UNIVERSITY: The Last Call?
Universidad: The Last Call?

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This work was carried out with the aid of a grant from the International Development Research Centre, Ottawa, Canada.
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ACRONYMS

AA: Alumnos Ayudantes (Student Assistants).
ALBA: Alianza Bolivariana para los Pueblos de América (Bolivarian Alternative for the Americas).
ANIE: African Network for Internationalisation of Education.
ATAUSIBO: Asociación Sindical de Trabajadores Administrativos y Técnicos de la Universidad Simón Bolívar (Union of Administrative and Technical Workers at the Simon Bolivar University).
CNU: Consejo Nacional de Universidades (National University Council).
CRES: Conferencia Regional de Educación Superior (Regional Conference of Higher Education).
CUSAM: Complejos Universitarios Socialistas Alma Mater (Alma Mater Socialist University Complexes).
DU: Developmental Universities.
EFA: Education for All.
ENLACES: Espacio de Encuentro Latinoamericano y Caribeño de Educación Superior (Latin America and the Caribbean Area for Higher Education).
EU: Entrepreneurial University.
FONACIT: Fondo Nacional de Ciencia Tecnología e Innovación (National Fund for Science, Technology and Innovation).
GATS: General Agreement on Trade in Services.
ICT: Information and Communication Technologies.
IDRC: International Development Research Centre.
IVIC: Instituto Venezolano de Investigaciones Científicas (Venezuelan Institute of Scientific Research).
LOCTI: Ley Orgánica de Ciencia, Tecnología e Innovación (Organic Law for Science, Technology and Innovation).
LOE: Ley Orgánica de Educación (Organic Law of Education).
LUZ: Universidad del Zulia (University of Zulia).
MDG: Millenium Development Goals.
MDO: Millenium Development Objectives.
ME: Ministerio de Educación (Ministry of Education).
MES: Ministerio de Educación Superior (Ministry of Higher Education).
MPPES: Ministerio del Poder Popular para la Educación Superior (Ministry of Popular Power for Higher Education).
MPPEU: Ministerio del Poder Popular para la Educación Universitaria (Ministry of Popular Power for University Education).
NGO: Organizaciones no Gubernamentales (Non-Governmental Organizations).
OECD: Organization for Economic Co-operation and Development.
OPSU: Oficina de Planificación del Sector Universitario (Planning Office for the University Sector).
ORUS: Observatorio Internacional de Reformas Universitarias (International Observatory of University Reforms).
PCDNR: People-Centered Developmental Needs Research.
PFG: Programa de Formación de Grado (Undergraduate Training Program).
PPI: Programa de Promoción al Investigador (Program for Promoting Researchers).
RUSNIES: Registro Único del Sistema Nacional de Ingreso a la Educación Superior (Unified National Registration System for Admissions to Higher Education).
S & T: Science and Technology.
SAMES: Small and Medium Enterprises.
SCI: Science Citation Index.
SSCI: Social Science Citation Index.
The-QS: Times Higher Education QS World University Ranking.
UBV: Universidad Bolivariana de Venezuela (Bolivarian University of Venezuela).
UCV: Universidad Central de Venezuela (Central University of Venezuela).
UFRJ: Universidade Federal do Rio de Janeiro (Federal University of Rio de Janeiro).
USB: Universidad Simón Bolívar (University Simón Bolivar).
WCHE: World Conference on Higher Education.
WTO: World Trade Organization.
Latin American public universities are widely diverse, in many respects. Some of them were funded before independence, some closely after, some in the XX century. Their size, the proportion of the total university enrolment they represent vis a vis private universities, their formal governance system, the strength and influence of their most important constituencies, that is, teachers and organized students, are all elements of this diversity. They have several commonalities too. Some are facts: public universities concentrate the bulk of research activities, are the main source of PhD programs in all fields of knowledge, and represent by far the most important labor market for researchers. Some commonalities are of a different nature, more related to a Latin American “model” of university. The participation of students in the government of the institution, and the inclusion of “extension” as a university mission, alongside teaching a research, are the most salient among the features that allow speaking of such a model.

It is worth to recall that these features were proclaimed as the main goals of a student upheaval, occurred in 1918. It’s Manifesto, “The youth of Cordoba to the free men of South America”, became highly influential in the continent, and famous enough to be reproduced in Minerva, in its 50th anniversary. The Manifesto denounced the lack of research in the university: “science, in front of these closed and dumb houses, passes silently, or enters, crippled and grotesque, at the bureaucratic service”. It denounced as well the archaic notion of authority that prevailed, preaching the Latin American students to become an integral part of the university demos. But perhaps the most enduring feature of the “Reform
Movement” born in Córdoba is the attempt to give a place to solidarity within the university. What exactly encompasses such an attempt differs from country to country and from time to time. In some cases it implies that advanced students have to work for some time in their future trade, at remote or poor geographical settings, before getting the corresponding grade. In other cases, extension activities are not compulsory, but the universities encourage students as well as teachers to devote efforts to assist disadvantaged people or communities in whatever they are able to do through their specialized capabilities. In almost all public Latin American universities, extension has a formal institutional place, with specific programs and a budget of its own.

Why is it that this particular feature of the Reform Movement endures? It is perhaps worth to come back to the sources. At the beginning, the Manifesto says: “our remaining grieves are the freedoms still missing”. Even if this text was written 70 years before Amartya Sen’s “Development as Freedom”, it echoes its message. Development has to do with the fulfillment of the freedom every person has “not to be less or to live less”. The lack of this freedom, lying at the heart of underdevelopment, is the remaining grief that keeps on impelling the structural social involvement of public Latin American universities.

“University: The last call” is a book that searches in the current Latin American higher education landscape stylized models of universities along several axes. An outstanding originality of the book is that all of them are related, in a way or another, to social involvements. Who ought to be the university students? Where universities should be established? How research is to be organized? What should count as academic merits? These questions have been posed, time after time, in Latin America. Again and again, acknowledgment of injustice and extreme inequality has pushed towards a feeling of social irrelevance regarding universities. Common answers to these feelings have been different kinds of proposals to build a different type of science, with different aims and different protagonists. These attempts usually never went too far; this book illustrates in detail one of the latest, that is indeed going far, precisely in Venezuela.
The book, as all stimulating ones, leave the reader with new questions and with old questions posed from new angles. Most revolve around the ways to put universities at the service of development. Three are particularly thorny, two of which are explicitly posed in the book. Those two are: How can we foster access to meaningful higher education for a growing cohort of young people? How can we stimulate knowledge production agendas that incorporate the “problems of the voiceless”? The answers provided in the book are plural, both at a descriptive level and at a normative level, which is good. The third question is: how can we stimulate the need for knowledgeable people and for knowledge production in countries which underdevelopment is partly a consequence of the weakness of knowledge demand? This is not a question only to the universities; clues to address it are given, though. The book provides elements to think systemically, and this is particularly valuable for collective social actors, from one kind or another, and even better if mixed, that will continue to search for answers.

Uruguay, June 2010
INTRODUCTION

The university is one of the most debated contemporary institutions. Some, without any hope, affirm that the university is dead; others, less drastic and wishing to leave a door open to its recovery, state that it is in ruins or exhausted; and, finally, the most optimistic, knowing the role it plays in society as a cultural icon, repeat convincingly that its transformation is the only alternative, given the manifest loss of value and meaning that have eroded it.

It is easy to accept that the “ambience” that fostered and consolidated the University born in Bologna in 1088 as a model for this institution in the West, has no similarity to the contemporary world and its complexities. The university, heir to Bologna, seems out of place in a world of plural, voluble and borderless types of knowledge, since it has become incapable of incorporating them in its practice.

Nevertheless, it could happen that instead of being present at its end, we are witnessing the emergence of a new university, called on to become an institution that will emerge as an answer to the contemporary world and its complex problems: increasing distances between the developed north and the underdeveloped south, cutting edge advances in science, communications and technology interwoven with inscrutable realities of inequality, exclusion, fundamentalism, resurgent racism and the erosion of environmental reserves that guarantee survival of the planet and life itself.

This was the idea that inspired the convening of RoKS (Research on Knowledge Systems), a competition launched by the IDRC (International Development Research Center) under the title: “Developmental Universities: A Changing Role for Universities in the South.” This competition invited research proposals that addressed questions such as: What are the new forms of universities in the South? What is driving this change? What does this change mean for universities in the South? What should the role and impact of university research in the South be in order to meet its developmental potential?

This book is a compendium of results from one of the research projects that received a National Research Grant Award in
the aforementioned convocation and was carried out by three Venezuelan researchers who are its authors. The objective of the Project was to analyze an emerging university model engendered in Venezuela and useful for Latin America or the underdeveloped South, due to its potential for conjugating knowledge production with surmounting underdevelopment; this model took shape at the Universidad Bolivariana de Venezuela (UBV) (Bolivarian University of Venezuela) and other universities like it created in that country.

In this book, the innovative aspects exhibited by the aforementioned model are analyzed based on a comparative study between three universities identified with the higher education conventionally recognized in Latin America and the UBV; it describes the positive and negative effects produced by that innovation in general; and, among the conclusions, it mentions that the adoption of only one university model does not satisfy the demanding challenges faced by universities in Venezuela and the rest of the underdeveloped countries.

The narrative extends through four chapters. Chapter I, titled “A New University Concept for Latin American Universities,” introduces the undeferrable demand for university transformation, valid for the North as well as the South. It offers a brief genealogy of the institution, and identifies the underlying forces that call for a reconceptualization of the university. This chapter places the Latin American and Caribbean region on the scene thus configured and situates the reader in Venezuela, where the research took place, and in its higher education system. Furthermore, the chapter offers details regarding the methodology used to perform the research and sets forth one of the main findings: plural forms of universities instead of a single new one.

Chapter II, “An Alternative Theoretical Model to Comprehend the New Roles of the University in Developing Countries,” explains in detail the analytical tool constructed during the research process so that the objectives could be reached. This model defines axes, essential aspects and key features that can be applied to any type of university in order to understand its scope, practices, roles and functioning. In this sense, it is important to point out that the models, generally used by international organisms for these purposes, ignore or underestimate the logic and the realities of the
new university forms gestating in the South. That limitation im-
pliance us to construct an alternative analytic resource, which con-
stitutes one of the outstanding contributions of this book and the
research that supports it. The four thematic axes that compose the
model are: Knowledge Production, Concept of the University,
University-Surroundings Relationship for Knowledge Production
and University Actors.

Chapter III, “The Case of Venezuela: Applying the Theoretical
Model to Evaluate the Emergence of an Alternative University,” of
fers a comparison between two models in the Venezuelan higher
education system, supported by the collection and analysis of em-
pirical data obtained at the universities included in our case study.
This comparison led us to identify a new form of university and
specify its characteristics and effects on knowledge production
and overcoming underdevelopment. The chapter organizes the
comparison around components proposed for the Theoretical
Model, which is a strategy for its validation as an analytical tool
and at the same time, makes it possible to point out the particulari-
ties (contradictory or confluent) of emerging universities in terms
of the essential aspects and key features.

Finally, Chapter IV, titled “A Plurality of Concepts for Universi-
ties in Developing Countries,” introduces the term “toolbox” to il-
lustrate the need for configuring new theoretical resources that al-
low us to approach the contemporary university, enunciate the new
codes and referents that justify a reconceptualization of the univer-
sity in developing countries and present the renovating university
models of most recent appearance on the continent. Furthermore,
this chapter notes the expectations and challenges, conditions and
nuances faced in order to build a new concept of university for such
contexts. It concludes offering a Pluriconceptual Framework for
Latin American Universities as a heuristic tool that includes the het-
erogeneous taxonomy of higher education institutions that exist or
are being created in Latin American and will permit designing the
corresponding concepts and indicators to go with each type of uni-
versity that could potentially become visible in these contexts.

Completion of this book and the research Project were possi-
ble thanks to the support and collaboration given by the IDRC and
the Universidad del Zulia (University of Zulia), especially the Pro-
grama de Doctorado en Ciencias Humanas (Doctoral Program in Human Sciences). A special mention should be given to the universities that were part of our case studies, in particular their authorities, professors and students, who kindly and generously shared part of their time to provide us with the required information. On the personal level, we thank the members of our Counter Team, María Egilda Castellano, Rigoberto Lanz and Josefina Bruni Celli; also, Emilia Chirinos and Natalia Sánchez, who coordinated the focus groups in the selected universities; and Amalia Bohórquez for her support with administrative tasks.

