

## A Study of Education in Mexico

### Issues and Challenges in the Economic, Political and Social Trends

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#### **Abstract**

With this approach, establishing as axes of analysis: The governance of education, higher education policy, science and technology, the proposed institution of higher education, science and technology of the future, knowledge generation and innovation, linking, finance and comprehensive assessment the educational process. Finally, a prospective of the remaining tasks of higher education in Mexico will be discussed. It assumes a critical analysis of the scope of the functions of the new model under the Integrated Environmental Strategies, IES and a focus on market requirements, underestimating the social needs of the Mexican state.

**Keywords:** Higher education, Mexico, Educational policy, Educational foresight

## 1. The environment

The so-called information society and knowledge is a consequence of globalization processes many similarities in trends in higher education globally, such as the universalization of higher education which is expressed in a variety of supply options with different educational plans and curricula. Changing the contents of plans and programs of study should enable HEIs graduates more opportunities in entering the labor market, considering the requirements of specialization given the scientific and technological advances on the one hand, and the transformation. The transformation of the contents of plans and programs of study implies a revision of the principles of educational philosophy and the redesign of academic models and institutional organization, the new grid exit profiles, instructional strategies capable of promoting trans-disciplinarily and complexity of scientific and technological phenomena.

Besides the companies generate and transmit information and knowledge, those who join the knowledge economy, record, market, import, export and apply knowledge by eliminating the traditional barriers between manufacturing and services. These knowledge-based economies are more competitive because of the added value offered by the systems of research and scientific and technological innovation.

However, rapid scientific advances, especially those in information technology and communications coupled with the increasing economic globalization processes, they need to review and reconsider these assumptions as a requirement of a state policy on public higher education, science and technology, a structural perspective and long-term, if one wants to answer the growing demands of Mexican society of the XXI Century. The evolving role of the state involves re-engineering processes to design new roles in education, research and technological development. The Mexican state should continue to keep the active regulation of the IES by strengthening market mechanisms and the promotion of linking the company to stimulate academic and scientific output.

However, the role played by different actors in the regulation, operation and coordination of higher education systems require changes in the structures, processes and behavior, so as to facilitate the implementation of strategies in the external environment. The strategies of institutional transformation of higher education shall be agreed between the main actors and interest groups.

Herrera (2002) explained that the urgency of institutional transformation in higher education lies in the convergence of forces such as the international trend determined by the impact of globalization and scientific-technological revolution of the late twentieth century, the approach national education policies that are very receptive to the recommendations of multilateral agencies seeking process, in most cases which cause reforms leading to improved quality, coverage and relevance within the traditional, disciplinary, bureaucratic and hierarchical in our country.

Institutional change will bring about change in the paradigm of the educational model in a way which involves the questioning of the societal model in which it is based and leading

universities to other ways of thinking, organizing, producing and transmitting knowledge (Lanz, 2003).

The future of Mexican generations already predetermined by a set of neoliberal policies under a vision of global integration processes.

The scene of the most viable economic component is the trend to continue at current levels of uncertainty, crisis and possible economic growth rates moderate. With respect to labor market and employment, provides an accelerated growth of the services sector with a higher population in this segment, and lower growth of industrial and primary sectors. The trend towards outsourcing of the economy as a company focused on information and knowledge will impact on the profiles of professional scientific and technological training. Economic changes in the global scenario has serious repercussions on the labor market and changes in this frontier. The environmental changes are pushing for the transformation of higher education system.

ANUIES (1999) made the diagnosis of the problems of higher education in Mexico in a prospective for 2020 with a proposal for immediate action to boost higher education system. In terms of national and regional development and the role of government, the scenario of 2020 is a model for consultation and coordination with a flexible and decentralized state system of innovation and interaction between firms, markets, governments and universities.

Governments must continue to ensure compliance of the right to higher education and taking responsibility for its financing. The scenario of the political system that is expected to be capable of democratic governance and a broad social policy systematically considers the size of the economic and social inequality in Mexico. Inequality in access to higher education is still a case pending, especially in the territorial distribution of higher education opportunities. You have to make substantial progress regarding the new responsibilities in education and research in the state and individuals in the transformation of higher education.

