other units of study; however, lack leadership for this.

Students to join teams manage the exchange of knowledge and mental processes with interpersonal communication, allowing the reflectivity is achieved by interacting. This can be seen based on the distinction of before / after. The reflectivity is the effort of selectivity by applying and analyzing the process itself; well, learning to learn rather than referring to learning object directly refers to the process itself where the student reflects on the thinking before and



after the process performed. The reflection creates a type of self-reference. We can also make other types of self-reference when the student interacts with itself and can distinguish itself from the external one, ie its environment. A reflection own self-referencing can be achieved with autobiographies and self-identification of skills and competencies is presented (Corsi, et al., 2006, p. 46).

Individual study allows the psychic systems (thought the student) may benefit the institutional process itself but also personal level. The autorreferenciación is very efficient in the student for obtaining and deep knowledge creation, if they are guided by theoretical and methodological materials, which is achieved through the topics of materials. In this sense, according to interviews with teachers, it can be seen that the plans and programs of study have outdated issues where the teacher takes their efforts to provide the class with current issues. In the words of the interviewees: "I check the class schedule and if it is outdated as propose topics that deal with today; however, the official program is not updated, because there is no official update mechanism in the University".

The revision of content in curricula and its comparison with reality can generate a self-reference, as are projects companies in the region, based on job skills with innovative content to meet the needs of the region content, creating a commission to generate the programs according to topics. It is therefore necessary to include own lines of research.

Communication: Communication in social systems culminates after send and receive messages with compression of action, we can consider two types of communication: what is done individually, which defines the unit of the social system and communication between systems social. Both allow the autopoiesis (Corsi, et al., 2006, p. 59).

Teacher-student, student-student: For our case study how communication between observed. As a first type of communication, it was found through questionnaires and discussion with students that language is common and there is full understanding between students and teachers. Furthermore, when analyzing the second type of communication that Luhmann referred to as communication between systems in the field study communication problems between students

and school control systems were identified; apparently no precise terms, which are managed centrally and on campuses complexity increases considering it is a university with 29 campuses distributed in various municipalities of the state; Also, communication between the coordinators of Higher Learning Units with administrative control systems problems of interpretation of terms were also identified.

In the category of "structural coupling" the relationship between system and environment budgets to be submitted for it to continue in its own autopoiesis is presented. All system adapts to its environment; if not it could not exist. (Corsi, et al., 2006, p 22).

In the case of Mexico State University Bicentennial, structural coupling correspond to stick to Systems International and National Certification, this will allow the certification of plans and curricula through the Council for Accreditation of Higher Education, AC (COPAES , 2013) and the Institutional Committees for the Evaluation of Higher Education (CIIES, 2008). These institutions at first norman policies plans and curricula, their autopoiesis and at the same time, the possibility of obtaining resources offered by international agencies have certifications.

Autopoiesis: The theory of social systems adopts the concept of autopoiesis developed by the Chilean biologist Humberto Maturana, trying to give a definition to the organization of living organisms (Maturana and Varela, 1995, p. 106). Luhmann makes adopts these terms, which considers autopoiesis through the psychic system and social system. The autopoiesis to Luhmann is the result of the autorreferenciación, communication and differentiation; if these three categories of Social Theory Luhmann are met can consider that there is a autopoiesis (Corsi, et al., 2006, p. 39).

The autopoiesis of Mexico State University Bicentennial was analyzed in the categories of differentiation, autorreferenciación and communication; Additional research exchanges were a parameter to measure the degree of interaction with the environment. These allow both teachers and students and the rest of the educational community, academic exchange experiences between institutions of similar level.

So far we have done a brief description of the way of work done in the investigation. Some of the results are presented in Table I. Assessment Model Bicentennial Mexico State University in the position of Niklas Luhmann, showing the problems detected and suggestions for action.

**Table I. Assessment Model Bicentennial Mexico State University under the posture of Niklas Luhmann**

Categories	Problems detected	Proposals for action
System / Environment	The decree of creation identifies it as a public agency, where no autopoiesis is allowed. Therefore, the directors are nominated by a political, not an academic stay.	Search University autonomy in order that she can make decisions according to their social and cultural reality. Otherwise, no own development.
Sense	At present there is no formal structure of research within the Bicentennial Mexico State University.	The proposal is directed towards a structure attached to the units of study that allows the realization of research and departmental organization.
Differentiation	It is a university-ups where their mode of operation and structure are not similar to those of other decentralized agencies Currently, the university is distinguished by its structure, has 29 units of study and is very close with little development.	To differentiate the University is required to enter the research development, coupled with linking companies and institutions, enabling the development of learning.

**Table I. Assessment Model Mexiquense Bicentennial University  
under the posture Niklas Luhmann**

Categories	Problems detected	Proposals for action
Time	The temporality in which the university has evolved initially corresponds with the creation of extension units Technology for Advanced Studies, which plans and programs of study are consistent with a technology system and not that of a university. Following this is the creation of the Mexico State University increased organizational and administrative infrastructure, however, has not been updated academic development.	The University in 2013 had new opportunities, including the growth of enrollment for having educational spaces, the organization of the institution by the Rectory allowing coordination units, and migration to more established educational models and the Departmental model.
Autorreferencia Institucional	Self-reference is made in the University with the academies of teachers in each unit; but these may not be as deep as subject areas are different in each unit of study.	Stratification is proposed disciplinary areas in each unit of study and regions in order to have teachers who specialize in a subject area.
Comunicación	The analysis shows that communication between teachers and students is correct; however, there is a communication barrier between the central University and school systems and administrative control in the units of higher education.	It is recommended to identify clear communication rules through well-defined structures, and common communication language, staff meetings studio units with personnel from the central areas, in order to perform more in line with social realities plannings.

**Tabla I. Assessment Model Mexiquense Bicentennial University  
under the posture Niklas Luhmann**

Categorías	Problems detected	Proposals for action
Autopoiesis	The decree creating the Mexico State University Bicentennial indicates that this has to do research, but once the field study shows that the organizational structure of the university does not allow this process by organizational structure that has . Its administrative and teaching structure is very small, seeking to optimize resources; however, is not conducive to the generation of research.	The proposal in relation to research, is to invest in resources, plazas or incentives are created for teachers within the unit of study undertaken research activities and applies the disciplines,
Structural coupling	The recent creation of the Bicentennial Mexico State University has not permitted the manner suggested by international standards of accreditation and evaluation of national and international institutions like COPAES And CIIES.	The proposed structural coupling through the certification of accreditation bodies in the sense that the university meets the criteria and parameters of quality, and that programs have social relevance. Have the mechanisms in place to ensure the quality of education through the diagnostic evaluation and accreditation.

## Conclusions

This paper presents the results of diagnostic research conducted at Mexico State University Bicentennial social system, where the Social Theory of Niklas Luhmann was applied. The result shows the status of reality in time that exercise was conducted, we can not generalize, or indicate that they are all advantages and existing problems; however, it has been tested on the one hand that the social theory of Niklas Luhmann serves as a methodology for analyzing a social system, in this case an educational model. The experience gained from this research exercise is that the

application of social theory is not timely; the process should be continuous and regular to allow continuous improvement in educational systems.

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