We feel very much in debt with Judith Sutz, who was characteristically generous in taking time to write the foreword. We are particularly grateful for her creative work which challenged us with alternative views.

We do not wish to conclude this brief introduction without encouraging the reader to discuss and formulate criticism and counterproposals that may contribute to inspiring further debate about the challenges the university faces in this new millennium.
CHAPTER I
A NEW UNIVERSITY CONCEPT FOR LATIN AMERICAN UNIVERSITIES

TRANSFORMATION OF THE UNIVERSITY: A DEMAND FROM THE NORTH AND SOUTH

The history of the university has not followed a linear route. Throughout the years, there have been many moments of crisis that have unleashed significant university reform processes whose orientations have varied according to the context in which they took place. These routes have not been similar for all countries; thus, in the developed countries, the changes have fundamentally obeyed the need to restate the relationship of higher education institutions with the State, which translates on the one hand, into greater extra-State financing and on the other, into greater university autonomy. In underdeveloped countries, reforms of the last decades have been oriented more toward modernizing the institutions, whether with regard to the norms that regulate them or the practices intended to improve their standards, taking as referents the institutions of the developed world.

Now, the third millennium has arrived, and at its beginning, we are situated at the epicenter of a profound epochal, cultural, civilizational and epistemic change that shakes the entire configuration of societal worlds and at the same time, produces the expiration and crisis of traditional scientific perspectives and with that, conventional modes of university performance.

Key questions about the university that seemed to have been resolved in the last third of the twentieth century have been raised again; the concept, nature, function and role of the university in the twenty-first century are pending queries. This is due to the increasing complexity of the underlying forces that condition them, such as globalization, international cooperation and mobility, new communication technology and media, structures changing on the
way toward a knowledge society and new steering and management systems (Teichler, 2004), together with inclusion of the environmental theme on the agenda of topics crucial for the survival of man and the planet.

Although these forces are, in many cases, common to developed countries and those that have not yet achieved development, the way that such situations have a bearing on higher education and knowledge production contexts is not identical. In the case of developing countries that form part of what Vessuri (1984) calls the "scientific periphery," we should add to the aforementioned underlying forces the consideration that:

...there is a clear and expressed expectation in many policy frameworks that Higher Education can and must play a driving role in addressing the challenges of poverty and diseases, of economic growth and social development, and of democratization, peace and security. These expectations have taken on greater resonance in the context of the pressure and deadlines to achieve the MDGs (Millennium Development Goals) and EFA (Education for All) targets (Mala and Takyiwaa, 2007:2).

Currently, universities in underdeveloped countries must face, on the one hand, the challenges proposed by the knowledge society and the economy and, on the other hand, their identification as a link between underdevelopment and surmounting it. Nevertheless, entry to the knowledge society does not mean the same for the North as it does for the South. The formation of intellectual capital as the principal asset in the rich and prosperous countries in the contemporary world has converted its lack into both the cause and effect of peripheral countries being anchored in backwardness and underdevelopment, as expressed in the Declaration of Santo Domingo (United Nations Educational, Scientific and Cultural Organization, 1999a):

The weakness in S & T of developing countries constitutes one of the causes of their dependent and marginal incipient insertion in the emerging "society of knowledge" ...The increasing gap between the Northern and Southern capacities in S & T constitutes one of the main contemporary manifestations of the persis-
tence of underdevelopment and one of its major causes. This remarkable difference in terms of knowledge and scientific capacity is directly translated into power imbalances (mainly economic, political and cultural).

In the light of these imbalances, universities embody the most influential authority for subverting the dynamic that threatens to leave Latin America "out of the game" in the twenty-first century. They are the privileged spaces where knowledge is produced on this continent, even though this production may be insignificant when compared to the United States and countries in the European Union in terms of the most common indicator, i.e. the number of scientific publications registered in the best-known indexes. Graph 1 shows the evolution of that number during the 1996-2008 period in both contexts.

Graph 1


We can observe that, in a lapse of 12 years, scientific publications in Latin America remained almost constant and in the minimum ranges, while countries of the developed North permanently exhibited a high number of publications, accentuated in Europe from 2003.
Graph 2 illustrates the participation of some Latin American countries in the world-wide total production of scientific publications for the same period.

**Graph 2**

**Participation of Latin American Countries in the World-Wide Total Production of Scientific Publications for the Period 1996-2008.**

![Graph showing participation of Latin American countries in scientific publications](image)

Source: SCImago, n.d.

Regarding scientific production in Latin American countries broken out from world-wide scientific publication production, it is interesting to highlight that although Brazil stands out significantly above the rest, it represents only 1.34% of the world total.

Even so, and despite the weakness of the knowledge production pattern in Latin American countries, it is possible to find isolated groups of researchers who break that pattern; however, their work agendas generally respond to the personal interests of their members; and the possibility that their results might be utilized by industry or the government to solve concrete problems or in technological innovation is not a must, even though they practice applied research.

Precisely, we are talking about renewing university institutions in Latin America and the South so that they surmount the ep-
ochal exhaustion in which they seem to be submerged, consequent to the implosion of the epistemological paradigm that modeled ways of thinking and teaching in their spaces for centuries, and become links between underdevelopment and development.

How to carry out this renovation is the question that occupies the discussion of higher education experts and scholars in Latin America and other latitudes. This book provides key analytic resources that reveal innovative aspects at some emerging universities on the continent and shows how those aspects can facilitate the transformations demanded from those institutions.

One of these resources is the Theoretical Model explained in Chapter II and applied comparatively in Chapter III. Another of the resources introduced is the Framework for mapping the complex variety of higher education institutions that exist or are being created for developing countries, explained in Chapter IV.

A BRIEF GENEALOGY OF THE UNIVERSITY

To understand how that epochal and epistemological change and the attempts to resolve it have impacted higher education and, in particular, the university, it is necessary to recur to a brief review of its history. The first universities in medieval Europe resulted from the decision of freely congregated communities of professors and students to teach and follow professional courses of theology and art in Paris, law and medicine in Bologna, whose successful culmination was certified by the institution through the bestowal of degrees and diplomas. These first European universities constitute the historic antecedent to the modern university, conceived as a privileged space for creating knowledge.

Nevertheless, the flourishing of the European university from its creation until the mid-sixteenth century was the preamble for a period in which the social role of the institution was eclipsed. Its conservative character was imposed, opposed to the changes of thought that brought the Enlightenment and the scientific revolution, in process at that time, with humanism as its philosophical base. Thus, after a period of growth and expansion, the European university experienced a stage of obscurantism from the end of the sixteenth until the eighteenth century. During this stage, most universities gave up their spaces as creators of knowledge to other in-
stitutions, i.e. the academies of science and scientific societies, already created at that time (Geuna, 1999).

The Latin American university and, in general, the university created in underdeveloped countries with a colonial past originated in an initiative coming from the church or the imperial State that, through the university, sought to impose on the colonies not only a social organization favorable to their plans for conquest but also a structure of thought and values that would give a solid foundation to their hegemonic proposals. Nevertheless, this did not imply that their development and trajectory were the same as those followed by their counterparts in Europe.

In this sense, of the powers that colonized Latin American, Spain gave priority to the creation of universities while Portugal did not, which explains why this institution appeared later in Brazil (Arocena and Sutz, 2001). Spain created the first universities in the conquered territories in the middle of the sixteenth century, just when the deterioration of the university and its period of stagnation were beginning; therefore, that was the type of university transplanted to the colonies, with its load of conservatism and absolute identification with ecclesiastical power and the monarchy.

This characteristic gave a particular bias to the university in Latin American countries colonized by Spain. The model of the Universities of Salamanca and Alcalá de Henares was imposed, without producing in the colony the dynamic that had made the creation of the European university possible, and whose origin was always found in citizen initiative. To its condition as an institution imposed by political or ecclesiastical power was added its position contrary to science, practical work and the most advanced currents of the Renaissance (Arocena and Sutz, 2001). Its social function was limited to training the few students coming from the economic and political elite to form part of the clergy and State officials.

The colonial university model was maintained practically unaltered until the beginning of the eighteenth century when independence movements were imposed in all Latin American countries, identified with the ideals of humanism and the postulates of the French Revolution. From then on and during the rest of the nineteenth century, the precariousness of the conservative, reactionary colonial university co-existed with the incipient impulses of the directing classes
in the new republics toward creating an institution that was more identified with their ideals (Arocena and Sutz, 2001).

For Latin America, this meant introducing the Napoleonic model of the French university with its organization into autarchic faculties, the permanence of its elitist vocation and the divorce between teaching and research. It also implied that Latin American universities would remain "... as training and certification institutions for the learned professions (Law, Medicine, Engineering) under strict State supervision, and later, already in the 20th century, as a mobility channel for the upper segments of a growing urban middle class" (Schwartzman, 2008: 9).

Likewise, in Latin American countries that achieved a certain degree of socio-economic development after independence, such as Argentina, Chile and México, the impulse toward ideological liberalism favored conditions so that pronouncements of a reformist nature arose and affected universities in the region to differing degrees throughout the first half of the twentieth century. Nevertheless, even in those countries where political conditions permitted, the repercussion of those pronouncements did not go farther than installing university co-government and autonomy in relation to the church and State, a relative autonomy, since the university continued to be financed principally with public funds (Parra-Sandoval, 2009).

What the reform of the second decade of the twentieth century did provoke was a change in the Latin American university imaginary in terms of the social function the institution ought to fulfill related to the modernization of Latin America. Thus, a concept of university was consolidated in which structures and dynamics of the republican and Napoleonic model interwove with the idea of that institution as an instrument for social change and a revolutionary commitment to society. This corresponds to the economic reality of the majority of Latin American countries in the context of an international division of labor, by virtue of which their role was that of producers and exporters of raw materials. Therefore, the impact of the university on society was limited because it conserved its elitist character.

To this combination of elements was added the influence exercised by principles taken from the tradition of the German university and its bearing on the Anglo-Saxon model, where research was fully incorporated in the university. The rhetoric that has been built up
around this theme tends to indicate that this incorporation was attributed to the Humboldtian ideal of connecting research with teaching, as processes that should be completed univocally in the university.

Nevertheless, it was the political and social circumstances and their impact on the social organization of science during the first decades of the nineteenth century that marked the development of the German university as the direct antecedent for the modern research university, more than the model designed by Humboldt proposing the connection between teaching and scientific research.

In this regard, Schwartzman (2008: 8) points out that "In fact, the unification of knowledge and education proposed by Humboldt was closer to the philosophical concept of Bildung than to the modern notion of scientific research. Thus, the German university model “can be seen as the result of the interaction between a new social organisation of science, the Humboldtian model, and a new structure of science - that is, the spontaneous trend towards the subdivision of knowledge into scientific fields.” (Geuna, 1999: 46).

Based on this antecedent, the Anglo-Saxon university built its own model, incorporating elements whose roots were found in the idiosyncrasy of United States society and its historical formation. Three objectives can be identified in this model that supposes the combination of teaching the different disciplines with the creation and application of scientific and technological knowledge: first, adapt education to the accelerated development of science; second, learn through practice; and third, connect knowledge with productive activity (Arocena and Sutz, 2001). The achievement of these objectives supposed the establishment of structures that agreed with them: the creation of graduate programs for advanced studies, the development of professional schools, adoption of the department figure to cover training and applied research in the field of a particular discipline, and the creation of research institutes specialized in the development of cutting edge scientific research at that moment.

The combination of all these elements originated the United States research university; and even though only a relatively small number of universities in the North American higher education system have been able to place themselves in that category and consolidate their position over time, the twentieth-century Latin American
university assumed those components as part of its rhetoric about what the institution "should be" in terms of the specificity of its social function and its academic-organizational structure. Nonetheless, the social, political and economic conditions in the majority of Latin American countries do not offer the appropriate context for putting this rhetoric into practice; neither the physical infrastructure nor the human and economic resources were available to permit this university concept to penetrate the institution.

The result was a hybrid model in which the idea of the university's social mission and commitment, the grouping of similar disciplines into autarchic faculties, professional training, university co-government, autonomy and research were all present as key university functions. To these characteristics, quantitative growth and massification of the university were added, although it was "...not rational from the economic viewpoint and did not reproduce the tendencies to develop the enrollment that had been observed in similar phases of the European and North American higher education system" (Brunner, 2007: 28).