In the demographic component, CONAPO projections indicate that population growth will diminish over the next five decades: by 2010 the population would range from 111.3 million inhabitants and 116; for 2020 at 119.7 to 130.5, for 2030 of 124.4 to 142.2 and for 2050 from 122 to 152.2 (p. 15). The applicant population growth of higher education, from 15 to 64, increases to reach 80.8 million by 2031 and then dropped gradually. For the specific age group of higher education (16 to 22 years) is projected to grow until 2010 to fall from 2025, which implies that we should meet with the creation of new universities. The population dynamics underpinning the challenge of covering higher education hinders the improvement of quality.

## **2. Governance in education**

The form of government should be focused on solving the problems of its substantive, institutional needs to generate and develop scientific and technological knowledge as their main *raison d'être*, or mission, available resources. HEIs governments should encourage democratic mechanisms for consultation aimed at combining efforts on substantive tasks, establish government standards and requirements for access. The strengthening of the democratic life of the IES should begin by strengthening the forms of government guided by the collegiate governing bodies, academic and research activities, funding, etc.

The creation of forms of government and organization of HEIs while focusing on economic efficiency, more effectively in social development will remain a major challenge especially because new strategies are required for the generation and application of knowledge when changing the paradigms of scientific and technological higher education. New forms of government and legislation of the IES must be consistent with the challenges of economic globalization processes and the revolution in information technology and communications.

Also, decision-making processes must be open to more democratic processes, by strengthening flatter structures, use of information and communication technologies on end and behavior subject to processes of transparency and accountability. The diversification of institutional structures is manifested in a variety of organizational forms to provide care through programs and curricula to the needs of education, science and technology. The decision-making processes should be transparent, providing horizontal and inclusive openness to all stakeholders, but especially teachers, researchers and students, the main players in the processes of teaching and learning.

The opening must allow new ways of choosing the government of the IES, in such a way that promotes greater participation in all academic and scientific community. It proposes the creation of spaces for the academic exercise of democracy under the principle of equal relationship-academic students (teachers and researchers) - management-government.

The search for alternatives leads to the construction of innovative new educational spaces that allow the open expression, flexible, interdisciplinary and self-regulated academic life of the multiplicity of actors. The autonomy of universities from a wide variety of institutions of higher education, science and technology make relationships more meaningful inter-institutional coordination to exploit comparative advantages and areas of excellence for sharing resources, joint efforts and programs through strategic alliances.

Advances in strategic alliances and international agency programs to complement the infrastructure for teaching, research and graduate, so that it allows for greater student and academic mobility of teachers and researchers. Academic life must be sustained in horizontal relationships with the administrative part. In the future there should be more concerned because the forms of governance of HEIs, their structures are representative of the main actors in the process of teaching and learning, research and general involvement in the decision-making processes of the major beneficiaries of community, business and civil society.

The creation and maintenance of state networks, regional, national and international help to make more efficient use of resources to provide innovative educational services of high quality, coverage and relevance. The quality of education is understood in a multidimensional way to understand the quality of teaching, management, academic programs, students, etc.. The National Development Plan (2006-2012) meant by quality of the education system, a multidimensional variable that combines access, equity, relevance and educational outcomes', the plan sets out strategies for cross-sectoral and strengthen the processes of learning assessment, teacher performance and school management.

Substantially improve the quality of higher education basing themselves on the improvement of graduate teachers, and in exercise of the National Assessment and Accreditation. It is intended that by 2020 the system is consolidated national planning and evaluation, accreditation and quality assurance in higher education.

### **3. The politics of higher education, science and technology**

Educational institutions have different responses to change within an institutional context in terms of their capacity to process national education policies, partly due to the articulation of different actors and interest groups involved in institutional design with different visions.

The lines of education policy have a tendency to continuity and deepening of the National Development Plan (NDP) 2007-2012, which proposes an education based on educational change, with little input to overcome the limitations of the national education system ( Observatorio Ciudadano de la Educación, 2007b) under the concept of human development, the NDP aims to secure the Mexican meeting the education needs (NDP 200-2012:23) and recognized as a proposal for Project Mexico 2030, achieve a quality education with value formation and capabilities. The promotion of sustainable human development is guided by a focus on improving education and training as essential elements.