As an unpredictable effect, the Latin American university became the channel for ascending social mobility making it possible to consolidate the middle classes in society, which held on like no other social group to the utopia of modernization and development through the training of professionals. This accentuated the university's teaching character, which favored training in traditional majors such as medicine and law and not in those that were more connected to developing the modern sector of the economy (Brunner, 2007).

In this way, the traditional Latin American university legitimized itself socially when it highlighted and incorporated research in the university discourse and imaginary as one of the functions of the institution. However, the privilege bestowed on teaching relegated research to a secondary plane, creating a university model that was predominantly professionalizing, as we explain throughout the development of this book.

Regarding the relation of the university to the State, this is limited to public financing without accountability as the institution complies with its principle function: the training of professionals, further sheltered in "... institutional autonomy, political freedom,
critical-intellectual commitment and public vocation …" (Brunner and Uribe, 2007: 202).

The traditional concept of the university and its link with extra-university surroundings and the State remained practically unaltered until the final decade of the twentieth century and the first decade of the twenty-first, when changes produced in the relationship between knowledge and society and in the Latin American political context significantly impacted that institution, to the point of proposing its reconceptualization.

UNDERLYING FORCES THAT CALL FOR A RECONCEPTUALIZATION OF THE UNIVERSITY

The forces that generate tensions and incite reconstruction for a concept of university different from the one that was traditionally allocated, originate in the conditions of contemporary society in general, as well as in the university itself, and can be identified with the globalization process of the economy and the market, the revolution in information and communication technologies, and the impact of the environmental theme, especially regarding its relation to climate change.

Such forces have common traits applicable to all universities in the world; nevertheless, they acquire a particular connotation in Latin America and each country in the region.

In relation to the polemical term of the globalization or mondialization of economies and markets, it is important to explain that discussion about the characteristics of this process has consumed the attention of numerous authors; there is, however, coincidence in that it is a process with an objective existence and, at the same time, it is irreversible.

Discussing globalization begins with recognizing the existence of an asymmetrical and anarchic global economy in which the differences and conflicts between regions of the world are accentuated when facing internationalization of the productive system and the market, as a consequence of creating agreements that de-regulate commercial exchanges, strategic alliances between nations and new forms of organizing production. Another relevant trait is the emergence of a new international division of labor, which substitutes the former division established between coun-
tries producing raw materials and industrialized countries with a
division between the leadership of countries that have a free mar-
ket and production systems incorporated in the international mar-
ket and those that do not.

The aforementioned is possible within the framework of a
tendency toward decreasing the economic role of the national
State and a loss of sovereignty in the light of its displacement by
multilateral organizations (Bozo, 2005). And last, but not least, a
defining trait of globalization is the protagonist role of multina-
tional enterprises in the process. The combination of all these
characteristics creates a scenario on which the value of competi-
tiveness prevails, permeating all human activities.

These expressions of globalization affect education and, par-
ticularly, the university. Various tendencies characterize the changes
connected with that process. The appearance of new higher educa-
tion suppliers, frequently linked to capital that is transnational or lo-
cated in the central countries, has changed the figure of the tradi-
tional private university institution, which used to be small and non-
profit with a local scope (Levy, 2006). The new providers, whose pres-
ence is growing in an accelerated fashion, are mostly profit-making
entities connected to businesses, such as corporate universities (for
example, Motorola University and McDonald's Hamburger University)
or to educational enterprises, i.e. Apollo Group Company, parent
company for the University of Phoenix (Kapur and Crowley, 2008). A
clear manifestation of the impact of globalization on higher education
is the unilateral penetration of this type of initiative from developed
countries—USA, Australia, UK—into developing countries, in a step that
moves the programs and courses of these new providers to the na-
tions where students are found (Knight, 2006).

In the light of this phenomenon and the context of globaliza-
tion that results in an interconnected and interdependent world,
higher education has reacted through internationalization con-
ceived as "the process of integrating an international, intercultural,
and global dimension into the purpose, functions (teaching, re-
search, service) and delivery of higher education" (Knight, 2006:
18), and expressed in the growing mobility, both physical and vir-
tual, of students, academics, programs and projects. This process
supposes centering attention on comparative and international
themes, the growing number of cross-border deliveries of academic programs, the development of new international networks and consortia, the spread of extra-curricular activities with an international or multicultural component, the impulse given to recruiting foreign students, and the expansion of partnerships, franchises and offshore satellite campuses (Knight, 2005).

On the other hand, emphasis on the competitiveness that characterizes the global market generates a highly demanding environment for the university. In this ambit, world university rankings become the mechanism for hierarchizing the prestige of the institutions according to quality criteria that coincide with those applied to the universities from developed countries. This introduces a new element in the diffusion of "a new image of the international geopolitical of knowledge" (Brunner and Uribe, 2007: 68), in which the aforementioned gap between developed and underdeveloped countries is reproduced.

A hierarchical structure is generated in which the world universities in developed countries occupy the upper segment and, to the degree that one descends to lower segments, the universities of underdeveloped countries are found; here, the segmentation of higher education institutions is also reproduced to the detriment of those located in zones that are the most depressed and distant from the central power.

Another manifestation of the impact of globalization on higher education is the tendency toward curricular convergence and the establishment of internationally comparable course credits, profiles, diplomas and certificates. Evidence of this can be seen in international agreements such as the Bologna process in Europe, Espacio de En- cuentro Latinoamericano y Caribeño de Educación Superior-ENLACES (Latin America and the Caribbean Area for Higher Education) and the African Network for the Internationalisation of Education (ANIE), which promote regional cooperation on the theme of higher education (Altbach, Reisberg and Rumbley, 2009) and in which one of the key features to consider is the accreditation of the institutions and programs. Accreditation is considered a mechanism for assuring quality and making transparent the information about fulfilling the criteria with which accredited programs and institutions are assessed. Although the process is furthered by agencies inside the coun-
tries, the standards and indicators used respond to the logic of universities from developed countries, which impose the conditions under which the universities and other higher education institutions compete for resources, students and academics.

Parallel to this integrating tendency in which the international organisms become designers and promoters of higher education policies, in the heart of those countries, the tendency is to diminish the role of the States and their interference in the control of matters connected to these policies. Displacement of the public sector in this ambit has allowed private initiative to acquire a greater load of responsibility and reproduce the conditions and characteristics of universities in the developed world.

Another social force that generates tensions and provokes reconfiguration of the university concept is originated by the scientific and technological revolution and the massive diffusion of knowledge, mediated by the development of Information and Communication Technologies (ICTs). This development is closely linked to the globalization process, because the market for computer science and telecommunication services imprints greater dynamism on the globalized economy.

The revolution in information and communication technologies has transcended borders and is the instrument that has made the global village a reality. Nevertheless, even though the use of these technologies is ever-greater in daily and working life, it is also evident that access to them, as instruments for active incorporation in the knowledge economy, is as asymmetrical as the globalization process itself.

The development of information and communication technologies has had a substantial bearing on the university dynamic, because virtual education has enhanced presential education. Even though distance education is not a recent phenomenon in higher education, its use has opened new opportunities for the learning process by making it possible outside of the traditional classroom space and breaking with old-fashioned modes of teaching in which the presence of a tutor or teacher was indispensable. Additionally, the introduction of ICTs in the universities has a significant impact on the central role of the student in the learning
process and his/her face-to-face relationship with the instructor, who also assumes the role of "cognitive coach" (Findlay, 2010).

Nonetheless, what could be seen from an optimistic perspective also presents its dark side when contrasted with the reality of universities in underdeveloped countries. Most of these institutions, generally massified and with limited resources, "...lack the appropriate infrastructure and necessary conditions, as well as the human capital to utilize the full potential of the ICT" (Guri-Rosenblit, 2003: 5). This disadvantage facilitates penetration by private, profit-making universities from developed countries. One example of this is the University of Phoenix, the greatest provider of virtual education in the world (Kapur and Crowley, 2008).

Finally, the impact of the environmental theme, especially in terms of climate change, is also generating tensions that provoke reconfiguration of the university concept. For various decades, environmental movements have seen their influence grow in terms of the awareness of States and international organizations regarding the transformations being produced in the environment with ever-increasing intensity, particularly those related to climate change, as a consequence of the increased concentration of greenhouse gases associated with economic growth and, at the same time, with the increase of poverty in the world.

This reality is a double challenge for the university, especially in underdeveloped countries, which must train professionals with an environmental conscience and, at the same time, produce knowledge that responds to requirements for endogenous and sustainable development, understood as development that interconnects what is economic with what is social and environmental. Endogenous, sustainable development is based on the premise that this development should be founded on knowledge and information; its fundamental objectives are protection of the environment, the eradication of poverty and the promotion of sustainable modes of production and consumption. In this aspect, the responsibilities are common to developed and underdeveloped countries.

Boisier (2003) mentions that the characteristic traits of endogeneity, according to the territorial development model, are three: First, the capacity of the territory to save and invest the benefits generated through its productive activity in its own territory
and to promote diversified development of the economy; second, the territory's capacity to stimulate and drive technological progress of the productive fabric, starting with the territorial innovation system; third, the capacity of cities and regions to adopt their own development strategies and carry out the actions necessary to reach the objectives the community itself has indicated. The sustainability of this model comes from adhesion to ethical principles of sustainable development, which respect and protect nature and the culture of the people within a concept of environment integrated with what is socio-cultural.

The university acquires a key role in the light of the challenge of endogenous and sustainable development in the globalization framework. It is not enough to guarantee the training of human resources nor the generation of knowledge; it also requires that the universities become "centers of excellence" in which economic growth is promoted together with respect for the environment, cultural diversity and democratic values through meeting local or regional actors.

In summary, the conjunction of these briefly sketched features constitutes the background on which a new concept of university is generated that, as we shall see further on, adopts or tries to adopt different ways of responding to the demand to insert itself in a changing society. Both the pressure exercised by market conditions derived from the globalization process and the demand that the university integrate itself actively in the sustainable development process, especially in underdeveloped countries, generate a set of external and internal factors that submit the institution to tensions characteristic of the epochal change being experienced by humanity.

LATIN AMERICA AND THE CARIBBEAN IN THIS CONTEXT

In Latin America and the Caribbean, these tensions are deepened to the degree that the economic and political conditions of the region present a panorama in which it has not been possible to overcome social inequality and inequity, despite the efforts undertaken by a majority of the States and the moderate economic growth achieved by countries in the region during the last two decades.

In general terms, we are interested in highlighting the most relevant traits that represent the situation in the region according to information provided by the Economic Commission for Latin
America and the Caribbean (2009). Latin America and the Caribbean have more than 580 million inhabitants, of which nearly 80% live in urban spaces; this contrasts with the generalized condition in the region in the mid-twentieth century when most of the population lived in rural spaces.

Likewise, 33% of that population is composed of people living in conditions of poverty, whose income is less than twice the cost of a basic food basket, while 13% live in conditions of extreme poverty with an income lower than the cost of the basic basket. Perhaps this explains why the infant mortality rate is 22% (Economic Commission for Latin America and the Caribbean, 2009).

It is also interesting to emphasize that in Latin America and the Caribbean, even though the statistics recognize an unemployment rate of barely 8.3%, this figure hides the fact that there are great contingents of people whose income comes from work with only slight or null productivity and without social security guarantees; that is, precarious employments predominate, which is a characteristic associated with an informal economy that has retained genuine growth in most countries in the region.

To this situation of precarious employment, one should add that 8.3% of the population is illiterate; the gross enrollment rate in the third level of education is one-third of the school-age population (32%). Furthermore, a significant number of young people from 15 to 19 years of age do not enter the school system or desert it before finishing the secondary cycle, or they find themselves studying with a considerable delay in terms of age.

In addition to the aforementioned, this situation of exclusion, poverty and inequalities becomes worse to the degree that political and governability conditions put into relief "...structural weaknesses and variable degrees of instability and the ineffectiveness of the policies and regulations needed for the good functioning of societies" (Centro Interuniversitario de Desarrollo, 2007: 50).

In the political context, even though formal government democracy prevails, internal conflicts, weaknesses or lack of social consensus regarding the project for the country have been the norm in most Latin American and Caribbean countries. This has translated into the presence of emerging social movements whose objective, not always well-clarified, is to achieve a system of gov-
ernment that guarantees better and higher levels of quality of life for the great percentage of the population that finds itself in the previously described social and economic conditions.

Another important trait to emphasize is the existence in the region of two large power blocs whose ideological and political positions go beyond their implications for the region's economy, because they affect the notion of development that is adopted and the respective organization of the State. The confrontation between the two blocs has special importance regarding how to define the role of the university and design the necessary reform to respond to it.

In indicative terms, we can group Colombia, Peru, Chile, Honduras, Mexico and Panama in one bloc and Argentina, Bolivia, Cuba, Ecuador, Nicaragua, the Dominican Republic and Venezuela in another. The latter countries make up the Alianza Bolivariana para los pueblos de América-ALBA (Bolivarian Alternative for the Americas), whose inclination is to imprint a socialist bias on the transformation of higher education. The other bloc of countries does not congregate around one particular organization, but it coincides on the idea that higher education ought to advance at the rhythm set by world tendencies. Costa Rica, El Salvador, Guatemala, Paraguay and Uruguay maintain a central position in relation to those two blocs and their higher education policies.

IS A NEW UNIVERSITY MODEL FOR THE SOUTH EMERGING IN VENEZUELA?

Parallel to the modification in the role of universities and the pressing need that they become engines for social and economic development, in Venezuela, a series of changes are being produced; these changes result from the apparent emergence of a novel university form that is conceptually, structurally and functionally different from the higher education institutions deeply rooted in Latin American countries. This new form of university adopted the name of Universidad Bolivariana de Venezuela-UBV (Bolivarian University of Venezuela), even though after its formation, other universities have been created in the country that follow the same model and form part of the Misión Alma Mater (Alma Mater Mission), which will be explained in this chapter.
This circumstance motivated us to propose a research project that would analyze how innovative the emergent model was and to what degree its implementation supposed that the challenges and demands the university faces in countries of the South have been satisfied. This book presents the results of that project whose objectives were:

1. To identify the principal alternative features introduced by the UBV model in order to fracture the preexistent university model in Venezuela and other developing countries;
2. To denote if and how the UBV university model contributes to making knowledge production and distribution its most important role in order to overcome underdevelopment problems;
3. To discover clues for re-conceptualizing a university model oriented toward achieving development as a consequence of accomplishing the two preceding objectives.

To state the results to which the research led us, a comparison will be presented. The two university models chosen as alternatives were the one represented by the UBV and the rest of the universities created through the Misión Alma Mater, which we have named the emergent model; and the model corresponding to Venezuelan universities preexistent to the UBV, generic for most Latin American universities, that we will refer to as the preexistent university model.

**VENEZUELA: A BRIEF PRESENTATION**

Venezuela, officially called the República Bolivariana de Venezuela (Bolivarian Republic of Venezuela), is a country located in the north of South America and is constitutionally a federal, democratic, social, legal State of justice, autonomous and sovereign; its federal capital and the seat of the Nation’s powers is the city of Caracas.

In 1958, the democratic process began in Venezuela with the fall of the military dictatorship that had controlled the country for a decade. The political system established at that time was a representative democracy, whose objectives of democratization and institutional modernization produced, as one of their positive effects, the consolidation of middle professional classes and higher education as a mechanism for social ascent, all of which was evidenced in a more than 100% increase in higher education registra-
tion from 1975 to 1995 (Centro Interuniversitario de Desarrollo, 2007). However, this increase was not enough to cover the entire demand for entering a university.

It was also true that, for 1998, the gross registration rate was less than 36% of the population at higher education entrance age, placing the country below the percentage conventionally accepted as indicating a medium massification level (between 36% and 45% of the population at higher education entrance age). This means that two-thirds of that population (more than 64%) were excluded (Centro Interuniversitario de Desarrollo, 2007). In 1998, a total of 259,340 high-school graduates requested admittance to higher education, of which the Consejo Nacional de Universidades-CNU (National University Council) assigned places to only 16,552, representing 6% of the demand (D'Elia et al., 2006).

In 1998, the current government came into power; from its beginnings, it proposed the reorganization of institutions and a new legal and administrative structure that became a reality when the National Constitution was approved in 1999. Its text contemplates that the political system will be a participative democracy, one of whose basic principles is inclusion to overcome all kinds of social, economic, territorial and political discrimination. It should be emphasized that public policies should respond, principally, to a new socialist ethic, to protagonist revolutionary democracy, a socialist productive model, and new national and international geopolitics, within the framework of the Proyecto Nacional Simón Bolívar. Primer Plan Socialista (National Simón Bolívar Project. First Socialist Plan) (Gobierno Bolivariano de Venezuela, 2007a), according to which the general lines of the economic and social development plan for the country are drawn up. The goal of these public policies is to obtain endogenous development based on a change in the country's productive system, so that each region will be able to transform its natural resources into goods and services that multiply employment and social well-being and guarantee the quality of life for people and the environment, without affecting the development capacity of future generations.

As mentioned in the previous paragraph, the endogenous development approach or development "from within" (Sunkel, 1995) is one of the concepts that guides public State policies in
Venezuela. This concept, reflected in legislation and official documents, is a version of integrated development: endogenous, sustainable and human, and is expressed in the Plan Nacional de Ciencia, Tecnología e Innovación 2005-2030 (National Plan for Science, Technology and Innovation 2005–2030) (Gobierno Bolivariano de Venezuela, 2005). This development paradigm values the people's own realities and capacities, emphasizes the central role of communities, their concrete conditions, and understands territory as the space within which the local criteria that define people's expectations for achieving development are built.

Such a development paradigm implies that, corresponding with institutional reorganization and in order to forward the success of the revolutionary and socialist political process, the existing higher education institutions ought to overcome their inherent weaknesses and failings, which are considered genuine obstacles to achieving endogenous development. These obstacles were expressed as the exclusion of less economically favored sectors of populations living in communities far from large cities and as professional training that has only a slight or null impact on what is local and regional.

THE VENEZUELAN HIGHER EDUCATION SYSTEM: STRUCTURES AND LEGAL FRAMEWORK

In 1970, the current Ley de Universidades was approved as a reform to the previous law of 1958, which responded to the special political conditions belonging to an emerging democracy established the year after the fall of the military dictatorship headed by General Marcos Perez Jimenez. The reform in the 1970s obeyed the indubitable aim - even though it was not expressly declared - of legitimizing greater State control of the universities, which had been intervened by radical leftist activism, were aggressively opposed to the government and, in turn, violently persecuted by it. This reform constituted a stellar moment in public policy for higher education, due, among other things, to its repercussion on the system’s diversification, which already included the universities and other tertiary education institutions, even though there were no connections between them.

While the 1958 law was in force, there were three autonomous universities in Venezuela, i.e. public universities financed by the State
but that enjoyed full autonomy for designing and executing their academic policies and democratically electing their authorities, and two private universities. One of the changes the 1970 reform to the Law introduced was related to the creation of "experimental universities" that were not autonomous, but directly dependent on the State in terms of financing as well as for the appointment of their authorities, "...in order to try out new orientations and structures in Higher Education" (República de Venezuela, 1970: 5).

At the same time, this reform authorized the creation and functioning of institutes and colleges as institutions of higher education dependent on the Ministerio de Educación-ME (Ministry of Education), specialized in one or two areas of knowledge, and that offered short majors of two to three years, different from university majors whose length was 5 to 6 years. The creation of these institutions responded to pressures from the entrepreneurial sector of the country, interested in forming technically trained human resources capable of being incorporated in the industrialization process within the framework of policies for substituting importations and the objective of democratization undertaken by the Venezuelan State (Tovar, 2004). Their effects on the educational sector were already being expressed in a significant increase in graduates from middle or secondary education who, until that moment, had only one possible solution for continuing their studies: the university.

Therefore, with this legal reform, a solid beginning was given to a process of differentiating higher education institutions whose model continued to be the traditional university, despite the fact that the majority of the institutions created from then on did not have the autonomy enjoyed by the autonomous public universities that existed before the law of 1970. This process of differentiation gave rise to a system segmented according to a binary model shown in Table 1 and containing:

- The national autonomous universities (official): they had academic, organizational, administrative and financial autonomy, although they depended on the government for funds.
- The national experimental universities (official): they had academic autonomy. They were conceived as an alterna-
tive model vis-à-vis the traditional autonomous university. They were run directly by the government;

- The private universities; and

- Technological institutes and university colleges (official and private): three years training.

Table 1
Higher Education System According to the Ley de Universidades (1970): Binary Model

<table>
<thead>
<tr>
<th>OFFICIAL</th>
<th>PRIVATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNIVERSITIES</td>
<td>Autonomous. Different Fields.</td>
</tr>
<tr>
<td></td>
<td>Experimental.</td>
</tr>
<tr>
<td>OTHER POSTSECONDARY INSTITUTIONS, DIFFERENT</td>
<td>Technological Institutes.</td>
</tr>
<tr>
<td>FROM UNIVERSITIES</td>
<td>Technological Institutes.</td>
</tr>
<tr>
<td></td>
<td>University Colleges. University Colleges.</td>
</tr>
</tbody>
</table>

Source: República de Venezuela, 1970.

According to the Ley Orgánica de Educación (Organic Law of Education) of 1980, all these institutions were given responsibility for the "... process of the integral formation of man..., "... the training of professionals and specialists..., "... the encouragement of "... research..." and the diffusion of "... knowledge to elevate the cultural level... of society..." (República de Venezuela, 1980: 11), objectives intended to ratify this variety of institutions as the ideal mechanism for social ascent. The major function of universities in this model was, as stated before, to train professionals. The modest university research that was carried out focused on satisfying personal interests of the researcher or, in the best-case scenario, on the imperatives of the financing organization.

This condition of the higher education institutions was assumed for Venezuelan State policy objectives (1958-1998), oriented toward the modernization implicit in a developmental economic model adopted for the Venezuelan Government at that time; however, it turned out to be contradictory to the socialist model the government proposed to implant starting in 1998, which takes endogenous development as the keystone for guiding public policy.
In 2002, a process of transforming the Higher Education System began. Its first step was to create the Ministerio de Educación Superior-MES (Ministry of Higher Education) in that year, which was later renamed Ministerio del Poder Popular para la Educación Superior-MPPES (Ministry of Popular Power for Higher Education) and is currently called Ministerio del Poder Popular para la Educación Universitaria-MPPEU (Ministry of Popular Power for University Education). The MPPEU is the organ of the National Executive in charge of the strategic direction of Venezuelan higher education. It directs the National Higher Education System, and its responsibility is to formulate, adopt, follow-up on and assess the policies and actions directed toward guaranteeing quality higher education for everyone, which constitutes a strategic factor for strengthening popular power and constructing a socialist, democratic, participative and protagonist society (Gobierno Bolivariano de Venezuela, n.d.).

In November, 2003, the Misión Sucre (Sucre Mission) was established to use all available resources for paying what was considered the social debt accumulated with all those people who had been denied the right to enter a higher education institution. The missions -like the aforementioned Misión Sucre- are social programs designed under a participative concept, begun in 1999 (although executed with greater emphasis since 2003), and intended to give effective answers to priority needs for education, health, food, housing and employment that remain unsatisfied despite being the responsibility of formally instituted government structures (ministries).

The missions are departure points for forming a new generation of social policies that have been called the new institutionalism and that "seek to make a partial by-pass of official bureaucracy to respond to the principal social problems that, having been identified as critical, need urgent responses" (Lander, 2004). The missions add operability to the functioning of the State because, first, they operate with resources specially assigned to them whose management is not subjected to a heavy procedural chain in the public administration; second, their staff follows direct instructions from the national executive and does not suffer from the resistance and administrative vices that go along with State bureaucracy; and third, they facilitate the ideological expansion and legitimation of the government project.
The Misión Sucre was the strategy that implemented the political policy for the Municipalization of Higher Education for which "University Villages" were established in all the municipalities of the country and hundreds of thousands of students were incorporated in that system. The municipalization strategy will be amply explained in the succeeding chapters. The Misión Sucre goals were:

- to prepare 6,000 spaces (classrooms) across the entire nation, appropriate for academic activity;
- to incorporate 300,000 new high school graduates into a Programa de Iniciación Universitaria (University Initiation Program) in 2003; and
- to incorporate 300,000 new high school graduates without possibilities for admission to current universities into the Programa de Iniciación Universitaria between March and September, 2004.