The processes of institutional transformation of higher education in Mexico involving powerful interest groups at local and federal governments in the formulation and implementation of strategies, as has been shown that each institution is a different case.

The government plans set attempting to change the higher education system have different characteristics of implementation, considering the willingness of the actors and autonomy of public and private institutions. One of the main trends in higher education systems is the quantitative expansion to allow access to all social groups in the regions. In the near future, the Mexican educational system must end the gulfs of inequality in the geographical distribution.

Expand the options available to the inhabitants of certain areas, whether you want to benefit the largely rural and indigenous people. The transformation of education is one of the challenges of equal opportunities in program development proposal of the NDP (2006-2012). The priorities are outlined in the general expansion of system to ensure educational opportunities for all people, removing economic exclusion, to computerize the national educational system, coordinate and decentralize and support for teaching through resources and training (Observatorio Ciudadano de la Education, 2007: 34).

Strategies for Education are located on the axes of the competitive economy and generate employment, equal opportunities and environmental sustainability. In the line of "high productivity growth, the policies suggested linking education and scientific and technological development with productivity, which paid little progress to increase as they have been limited investment by both the public and the private. In the last six years (2000-2006) was decreasing trend in the proportion of expenditure and GDP for the development of research and technology.

So far, the contributions of private initiative have been irrelevant, if compared with other countries where heavy contributions made by the main beneficiaries of research in science and technology. The private higher education must remain flexible to adapt to future conditions of changes in governance among regulatory agencies in the markets - the company - and three levels of government. The role of IES historically claimed to be the cultural bulwark in modern societies is becoming one more of the education service providers to serve the laws of the free market.

In the private sector are contained Higher education institutions serving elite students from high income levels and high levels of academic quality on one hand and on the other, those universities that receive surplus unmet demand, which do not necessarily reach the average quality of the IES and which are also characterized by modest tuition fees. Perhaps the most important step which should give private education is to achieve territorial decentralization to increase its responsiveness to communities, villages and municipalities. The strong market orientations sebe not be cause for neglect of activities that investment by sources in its structure, not an immediate return (Altbch, 2002).

Among the assumptions of public higher education in Mexico, it is assumed as one of the state's social commitments with the characteristics of free, universal and secular. It is the responsibility of Mexican society demand that the State fulfills its functions to a viable long-term dimension, the higher education project to promote and achieve the conclusion of all efforts in a comprehensive and inclusive agreement of all sectors social.

The Mexican state will continue to ensure effective and making the social right of access to public education to all citizens who choose to continue on some of the institutions of higher education, science and technology, either public or private.

The social projection of present and future development of the IES should be guided by educational policies more consistent with the responsibilities arising from the economic reality and social policy of our people, ie educational policy with a full orientation of social policy. The XXI century Mexican society deposits in the institutions promoting knowledge certain responsibilities and expectations to which higher education institutions (HEIs), universities and technology can not support others (Casanova Cardiel, 2007:36)

To achieve this, in the coming years, envisions a national project of structural reform of higher education, science and technology, who led the state with strong involvement of social and productive sectors. This project should be able to propel a new future national development model, able to consider the asymmetries and inequalities that exist in different economic, social and cultural rights which provide higher education, science and technology.

Achieving greater equity in income distribution in a country like Mexico where there is great inequality of income, represents a challenge that is related to economic growth and therefore the growth of educational provision to extend coverage opportunities. The national education project should ensure educational equity through mechanisms designed for educational federalism, but also must balance the equity with the involvement of school culture to the cultures of communities so as to strengthen intercultural education. The promotion of

educational equity is to address target populations through the implementation of social policy cross-cutting strategies to support those most in need (Observatorio Ciudadano de la Educación, 2007).

The new education project is closely linked to the project of nation we want for Mexico. The new education project should be the result of a government policy sustained in the quality and competitiveness of the Mexican education system

The politics of higher education, science and technology needs to be made comprehensive and coordinated manner to have a reference point and aim the improvement of national education. A State policy on higher education, science and technology should promote the modernization of the institutions responsible for providing this service and strengthening the quality, transparency, accountability.