In September, 2005, the Misión Sucre was academically integrated into the Bolivarian University of Venezuela (UBV), retaining only administrative responsibilities.

In 2003, the Venezuelan Government created the UBV inspired by a model whose most important principles are: public responsibility, social equity, participative democracy, quality and innovation, social relevance, critical thought, humanistic education, ethics and life-long training. This new university model should be oriented toward improving the knowledge contribution to sustainable and endogenous development. Based on such principles, this university appears to break with the university model that existed in Venezuela before the UBV. For that reason, this institution was included in the case studies - the center of our research - as a representative of the emergent university model, which also includes universities generated by the Misión Alma Mater.

The Misión Alma Mater was born in 2007 to induce the transformation of higher education, impel its territorial integration as well as its integration with the national development project, encourage popular power and the construction of socialism, guaranteeing the rights of all to a quality higher education (Ministerio del Poder Popular para la Educación Universitaria, 2010). Through this Mission, 57 new universities are to be created. The new Venezuelan Higher Edu-
cation System includes: the transformation of 29 Official University Colleges and Institutes into National Experimental Universities; the creation of 17 Territorial Universities; 10 Specialized Universities; 2 Specialized Institutes; the Universidad Bolivariana de los Trabajadores “Jesús Rivero” (Bolivarian University of Workers “Jesús Rivero); the Universidad Nacional Experimental de los Pueblos del Sur (National Experimental University for Peoples of the South); and strengthening the territorial coverage of university education through the Complejos Universitarios Socialistas Alma Mater- CUSAM (Alma Mater Socialist University Complexes).

In brief, the current system, called university education, is composed of four institutional types (See Table 2):

- Universities, among which there are four subtypes: Autonomous, National Experimental, Territorial and Specialized. The two first subtypes are inherited from the preceding higher education system and were already defined in this chapter. Territorial Universities are conceived as institutions linked to the vocational and productive, social and cultural needs of determined territorial spaces (cities, states, functional districts, federal provinces), destined to democratize access to university education and dynamize endogenous development.

Specialized Universities are set up as national networks with nuclei and connections to the Territorial Universities; they develop strengths in certain areas of knowledge, and their

<table>
<thead>
<tr>
<th>Table 2</th>
<th>Current Venezuelan University Education System</th>
</tr>
</thead>
<tbody>
<tr>
<td>INSTITUTIONS</td>
<td>OFFICIAL</td>
</tr>
<tr>
<td>UNIVERSITIES</td>
<td>Autonomous.</td>
</tr>
<tr>
<td></td>
<td>Experimental.</td>
</tr>
<tr>
<td></td>
<td>Territorial.</td>
</tr>
<tr>
<td></td>
<td>Specialized.</td>
</tr>
<tr>
<td>OTHER POSTSECONDARY INSTITUTIONS, DIFFERENT FROM UNIVERSITIES</td>
<td>Specialized Institutes.</td>
</tr>
<tr>
<td></td>
<td>CUSAM.</td>
</tr>
</tbody>
</table>

main advantage is the concentration of human talent to support training programs and form communities for research and social appropriation of knowledge.

- Specialized University Institutes, created to promote integral and professional training and to develop competences in a specific technical area.
- University Colleges, which are inherited from the preexisting higher education system, are oriented to offer majors of two to three years.
- Complejos Universitarios Socialistas Alma Mater or CUSAM, which are a set of integrated spaces, services and resources for university activity, located in strategic sites where the programs of diverse university education institutions converge in order to share, optimize resources and guarantee that the different universities of the country broaden their activities of training, research and technological development into physical spaces beyond their campus. Essentially, they constitute community power spaces for endogenous development of the locality and the satisfaction of training needs identified by the community itself (Ministerio del Poder Popular para la Educación Universitaria, 2010).

Together with the reconfiguration of the so-called University Education System, it is indispensable to point out the ratification of various laws that have a bearing on the regulation and functioning of said system and that will be referred to repeatedly in this book.

The first of these is the Ley de Servicio Comunitario del Estudiante de Educación Superior (Law of Community Service Activities for Higher Education Students), which was promulgated in 2005. According to this law, students at higher education institutions are obliged to fulfill a minimum of one-hundred twenty (120) academic hours of community service as a requisite for graduation. Community service is understood as the activity that students who are following professional training courses should complete in the communities, applying scientific, technical, cultural, sports-related and humanistic knowledge acquired during their academic training to benefit the community. Through their participation, they cooperate in fulfilling the goals of social well-being, according to
what is established in the National Constitution (República Bolivariana de Venezuela, 2005a).

The second is the Ley Orgánica de Ciencia, Tecnología e Innovación-LOCTI (Organic Law for Science, Technology and Innovation), also approved in 2005, which imposes a contribution between 0.5 and 2% of the gross income of companies dedicated to producing goods or rendering services in the country for investment in science, technology, innovation and its applications (República Bolivariana de Venezuela, 2005b). This law is fundamental for the Higher Education System because, in Venezuela, the aforementioned activities are fulfilled principally at the autonomous universities. This aspect will be dealt with more broadly in Chapter III under the subtitle "Relation of the University to the National Project for Science and Technology and other Crucial State Plans."

Nevertheless, it is important to point out that the administration of resources derived from the legal dispositions of LOCTI have a bearing on the financial autonomy of the universities since, according to Resolution 021 (Ministerio del Poder Popular para la Ciencia, Tecnología e Industrias Intermedias, 2009), it corresponds to the Fondo Nacional de Ciencia, Tecnología e Innovación-FONACIT (National Fund for Science, Technology and Innovation) to receive and administer the funds contributed under LOCTI.

The third Law is the Ley Orgánica de Educación-LOE (Organic Law of Education), approved in 2009 (República Bolivariana de Venezuela, 2009). This law states that the university education subsystem is part of the national educational system (Art. 25, letter b, ejusdem); and introduces some substantive changes that affect the preexistent university model, particularly related to the notion of autonomy and the way university government is elected. The respective observations will be dealt with under the corresponding titles in successive chapters.

According to this law, the definitive structure of the system is subject to the approval of new special laws that are still pending.

**METHODOLOGY**

The research was centered on case studies, which include three official universities, as a representative sample of the model
existing in Venezuela before the creation of the UBV in 2003, and institutions that represent the appearance of a new form of university. Our study does not include private universities, although a significant number of institutions belong to this sector. The main reason is that, compared to the institutions chosen, their impact in terms of research activity performance, enrollment and the diversity of majors offered is not significant.

In this book, the term "preexistent university model" will be used for the model represented by universities with history and tradition in Venezuela, several of them a hundred or more years old and active before 2003, the year in which an aggressive governmental policy for transforming higher education in this country was initiated. The term "emergent university model" will be used for the model represented by the institutions created as a result of that policy and includes the UBV and many other universities grouped around the Misión Alma Mater. In these latter universities, policies have been developed that delineate a new model that does not coincide with characteristics of the traditional university institution; the description of these innovative aspects is, to a great extent, the motive for this book.

The four universities included in these case studies are identified in Table 3.

### Table 3

<table>
<thead>
<tr>
<th>UNIVERSITIES</th>
<th>ACRONYM</th>
<th>YEAR FOUNDED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universidad Central de Venezuela</td>
<td>UCV</td>
<td>1771</td>
</tr>
<tr>
<td>Universidad del Zulia</td>
<td>LUZ</td>
<td>1891</td>
</tr>
<tr>
<td>Universidad Experimental &quot;Simón Bolívar&quot;</td>
<td>USB</td>
<td>1967</td>
</tr>
<tr>
<td>Universidad Bolivariana de Venezuela</td>
<td>UBV</td>
<td>2003</td>
</tr>
</tbody>
</table>

Source: Authors.

Selection of these universities was based on the fact that the UCV and LUZ are two of the largest and oldest official, autonomous universities in the country, while the USB is an official but experimental university, since its organization and flexible functioning
permit educational experimentation. These three institutions emphasize research and technology in their mission and vision, although two of them (the UCV and LUZ) also have a significant humanistic component (Villarroel, Valbuena, Contasti, Salinas, Machado and Cortázar, 2002). The selected institutions are outstanding in Venezuela when comparing graduates, research budgets, publications and number of researchers certified by the Programa de Promoción del Investigador-PPI (National Program for Promoting Researchers) on a national level.

In addition to the case studies, a theoretical review of relevant themes for achieving the research objectives was also performed, including: the history, conception, evolution and functions of the university institution in the world and in Latin America; human, endogenous and sustainable development; educational processes as drivers of integral well-being for the people; and surveys of institutional sources such as university laws and regulations, statutes, foundational documents, bulletins, instructional papers, resolutions and agreements.

Academic practices of the two models were irreconcilable to common variables and the classical indicators applied to higher education; therefore, it was necessary to construct a Theoretical Model that allows us to think, discuss and produce concepts and analyses in a double code of meanings: that of the UBV and the other institutions created nowadays by the Misión Alma Mater, and that of traditional universities in the country. It is interesting to note that the construction of this Theoretical Model (fully developed in Chapter II) led us to incorporate alternative notions representing innovative dynamics and practices belonging to the emerging model, whose presence and significance are ignored or underestimated by the classic conceptual tools and indicators used by the international scientific agenda.

Conventional indicators refer to aspects such as publications in high-impact journals, international prizes for academic personnel, patents, inscription in international rankings, and quantitative magnitudes regarding number of students, number of laboratories and libraries, number of majors and postgraduates programs. These reflect only "half of the photograph" (the one following the mainstream of science) but keep the "dynamics and practices" of
universities linked to the contextual problems of developing countries in the shadows. For example, they leave the recognition of popular or everyday ways of knowing and the incorporation of extra-university actors in the production and reproduction of science outside of their recording and measurement spectrum. These aspects are included in our Theoretical Model.

With the help of the Theoretical Model, we proceeded to identify and apply research techniques and instruments, qualitative as well as quantitative, to exhaust the comparative research phase between the two models under analysis. These techniques are illustrated in the graphic representation of the methodological model (See Graph 3).

Graph 3
Methodological Process

Validity: Variety of Techniques and Informants, Socialization with Academia, with Actors at the Scenes of Investigation and with the Counter Team, Triangulation, Saturation and Theoretical Sampling.

Source: Authors.

The quantitative techniques dealt with some conventional indicators such as total and research university budgets; number of research projects; number of indexed scientific journals; number of research, extension and community service projects;
number of patents; number of university research projects financed by private firms; number of agreements between universities and the external sector; number of university locations; number of innovative training programs; number of students enrolled in the last five years; and number of international students, among others (See Annex A). It is necessary to clarify that the information records corresponding to these indicators in Venezuela and Latin America are incomplete, out-of-date and inconsistent. Data supplied by different official sources were often dissimilar, even though they indicated tendencies that made the corresponding analyses feasible.

The qualitative strategies were based on: content analysis (semantic and pragmatic dimensions) of official university documents; 10 focus groups with university students (See Annexes B and C); and 23 in-depth interviews with university academic staff and high government officials in the Higher Education and Science and Technology systems (See Annexes D and E). Interviewees were selected based on their experience and involvement with Higher Education and Science & Technology activities.

A novel strategy developed during this research was the participation of a counter team, consisting of a group of qualified peers with whom we shared the conception, progress and results of the study. The counter team was composed of three higher education experts: one Advisor from the Ministro de Ciencia, Tecnología e Innovación (Minister of Science, Technology and Innovation) and Coordinator of ORUS (International Observatory of University Reforms) Venezuelan Chapter; the second member of the team was the First Rector of the UBV and former Director of the Misión Alma Mater; and the third, was a researcher from the Instituto de Altos Estudios en Administración-IESA (Institute of Higher Studies in Administration). These associations with other researchers permitted validating and enriching the discussion, the analysis and the results.