The policies of higher education, science and technology should be set with the aim of substantially increasing the coverage of higher education open to a broader scope of care that exceeds 50% of the total youth population in such a way as to make more reality one of the great principles of the Mexican state. This is feasible considering the population window of opportunity due to the trend in low birth already present in the last decade.

#### **4. Draft Institution of Higher Education, science and technology to future**

The institutional design of the IES of the future will be recorded in a framework of structures, processes and behaviors that will result from the pressures of complex and uncertain environmental trends and the strength of their skills, resources and capacities. On the epistemological level, the institutional design of the IES will be discussed between the philosophies utilitarian, individualistic and competitive at one end and social philosophies that focus on the ways supportive of the goals that involve substantial commitments of collaboration between different actors involved in knowledge generation.

The IES must be a university or a technologist with a project that goes beyond out into all areas of human development. The institutional complexity of the national education system is expressed in respect for the autonomy of universities makes it difficult to agreements to supplement resources.

Therefore, it requires institutional reform and consolidation on a framework that facilitates coordination and complementation rational and equitable use of resources and efforts of institutions of higher education, science and technology to achieve higher levels of development that meets the profiles regional. The discussion will focus on designing a model-oriented university more utilitarian sense of teaching and research in the design of a university model with a utopian project of democratic emancipation.

The IES implement programs for improvement in the quantity and quality of its infrastructure, environmental conditions and academic programs, with a parallel drive to stock assessment indicators. The criteria of quality, certification and accreditation of academic programs will be established by consolidated academic bodies in institutions of higher education, science and

technology. The academic quality of programs of higher education, science and technology, is the condition to increase the certification processes and to guide the quantitative growth.

Institutional transformation has to further innovations in the academic model that takes into account the emergence of processes of economic globalization, scientific and technological changes are more advanced in the different areas of knowledge, the advancement of communication technologies and information.

The ANUIES (1999) recommends following the strategies of planning and coordination to ensure the integration of higher education system. In 2020, the IES of Mexico will form a higher education system able to train professionals and senior researchers, generate and apply knowledge, expand and preserve culture. All these tasks are performed with quality, relevance, equity and amount comparable to international standards.

The strategies to implement institutional change in higher education should consider the many variables involved. Among the variables involved are highlighted in national educational policies and the maturity and bargaining power of institutional actors.

## **5. Knowledge generation and innovation**

The training model that today remains fragmented in their fields of scientific and technological knowledge, in the coming years will aim to be more holistic, more human, more complete, more multidimensional and above with a holistic vision. The different stakeholders of the educational process in the future must be able to generate knowledge and innovate with a more holistic approach to training that play as a basic condition for promoting interdependent development of our peoples. These actors should promote and strengthen communication networks and international scientific and technological diffusion.

The training of the future should focus more attention on teaching the totals. Vocational training to become a promoter of human values but to discourage selfish individualism, which encourages respect for life in society, without neglecting the social solidarity, the preservation of nature and the environment.

The educational model must recognize the centrality of the student and the recognition of individual differences in learning processes and with the support of teachers to organize and share their experiences through academic processes. Achieve the consolidation of academic bodies and areas of knowledge consolidated and made academic innovation activities of generation, and application of knowledge to solve the problems of economic and social environment.

The learning system of the new model of higher education, science and technology should be supported, though not necessarily revolve around intensive use of technology and information communication technologies (ICTs).

The characteristics of the profiles of the graduates will be certified by external bodies. Professional certification and institutional accreditation to international standards of professional practice will promote a culture of planning and collegial self-evaluation.

The quantitative scenarios registration, titling, coverage and general issues in higher education by 2020, are determined by the conditions of inequality, inequity and social injustice. It requires an expansion of the education system as well as government initiatives and other sectors of the economy and society, to encourage recruitment of social demand and expand the coverage of the system.

You have to argue that the effort should focus on making the curriculum change, his times, teaching methods and techniques, the change must be addressed essentially the same content of the disciplines.

The ANUIES (1999) recommended in the years to achieve an open system of higher education against a closed, institutional networking, the use of information technology and communication for the formation of the virtual university, the grant legal personality to the rating agencies, and accrediting certifiers.

## **6. Linking**

Linking State-IES-business-society is a prerequisite to complement the efforts of attention to the demand for higher education services posed by population growth, so that they can create and professions necessary to develop economic reality, social and political life. Linking education, science and technology for productive and social sectors will be strengthened

The development of research projects, technology transfer and technological research must be a shared responsibility of mixed financial funds from the agents and actors who benefit most, businesses, state and Mexican society. It must encourage and increase the levels of research and graduate training through research, teaching, disseminator of culture, with capacity to encourage deep learning, knowledge generation, problem solving in various scientific and technological fields of application, provided in current educational policies.

A proposal to encourage private sector participation is to create programs where higher education services to employers offering benefits to attract investment. The dynamism of the private sector could ease the pressure of rising demand, but with dissimilar levels and very questionable in quality of service provided.

Leveraging the advantages of an information society and knowledge, the international mobility of academics, researchers and students will enhance the exchange of experiences, knowledge, skills, values and attitudes that will expand the horizons of vocational training. It is also important to promote programs linkage with multinational and global companies, not only to replenish the plans and programs of study but also to facilitate the employment of graduate immersion.

Institutional innovations to support the substantive functions of HEIs require better structures to expand services to business centers, business incubation programs, etc.. Not to mention the link with social and political sectors through programs such as ciberbolsas work, support groups and marginalized social exclusion, participation in specific projects of the three levels of government to promote regional and economic development, etc. .

## 7. Finance

The problem of higher education has been and will continue to finance and financial planning and instrumentation involved in resource availability. The HEI will assume commitments of transparency and accountability on the implementation and operation of finance either public or private source into a logical institutional complementarity of internal resources. HEIs should be more subject to accountability, audits and scrutiny of the use of financial resources by the state or local educational authorities to prevent the centralization of these functions and therefore its mismanagement.

It is assumed that in the future will increase the pressure for the institutions themselves generate additional income due to insufficient financial resources insufficient to meet demand growth.

The National Development Plan (2006-2012) is very brief to identify possible sources of funding and resources needed for education, research and technological innovation. Due to the high costs of higher education and scientific research and technological quality, new financing schemes will have serious repercussions on inter-relationships between HEIs and government authorities. These impacts would be reflected in the reduction of subsidies and budget allocations, in a more efficient exercise of spending and available resources.

The improvement in the rationale for allocating the financial resources to the various institutions of public education is crucial to abandon old practices articulated in international negotiations institutional political factors - rather than partisan-centered rationality academic results. Therefore, in the coming years is to increase the quality of the processes of transparency and accountability of the substantive responsibilities of HEIs.

The IES must take concrete actions to increase transparency and accountability in the exercise and operation of public financial resources in a cohesive way with their university autonomy and other components of higher education systems in such a way that promotes collaboration complementarity institutional. The State should consider the investment in higher education and scientific research as social investment.

Increasing budgetary constraints financially pressuring higher education institutions in Mexico have impacted strongly on delivering quality education services in the public sector. The heavy tax burden that higher education represents for the Mexican state that can not meet all the expectations of scientific and technological training of Mexicans, has led to social transfer this responsibility to the private sector, not without difficulties for the huge infrastructure investments needed to provide educational services efficiently and effectively.

The quantitative growth of the private sector in education and research will result in higher recruitment of upper-class students by offering a higher leadership position, despite the heterogeneity. Many HEIs will travel paths for the conversion of public to private universities through market mechanisms their products, such as graduates, knowledge and values.

Higher education requires a sustained effort to manage financial resources to meet the responsibilities for training, preservation of identity and values of culture, science and

technology, knowledge generation, technological innovation, technology transfer etc. Transfer the responsibilities of financial contribution to private sector only partly resolve the complex problem because it limits opportunities for social mobility to those who need it because they can pay their training, so it is imperative that the State assume financial responsibility under a perspective long range to strengthen higher education in highly competitive sectors of society who lack the resources to do it by themselves.