The credibility, transference, consistency and confirmation of the results (Lincoln and Guba, 1985) derived from the activities and techniques reflected in Table 4.
Table 4
Activities and Techniques Related to Credibility, Transference, Consistency and Confirmation of Results

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Adaptation to the Project</th>
</tr>
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<tbody>
<tr>
<td><strong>Lincoln and Guba (1985)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Credibility</strong></td>
<td>To work on each thematic axis, varied data collection techniques were used at different times and with diverse actors until reaching theoretical saturation for each of the essential aspects. The results were verified by actors from the institutions under study and by peers (counter team and others).</td>
</tr>
<tr>
<td><strong>Transference</strong></td>
<td>The defined thematic axes and essential aspects were observed in different university institutions, selecting more than one case or informant in each context, through which a comparative representation was obtained for similarities and differences.</td>
</tr>
<tr>
<td><strong>Consistency</strong></td>
<td>Constant comparison and the triangulation of techniques, data, researchers (Martínez, 1999) and evaluators were used to elucidate the convergence or divergence of the results and the existing state of the art in the subject.</td>
</tr>
<tr>
<td><strong>Confirmation</strong></td>
<td>Validation communities were set up with members of the counter team and other researchers in the Departamento para el Estudio de la Ciencia (Department for the Study of Science) at the Instituto Venezolano de Investigaciones Científicas-IVIC (Venezuelan Institute of Scientific Research) and the Universidad del Zulia (Doctoral and Postdoctoral Program in Human Sciences), and meetings and workshops were held to complete the return of meanings to the actors.</td>
</tr>
</tbody>
</table>
LOOKING FOR A NEW FORM OF UNIVERSITY: FINDING PLURAL FORMS OF UNIVERSITIES

Our theoretical and methodological journey led us to the conviction that the search for one university model for Latin America (and the South of the planet) was a useless effort, because the complexity and celerity with which the higher education systems in these regions configure and reconfigure, following concepts and orientations that may even be contradictory, impede realizing the dream of an ideal model worthy of being reproduced. Nevertheless, the need persists to count on analytic resources that make it possible to comprehend the successive, constant changes experienced by the Latin American university, as a mechanism for keeping in tune with the new realities imposed by the knowledge society and the urgency of overcoming underdevelopment.

Our Ariadne's thread, inspired by the case of Venezuela, led us to the conclusion that a plurality of concepts was the ideal notion to be applied to universities in developing countries. To describe this plurality, we have constructed an alternative framework for mapping the complex variety of higher education institutions that exist or are being created for developing countries, which will be explained in chapter IV.

We invite the reader to join our journey, which continues with the exposition of our Theoretical Model in the following chapter.
CHAPTER II
AN ALTERNATIVE THEORETICAL MODEL TO COMPREHEND THE NEW ROLES OF THE UNIVERSITY IN DEVELOPING COUNTRIES

Near the threshold of the twenty-first century, the codes and referents used to approach and study higher education are uncertain; notwithstanding, it is taken for granted that higher education institutions have a strategic role in knowledge production to promote development in the southern countries.

Traditional approaches to understanding higher education and its role in society seem insufficient, and a reconstruction of analytic and conceptual resources has arisen to improve the study of the challenges higher education faces in relation to the so-called knowledge society. One of the most important challenges is that higher education has stressed scientific and social commitment, while the traditional academy was expected to create basic knowledge. Twenty-first century trends demand the production of useful knowledge and claim that higher education should be responsible for solving relevant community problems.

Today, university training and scientific research activities take great care to respond to national social and scientific development plans, which were unknown or simply disregarded by higher education institutions less than a decade ago, especially in less developed countries.

At present, the trend in knowledge production is to reflect contextual problems and, consequently, recognize the layman as a producer of knowledge and indigenous or local wisdom that is equally legitimate and useful (Gallopin and Vessuri, 2006); higher education in advanced and some developing countries rejects dis-
ciplines to situate itself in global and local contexts that generate the incorporation of reality and people’s needs in university research.

In this milieu, new university-related actors, such as communities and other stakeholders, appear; and the roles of old actors, such as professors and students, are challenged by the knowledge society and new forms of knowledge production.

Another challenge higher education faces today is the tension between equity and quality. As we will argue in Chapter IV, association between the two is not automatic but stems from establishing quality as a previous and necessary condition for accomplishing equity. As a result, public policies that promote equitable access to and successful participation in higher education will only be successful to the extent that they guarantee quality learning in universities and other higher-education institutions.

It is also important to mention the world-wide claim on public and universal higher education vis à vis marketization and internationalization trends, due to globalization and the increasingly commercialized way in which higher education is being treated. Indeed, there are two world-wide contradictory orientations: the first, which is prevalent in Latin America, Africa and Asia, supports State financing and public management of higher education, and the second, predominant in Europe and North America, sustains the increased commodification of higher education.

In this chapter, we present a Theoretical Model that was at the core of our research. It was constructed to envision how all these challenges and trends should be considered in order to understand contemporary higher education; therefore, it introduces categories that reflect novel, alternative dynamics and practices in universities and, in this way, expresses whether or not a new model is taking shape in and for the South.

The Model includes three analytical elements: thematic axes, essential aspects and key features.

The thematic axes highlight the main issues we considered important for understanding university dynamics, since they would make it possible to approach the new university model as well as the traditional one. The thematic axes are:
1. Knowledge production
2. Concept of the university
3. Relation of the university to its surroundings for knowledge production.
4. University actors.

Each thematic axis was disaggregated into essential aspects that define critical insights about the university related to the respective axis. The third analytical element of the model is what we call key features, defined as the dimensions to which we look in order to illustrate, evaluate and/or organize the axes as well as the essential aspects.

**FIRST THEMATIC AXIS: KNOWLEDGE PRODUCTION**

Higher education institutions were originally created, at least in the western world, to satisfy two social demands: first, the creation and preservation of scientific and humanist knowledge, and second, formation of the elite based on the monopoly of knowledge. Since the creation of the first universities in the Middle Ages, the emphasis placed on one or the other of these functions defined their dynamic to a great extent.

Nevertheless, although both roles have been present throughout the history of the university, the nature of their fulfillment has been altered due to the rise and later strengthening of capitalism in the world. The mission of the university ceased to be the formation of civil and ecclesiastic staff or lawyers and doctors, to dedicate itself to training professionals who would enter a job market that corresponded to organizing capitalist production to provide goods and services. This change in the university’s mission brought the consequence that the knowledge produced therein ceased to have value in itself and acquired a simple utilitarian value as an input used by industries. These changes were accentuated in the twentieth century with an increase in the demand for greater instrumental training opportunities to satisfy market growth, scientific and technological development and new social scenarios.

Within the ambit for creating scientific and humanistic knowledge, the university maintained its hegemony for centuries. Its institutional organization and structure responded to the dy-
namic proposed by “Mode 1” of knowledge production, based on the specialization of disciplines, the distinction between basic and applied knowledge, between the theoretical base and other areas of knowledge, where theory is translated into practice (Gibbons et al., 1994).

This description of “Mode 1” coincides in principle – although from a different perspective – with what De Sousa Santos (2005) calls “university knowledge,” understood as the knowledge production model predominant throughout the twentieth century, whose overwhelmingly disciplinary and de-contextualized character stands out in relation to the everyday needs of societies.

The practice of this “Mode 1” or “university knowledge” has its epistemological base in positivism, whose principles prevailed in nineteenth-century scientific and philosophical thought and left their imprint on the university environment in the industrialized world as well as in underdeveloped countries.

However, in the last two decades, profound alterations have occurred in the relation between knowledge and society. These alterations have been the consequence, among other things, of the impact of the globalization process on the university – the intensive use of new communication technologies, internationalization and the introduction of free market principles, which have modified not only the organization of research, but also the disciplinary structure and curriculum.

A transition toward “Mode 2” of knowledge production has thereby been generated (Gibbons et al., 1994). It implies an alternate rationality for transforming higher education by incorporating practices that are less abstract, less connected to disciplinary divisions and closer to processes characteristic of diversity and knowledge production distribution in complex societies. This description of “Mode 2” coincides, in part, with that De Sousa Santos (2005:45) calls “pluriuniversity knowledge” whose most outstanding trait is that “…the organizing principle of its production is the application that can be given to it.”

Table 5 presents the Essentials Aspects and Key Features included in the First Thematic Axis.
Table 5  
**Essential Aspects and Key Features of the First Thematic Axis: Knowledge Production**

<table>
<thead>
<tr>
<th>Essential Aspects</th>
<th>Key Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientific research</td>
<td>Gnoseological approach.</td>
</tr>
<tr>
<td>Formative research</td>
<td>Knowledge production mode.</td>
</tr>
<tr>
<td>Technological innovation</td>
<td>Project concept.</td>
</tr>
<tr>
<td>Transfer of technology &amp; social appropriation of knowledge</td>
<td>Insertion of knowledge into reality.</td>
</tr>
<tr>
<td></td>
<td>Spaces for knowledge production.</td>
</tr>
<tr>
<td></td>
<td>Actors competent for knowledge production.</td>
</tr>
<tr>
<td></td>
<td>Relationship of university research with the national project for science &amp; technology and other crucial state plans.</td>
</tr>
<tr>
<td></td>
<td>Destination for research results.</td>
</tr>
</tbody>
</table>

Source: Authors.

**Essential Aspects of the Knowledge Production Axis**

**Scientific Research**

According to the positivist tradition, scientific research is defined as a process that:

…whether in education, physics, anthropology, molecular biology, or economics, is a continual process of rigorous reasoning supported by a dynamic interplay among methods, theories, and findings. It builds understandings in the form of models or theories that can be tested. Advances in scientific knowledge are achieved by the self-regulating norms of the scientific community over time… (Shavelson and Towne, 2002: 2).

Based on this concept of research, science is assumed to be objective and value free. Science constructed in this way is an exclusively academic task and its connection with public policy design is circumstantial. The limits of scientific research are clearly established and guaranteed in an unequivocal and neutral manner.
by the “scientific method” (Van den Hove and Sharman, 2006). It is obvious that this concept matches perfectly with the traditional view of knowledge handled by the universities under Mode 1 of knowledge production.

The Theoretical Model presented in this chapter conceives scientific research from two points of views. On the one hand, it is a process of searching for new knowledge characterized by the creativity of the act, the innovation of ideas, the rigorous methods used, the possibility of validation and critical peer review. On the other hand, the Model also works with a broader, contemporary notion of scientific research that is more connected with the “alternative or heterodox” knowledge production mode and is neither organized nor recorded according to conventional codes used in international scientific research. In this second concept of scientific research, knowledge is considered a collective (social) output resulting from daily activities completed outside university premises (in the communities) with several actors from specific socio-cultural contexts. This definition makes the origin of knowledge both scientific and experiential. It is clear that this concept matches better with the non-traditional view of knowledge handled by the universities under Mode 2 of knowledge production.

**Formative Research**

Formative research is a process in which knowledge production and learning are interwoven in a dynamic that does not distinguish among researcher-student-community, orienting its work toward solving contextual, everyday problems. In this sense, it implies a cognitive generation process that is less strict, less formal and also committed to the development of new knowledge or new technology. In accord with the aforementioned and considering that the university maintains the dual role of training and research, the proposed Theoretical Model also incorporates the notion of formative research as an essential aspect of the knowledge production axis. Incorporation of this notion in the university learning process implies breaking with the credentialist and transmissive teaching model belonging to underdeveloped countries, whose universities adopted the professionalizing model, making them a usually defective replica of the metropolitan university model.
Formative research was first mentioned in the second half of the 1990s as the type of research carried out between students and teachers in the process of developing a curricular program. It is likened to learning by discovery and the construction or organization of knowledge. Starting from a problem, the student seeks, investigates, reviews similar situations, examines related literature, collects data, organizes it, interprets it and announces solutions. Thus, he/she constructs and systematizes knowledge or learning even though it already exists. To this view of learning is added a permanent, active contact with reality as well as the recognition of new actors involved in the process.

The concept of formative research given above is not univocal, as will be explained. On the one hand, it gives a preponderant role to the student, who is prepared, through the activities developed in this type of investigation, to understand and advance scientific research; on the other hand, it also refers to the formation, structuring or refinement of research projects; and finally, the term also relates to the formation or positive transformation of a program or practice during the realization of one or the other, as in the case of action-research. Thus, three different applications are derived from the notion of formative research: training the student in and for research, giving form to research projects, and developing a social practice or program from a research process.

**Technological Innovation**

Corresponding to the traditional concept of scientific research, technological innovation is considered to include:

...all of the scientific, technological, organisational, financial and commercial steps, including investments in new knowledge, which actually, or are intended to, lead to the implementation of technologically new or improved products and processes (Organisation for Economic Co-Operation and Development, 2002: 17).