Although one must strive to advance the state responsibility for higher education to meet the educational demand in the next 13 years is necessary that educational services are expressed in terms of provision and demand for education on a regulated market, resources and educational inputs to shore up a knowledge society and information. The knowledge society and the adoption of the paradigm of lifelong learning and lifelong education are assumptions regarding the context of UNESCO.

The implementation of public investment in higher education is a response to the needs of most Mexicans who do not have the opportunity to access higher education in order that all public and private HEIs have the educational infrastructure and academic plant best to provide quality education. To achieve this, are required to implement new ways of financing public higher education to respond adequately in coverage, relevance and quality. On the other hand increase the responsible social participation in education spending but also to become social auditors, as mechanisms to enforce the transparency and accountability that direct management and academics (teachers and researchers) for a correct application of financial resources.

The management of financial resources will become significant in the coming years which will require a greater deal of creativity To eke out scarce resources, and to new programs such as exploring linkages with other universities and foundations that have bags of funding for specific projects vocational training, creation of scientific and technological knowledge, technological innovation programs, technology transfer, support for disadvantaged groups to access to educational opportunities, etc..

In the coming years is to increase the management capacity to raise funds for financing, for example, by offering teaching activities, research, innovation, development and linkage to services can be classified as multiplier effects spill benefits to the students and researchers. One would expect that in the Mexico of the future, private initiative will increase their contributions, which would make them less dependent on progress in this area are conducted in more advanced countries.

The scarcity of financial resources and the urgent need for financing the activities of higher education, especially with regard to infrastructure and educational equipment will help us to generate resources from other sources such as the creation of trusts, institutional credit and income for themselves towards sale of services.

## **8. Comprehensive assessment of the educational process**

The current National Development Plan (2006-2012) proposes the creation of the National System of Educational Evaluation in the middle and higher education and teacher performance measurement. In higher education, science and technology is a priority in the years to establish

a comprehensive evaluation system of education is more focused on the evaluation of the entire educational process including the results.

The trend in assessment processes will continue in the mechanisms of the diagnostic evaluation of programs, evaluation of inputs, results of educational processes and formal accreditation system for independent bodies but with recognition of the education authorities. The assessment of institutional quality will encourage innovation by academic assessment results based on a funding model focuses on performance criteria and comprehensive programs of institutional strengthening.

This system should evaluate the performance of all actors involved in educational processes, including the State, community, education officials, teachers and researchers, parents, support institutions, students, etc. Similarly, the comprehensive evaluation system of the educational process should evaluate the institutions, infrastructure, financial resources and materials, resources and teaching aids, etc..

To achieve greater resource efficiency is necessary to implement assessment systems, accreditation and accountability for the application of resources. It requires policies, strategies, norms and performance indicators of academic quality and attention to environmental demands and the labor market. It is also important to disseminate the results of the evaluations, ensuring feedback to those involved in educational processes to establish appropriate remedial measures.

## **9. Needs Action**

The remaining tasks proposed by De la Fuente (2007) to advance the knowledge society are: Investing in education, research and development, rede form a world-class university, raising the academic standards of the economically active population and import knowledge and not only export

The training of the future must be capable of combining pragmatic and empirical knowledge with theoretical and methodological knowledge. The reorganization of knowledge and their inter-disciplinary and interdisciplinary, relationship of curriculum and teaching-learning processes, and so on. Are urgent matters that the transformation of institutional academic management must address?

Higher education has as its main development challenges of educational content and curriculum plans from transdisciplinarity, complexity and uncertainty, methodological strategies, new forms of organization and government, creating strategic alliances for complementary resources, etc. The processing of HEIs in Mexico will face as a major challenge to respond in a more responsible to the demands of social and productive sectors.

The challenges of higher education is to rethink its role and mission to establish alternative strategies for the future in a framework of sustainable development, peace culture and a global ethic. The challenges of educational reality require cooperation and solidarity as the foundations to avoid marginalization, fragmentation and polarization of knowledge.

Taking a critical discourse about the scope of the functions of the new model under the IES and a focus on market requirements underestimate the social needs of the Mexican state.

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