In postwar industrialized countries, this traditional concept of technological innovation implied the development of “...a sequential process which would gain in efficacy and speed (the famous ‘time to market’) if each activity (from testing the feasibility of concepts, to pi-
lots and demonstrators, to prototypes and to industrialisation) was optimised” (Laredo, 2007: 4). The previous idea constituted the classic version of the linear technological innovation model, where each participating entity in the process rigorously fulfilled its part “at arms’ length” (Leydesdorff and Etzkowitz, 1998) from the others in “…a practically unidirectional process that begins in basic research and ends with the use of the technology by the productive sector” (Ávalos, Rengifo and Merchán, 1980:1), and in which no interface between the involved sectors is produced.

In less-developed countries, the adoption of this “linear model” for technological innovation did not find an appropriate scenario for its complete adoption in the internal socio-political ambit. Structural and historic conditions limited development of the levels of competiveness necessary for producing the flow of knowledge from its creation until its incorporation in the market, favoring the adoption of technologies produced in other contexts. These conditions are linked to locating research practices almost exclusively in the university context, which “…provides the guidelines about what the important problems are, how they should be tackled, who should tackle them, and what should be regarded as a contribution to the field” (Gibbons, 1997: 2).

Furthermore, even though, in the ideal realm, scientific research and the technological innovation derived from it characterized the insertion of universities from the South in the knowledge production process and marked their hegemony in this area when underlining university knowledge as scientific knowledge *par excellence* (De Sousa Santos, 2005), what occurred in reality was that the scientists were interested in their scientific reputation and the knowledge itself more than in the economic value it might have. Application of the scientific knowledge produced (and therefore, its potential for converting itself into technological innovation) became a variable independent from the immediate interests of the scientific community.

Consequently, the capacity for technological and scientific innovation became one of the greatest sources of asymmetry between the central countries and the peripheral or semi-peripheral countries (Vessuri, 1984). The isolated generation of knowledge is not the key to development. The capacity to use it or, what is the same idea, the capacity to apply it is required.
In contrast to the concept of technological innovation described above, “Mode 2” (Gibbons et al., 1994) or “pluriuniversity knowledge” (De Sousa Santos, 2005) proposes the transfer of technology and the social appropriation of knowledge. According to this proposal, knowledge production is generated in a context where it has a practical application that benefits not only the researchers, but also other actors, since it responds to interests shared in defining the problems to be solved and their most relevant aspects, about which agreements are generated between researchers and users.

This process produces what the “triple helix model” (Leydesdorff and Etzkowitz, 1998) describes as the intersection and interdependence of three helixes: university-industry-government and the rise of an “academic revolution” that implies incorporating the economic mission of the university in a spiral movement that passes through the three spheres (university-industry-government) and causes repercussions in society as a whole. As Röpke (1998:2) argues: “doing first-class research is not sufficient for excellence in innovation.” University research must combine and communicate with industry and government to contribute to economic development.

In this sense, while Gibbons et al. (1994) and Leydesdorff and Etzkowitz (1998) assume technological transfer to be a commercialization mechanism for the knowledge produced, which benefits the position of industries and business in general in a highly competitive market, De Sousa Santos (2005) emphasizes that during the process, dialog and confrontation with other types of knowledge are produced. Therefore, knowledge ceases to be exclusive to one social sector or group because it is socialized and appropriated by the communities, which participate actively in constructing knowledge for taking care of their everyday problems. This explanation distinguishes between private and social appropriation of knowledge.

Technological transfer is a notion associated with private appropriation of knowledge. The latter is based on a dimension known as appropriable technologies, which play a very important
role in diverse production sectors and constitute a legitimate form of transfer. These technologies have played a dynamizing role in technical change, since they represent one of the strongest motivations for the private sector to invest in technological research and development.

When technological research and development generate public goods or knowledge that can become public goods, the latter can be freely used by society or by those social sectors interested in them. It is here that the social appropriation of knowledge takes place. This is true in the case of the social sciences as well as the basic sciences or in the production of tangible or intangible goods. While social appropriation of knowledge refers to the creation of “what is public,” private appropriation refers to the development of “technological capacities” that are constructed in a business, a sector or a specific community, based on knowledge accumulated about the surroundings, the market, the natural resources utilized or about production technologies.

The Theoretical Model refers to private appropriation as well as social appropriation of the knowledge generated by research.

The four essential aspects that define the knowledge production axis have been affected by the changes that higher education and, in particular, the university have faced in the last two decades. These changes show that scientific research is in a process of transition toward formative research, because technological innovation is produced in a context separate from scientific research, even though it is derived from it.

On the other hand, the new form of inserting technology into the production of goods and services responds to a process of knowledge transfer and appropriation by those involved: industry, government, communities. Nevertheless, this transition is neither homogenous nor completed, since it is a dynamic process, submitted to two types of tensions: an internal tension that is produced by the distribution of scarce resources, the adjudication of intellectual property, and competition among researchers; and external tension driven by the social and political context to which the institutions relate.

Graph 4 represents the complex relations among the essential aspects in knowledge production.
In synthesis, the explanation of these essential aspects of the thematic axis “Knowledge Production” emphasizes the presence of an epochal-epistemological transition process that, in a broad manner, affects cultural ways of thinking and acting. In a particular way, this transition process affects the contemporary university with such intensity that we are witnessing the rise of a new model, whose understanding requires groundbreaking theoretical tools, that is to say, approaches different from those still used by scholars, governments and institutions with unsatisfactory results. The transition is not a finished process, since interacting tensions remain both inside the educational institutions and with external elements. Analysis of these tensions has been, to a great extent, the inspiration for this book.

**Key Features of the Knowledge Production Axis**

The essential aspects originate diverse key features that make it possible to analyze, assess, contrast and organize interpretation of the dynamic and logic of university functions. The definitions attributed to each of the key features in the proposed theoretical framework are explained below.
**Gnoseological Approach**

This is understood as the position of a university regarding where knowledge originates, how it is produced and who grasps or appropriates reality to constitute it as knowledge. This gnoseological approach is explained in the founding documents of the institution and, therefore, constitutes the normative basis for its functions.

**Knowledge Production Mode**

This is defined in terms of two criteria: first, the definition of priorities; second, the systematization and recording of the advances and findings of the knowledge production process.

Regarding the definition of priorities, the knowledge production mode can be free if each researcher investigates what he/she wants or it can be oriented - also called guided - if each researcher investigates what is declared as priority by the university.

In terms of the criteria for systematizing and recording advances and findings of the knowledge production process, the mode can be scientific if those advances and results are registered according to international science standards; or the mode can be alternative/heterodox when the process is neither organized nor recorded according to conventional codes used in conventional scientific research. The alternative or heterodox mode is also characterized by recovering knowledge and meanings constructed in and from the community (popular), without having this construction obey a systematic process.

**Project Concept**

Although this term has been used traditionally to identify the purpose of research, changes generated in the knowledge production mode demand a double re-conceptualization. Our Theoretical Model works with a strict as well as a broad concept of project.

From the viewpoint of the strict concept, project can be defined as a formal structure that expresses the elements, steps and strategies for generating knowledge according to conventional scientific production standards. The second, broad view of the concept is defined as an organized expression of tasks and prac-
tices ascribed to a university training process that leads to the solution of a concrete problem in a specific community. According to this concept, the project is presented as the organizer for the three classic university functions: research (as a result of the heterodox or alternative production of knowledge mode), teaching, and extension; and emphasizes integration with the community and the recovery of popular wisdom.

**Insertion of Knowledge into Reality**

The Theoretical Model presented in this book proposes two meanings for this key feature. The first refers to the insertion of knowledge in reality as the social relevance of the knowledge produced or the correspondence between the knowledge and the contextual problems. In accord with this approach, knowledge has a direct impact on reality, since it improves the quality of life (including the environment), social welfare and health, economic growth and cultural enhancement. We are referring to the so-called extra-scientific relevance of knowledge, which has been encouraged by international organizations dealing with this important issue.

In that sense, UNESCO states that “Research specifically aimed at addressing the basic needs of the population should be a permanent chapter in every country’s development agenda…” and “Governments, international organizations and research institutions should foster interdisciplinary research aimed specifically at identifying, understanding and solving pressing human or social problems, according to each country’s priorities” (United Nations Educational, Scientific and Cultural Organization, 1999b).

In developing countries, knowledge production activities—although minor—often have intrinsic relevance because they lead to an augmentation of the body of knowledge, an innately valuable and precious quality of civilization; however, they ignore contextual problems because researchers follow the international scientific agenda looking forward to world-wide recognition and prestige. This condition explains why most research-oriented universities in developing countries practice the “ivory tower” model.

For the purposes of this book, it is important to specify the instrumental and innovative social relevance of knowledge pro-
duction activities. Instrumental relevance remits to “the immediate or indirect application of research through the transformation of its findings into practical tools and instruments” whereas innovative relevance suggests “the contribution which scientific research can make to the creation of new knowledge and insights, which may lead to important breakthroughs in the development of industrial products, health measures, transport, communication, entertainment, and many other applications” (Drenth, 2003).

The second meaning of the key feature “Insertion of Knowledge in Reality” refers to popular knowledge that is generated and practiced in a specific social context, but that is not systematized scientifically (ways of knowing not accredited as conventional science).

As we have stated under the key feature “Knowledge Production Mode,” two modes can be differentiated: the scientific and the alternative or heterodox. The former is equivalent to the formal scientific knowledge system and the latter to the traditional knowledge system (Rahman, 2000). The scientific is the dominant mode of knowledge production according to the western positivist paradigm of science.

The heterodox mode “is embedded in the experiences of indigenous or local people and involves intangible factors, including their beliefs, perspectives, and value systems” (Rahman, 2000:2). Some universities in developing countries are including this kind of knowledge in their practices and dynamics; this is relevant for the purposes of our research, since it highlights the emergence of innovative forms of universities.

**Spaces for Knowledge Production**

These are the surroundings in which knowledge production practices are carried out. However, as has been indicated, the university’s loss of hegemony as the exclusive ambit for knowledge production requires establishing what those spaces are. The distinction between Modes 1 and 2 of knowledge production, characterized as university or scientific knowledge, on the one hand, and pluriuniversity or heterodox knowledge, on the other, admits that knowledge is produced in both academic and extra-academic environments. Our theoretical model makes it possible to trace the knowledge-producing activity in communities, companies, industries, factories, SAMES (Small and Medium Enterprises) and farms, among others.
**Competent Actors for Knowledge Production**

According to the traditional concept of science and its production, this task is exclusively the responsibility of “scientists.” However, an understanding of the transition process that knowledge production is undergoing and its impact on the university requires the identification of other subjects that intervene in the knowledge production process to diverse degrees and in diverse moments: professors, students, community members, graduates and communal leaders.

**Relationship of the University with the National Project for Science & Technology and Other Crucial State Plans**

To the degree that the socio-political context assumes a protagonist role in the knowledge production process, it is necessary to study the scope of the correspondence between university practices and projects (for teaching, research and extension or their equivalents) and the macro action plans that express the intentions of political forces related to the government in areas of higher education, science and technology and/or the economic and social development of the nation.

**Destinations for Research Results**

These are the final objectives and settings toward which the research process products are directed. Strictly scientific knowledge production assumes that the final objective of its outputs is their publication and circulation in high impact scientific journals, which in turn, translates into international academic recognition for their authors.

Alternative or heterodox knowledge production procures that its outputs are destined to satisfy some immediate and priority social need. Neither publication nor international prestige are the final ends for this second mode of activity, because its authors are, in many instances, people separate from the university and other academic environments.

To close this first part, we present Table 6, which synthesizes the First Axis: Knowledge Production.
### Table 6
Definitions of Key Features for the First Thematic Axis: Knowledge Production

<table>
<thead>
<tr>
<th>ESSENTIAL ASPECTS</th>
<th>CONCEPTS</th>
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<tbody>
<tr>
<td>Scientific Research. Formative Research. Technological Innovation. Transfer of Technology and Social Appropriation of Knowledge.</td>
<td>The position of a university expressed in its foundational documents or in its practices regarding where knowledge originates, how it is produced and who the subject is that appropriates reality to constitute it as knowledge.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>KEY FEATURES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gnoseological Approach</strong></td>
</tr>
<tr>
<td><strong>Knowledge Production Mode</strong></td>
</tr>
<tr>
<td><strong>Criterion a): Definition of Priorities.</strong> According to this criterion, the mode can be free (each researcher investigates what he/she wants) or oriented or guided (each researcher investigates what is declared as priority by the university).</td>
</tr>
<tr>
<td><strong>Criterion b): Systematization and recording of the advances and findings of the research process according to international science standards.</strong> According to this criterion, the mode can be scientific or alternative/heterodox (the process is neither organized nor recorded according to conventional codes used in conventional scientific research). The alternative or heterodox mode is also characterized by recovering knowledge and meanings constructed in and from the community (popular knowledge) without having this construction obey a systematizable process (Dialog among ways of knowing).</td>
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<tr>
<th>PROJECT CONCEPT</th>
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<tbody>
<tr>
<td><strong>Strict concept:</strong> Formal structure that expresses the elements, steps and strategies for producing knowledge according to conventional scientific production standards.</td>
</tr>
<tr>
<td><strong>Broad concept:</strong> Organized expression of tasks and practices ascribed to a university training process and leading to the solution of a concrete problem in a specific community.</td>
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</table>
SECOND THEMATIC AXIS: CONCEPT OF THE UNIVERSITY

The concept of the university has been the object of discussion and analysis by academics from several disciplines and tendencies who share the idea that defining the term is a difficult task, since external and internal factors have modeled the institution throughout the centuries. Consequently, the concept that society has held until the present has generated complex and disconnected explanations.
from its origin in the twelfth century to our days, when “universities are… subsumed under a broader if less romantic category called ‘higher education’ ” (Rothblatt and Wittrock, 1993: 1).

A general review of university history is necessary to have a clearer idea of how the concept of this institution has been constructed in the world, especially in the ambit of underdeveloped countries and particularly in Latin America. This implies assuming that the concept put forward by the aforementioned countries has not been simply the product of imitation or a copy of a model or idea of university, but has been produced out of the specificity of their historic, political, social and economic contexts (Brunner, 2007), as shown in the genealogy explained in Chapter One.

Table 7 presents the Essential Aspects and Key Features included in the Second Thematic Axis.

<table>
<thead>
<tr>
<th>Essential Aspects</th>
<th>Key Features</th>
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</thead>
<tbody>
<tr>
<td>Social function of the university</td>
<td>Orientation of the university.</td>
</tr>
<tr>
<td>Academic-organizational structure</td>
<td>University government.</td>
</tr>
<tr>
<td></td>
<td>Academic-administrative administration.</td>
</tr>
<tr>
<td></td>
<td>Training model.</td>
</tr>
</tbody>
</table>

Source: Authors.

**Essential Aspects of the Concept of the University Axis**

**Social Function of the University**

There are three classic university functions in the Latin American context: teaching, research and extension. However, at present, the social function of the university is emphasized and understood as an urgent claim that unceasingly questions the three recognized functions.

The previously indicated external forces that have a bearing on the university affect the social function of that institution. In the case
of Latin America and due to the demand for accountability coming from society, universities have passed from being conceived as entities with total autonomy in which rendering accounts is not contemplated, to institutions permanently asked for clarification and continuously questioned under the argument that they do not show a high return on the public investment governments make in them.

Today, financing granted by the State, subsidized by contribution from its citizens, and associated with a benevolent and tolerant relationship, has become increasingly scarce, due to economic restrictions and a growth in the social demand for other public services, such as health and basic education. This is a reality for most universities in the world and is critical for those in underdeveloped countries, where fewer resources are available and political instability often puts the continuity of public policies in doubt. In any case, there is a re-adjustment of the relationship with the State and society, based now on the university responsibly assuming its decisions and the effects these can have on collective life.

Such a situation places limits and conditions on the autonomy the institutions have enjoyed in Latin America and the rest of the world: autonomy to administrate their resources, organize their functions internally (especially in regard to knowledge production), and decide about the forms of government and access criteria for students and professors. Indeed, society not only demands accountability, but at the same time, it hopes that the university will insert itself and achieve social relevance and equity, in the face of an increase in and a variety of demands for university studies.

To speak of the social function of the university also leads us to incorporate relevance; that is, the demand that the university contribute concrete solutions to the problems posed by sustainable development. The theme recurs in the evolution of the university and of scientific research, with the nuances and specific weight given to it by the historical-social context, as to whether priority should be given to basic research or to research oriented toward practical problems proposed by social needs. Government, industry, employers, NGOs and society in general demand concrete results from universities.
As a consequence of the ideas mentioned regarding the second axis, a movement toward university reconfiguration has been produced that operates in terms of its academic-organizational structure, as well as its internal dynamic regarding teaching and research.

**Academic-Organizational Structure**

Mercantilization of the knowledge production and transmission processes has had a bearing on the introduction of academic-organizational structures that design and execute assessment mechanisms to account for the resources invested and, above all, the results obtained, especially if these results place the institutions in conditions to compete on the national or international level and form part of the group of universities that participate in world rankings.

These assessment mechanisms, whose declared purpose is quality assurance, have been generalized in most of the developing countries. For example, in Mexico, Uruguay, Colombia and Venezuela, there are recognition and stimulus programs for universities dedicated to knowledge production. Such programs use indicators and assessment and accreditation criteria intended to regulate and control the quality of the research activity in higher education institutions.

Institutional reconfiguration of the university also affects the revision of forms of university governance. On the one hand, it proposes changing the traditional corporative model with an electoral base, in which the distribution of decision-making authorities has a dual constitution, hierarchical and participative at the same time. This model is giving way to another in which leadership functions are assumed as a management task. On the other hand, it even proposes the professionalization of university management, a little closer to the style of North American universities and in open contraposition to what has been the tradition of university co-government in Latin America.

The proposed Theoretical Model underlines how, throughout the university’s history, society has constructed and re-constructed its concept of that institution based on two essential aspects: the social function of the university and the academic-organizational structure for knowledge production, in a dynamic and complex process, which is not foreign to tensions between the institution and society and tensions occurring inside the university itself (Graph 5).
Key Features of the Concept of the University Axis

**Orientation of the University**

The orientation of the university is present in the vision and mission declared statutorily and practiced by the institution in relation to its priority goals; it is the tendency that accounts for the organizational and functional scope of the institution in academic practice, whether teaching, research and extension or service. Based on this, university orientation could be: professionalizing, researchal, developmental, entrepreneurial and socialist.

A Professionalizing orientation would center and organize its functions around its principal goal: the training of professionals. This is the orientation that has prevailed in the traditional Latin American university, as the increase in student demand has contributed to its permanence and to the appearance of institutions that absorb the demand, above all in the private higher education sector. Its validity was a determining factor in the modernization process for mid-twentieth century Latin American societies and in forming the middle classes of the population, connected to the development model assumed at that moment in the majority of countries in the region.
The second form of orientation is Researchal, where the pre-eminence of scientific research prevails in the functioning and organization of the university, in the declaration of its mission and vision, as well as in practice. The research university produces quality, cutting-edge knowledge; it also possesses the capacity to transmit that knowledge and, at the same time, to attract greater resources to finance research and capture or hire the best talents. In developed countries, this type of university has a great presence, without saying that it represents the majority. Nevertheless, its prestige and position in the knowledge production environment and in world-wide innovation and development systems places the research university in a privileged position, which legitimates its image and performance as the ideal to be followed by the rest of the universities.

The university with a Developmental orientation centers its mission on generating knowledge that supports solving problems “in, with and for” the contexts where the university is ascribed and constructs capacities that contribute to human and sustainable development. This type of university constitutes an engine for community development in the locality where it is found. Another characteristic is that this type of university works very closely with the government in designing and implementing its development policies. Institutions with this orientation have two goals: to promote knowledge production to achieve environmental sustainability and endogenous development; and to improve the quality of human life in the countries where they operate, either through research that follows scientific mainstream standards or research that incorporates daily wisdom and dialog with extra-academic actors.

Sutz (2005) has stated four of the main challenges that face what can be called a “Developmental University” (DU): 1) High-level research and teaching activities need to be strengthened. Achieving this will require many more researchers and creatively trained students, as well as opportunities for these researchers and students to work in their own countries. 2) Local needs must be included in research agendas. In particular, attention should be paid to the needs of local industry, and priority given to tackling social problems. Concomitant efforts must also be made to ensure that there is a demand for the research results and potential users have the capabilities to implement them. 3) New assessment methods must be developed for
university researchers that encourage research about local needs. This means that research into problems of local relevance must be rewarded, irrespective of whether it achieves international acceptance or impact. At the same time, care must be taken to devise new and rigorous methods to evaluate academic work, and international isolation must be avoided at all costs. 4) Support must be provided to help students and university staff identify with and commit to solving social and productive problems.

The fourth type of orientation is the Entrepreneurial University (EU). Universities using this approach center their mission on knowledge production and training human talent to satisfy scientific and personnel needs for industries and companies in close cooperation with them; these universities seek competitiveness, relevance and quality and are characterized by being innovative and generating new businesses. On the other hand, a university with this orientation assumes a corporative organization in which its members (students, professors, administrative personnel) are entrepreneur-oriented and interaction with the external sector follows a free market pattern. From the explanations already given, it is obvious that the entrepreneurial university incorporates the economic mission in its declaration of principles and its daily practice.

Another fact about this kind of university is that it arose as a response to the need universities have to obtain external and non-governmental financing. That need generated economically profitable alliances between the universities and commercial or industrial firms or businesses. However, at the same time, the universities were forced to drift toward corporatization, marketization and academic capitalism, like any other business enterprise (Leslie and Fretwell, 1996). This characteristic has a bearing on the scope of the autonomy that entrepreneurial universities enjoy. Burton (2005) stated this, arguing in favor of an active autonomy in relation to this entrepreneurial orientation:

...only autonomous universities are positioned to move fast enough in fast changing times and to match up against increased competition. And passive autonomy will not do. Active autonomy led by an entrepreneurial point of view is needed (Burton, 2005: 2).
On the other hand, and due to the fact that they receive funds from the entrepreneurial or industrial sector, their academic activity is committed to multiplying the return on this investment in the form of commercializable technological innovation. This condition compromises academic autonomy because, in this model, accounts are rendered more to the firms that provide funds and less to the university authorities. We are witnesses to an intrusion of the corporations in the design and execution of academic policies. The social ends of teaching and research become ancillary and disposable in the face of the economic ends.

The last type of orientation is Socialist. Universities with this orientation will have the goal of training an integral citizen educated in socialist values that fracture the capitalist hegemony in the socio-cultural system of the country and the world. This university orientation privileges the socio-political formation of students and its impact on constituting a socialist society, based on community work where the universities are located.

It is important to note that all the previous forms of university orientation constitute ideal types, which in practice can be combined in one institution. Our analysis emphasizes the variety, divergence and differences that are to be found across the universities; we did not study the distance or proximity they have relative to the “ideal condition.”

**University Government**

University government is formed by the university authorities and structures that make decisions regarding academic matters and practices. These authorities and structures function according to vertical or horizontal decision-making dynamics; the former operates based on authority exercised from hierarchical positions (rector, vice-rector); and the latter is present in the figure of school-wide associations with the participation of representatives from the students, professors, graduates and some cases, administrative personnel.

In the tradition of the Cordoba Movement (1918) in Latin American countries, the university’s form of government has generally been assumed to be a democracy, permitting participation by the community composed of the different groups in the institution through voting. This principle, generally accepted in the frame-
work of university autonomy, has been the basis upon which legislation on the subject in many Latin American countries establishes authority selection through elections.

However, as a consequence of the growth and diversification process in higher education, in parallel, appointment of the highest university authorities by governments has spread for public universities. In this case, the criteria for selecting university authorities are generally based on political considerations. On the other hand, for private universities, authorities are designated by a board of sponsors or scholars whose criteria are meritocratic.

In any case, university government implies a determined form for distributing power in the university and the participation of internal actors (professors, students, support personnel) and actors external to the institution (community, professional groups and other stakeholders) in the discussion and implementation of decisions about policies and actions regarding the functioning of the institution.

An element to consider regarding university government is the autonomy of the public university in terms of its relation to the State and the participation or interference the latter has in managing the institution. According to the Latin American tradition, whose philosophical roots are found in the postulates of the so-called Cordoba Movement of 1918, the university enjoys autonomy from the State and the church, which had been mentors of the institution since colonial times. Nevertheless, in most Latin American countries, political conditions during the greater part of the twentieth century did not permit the development of genuine university autonomy in relation to the State.

As pointed out previously, the university has depended primarily on public resources for its functioning. This has given governments the possibility of intervening in the functions of the institution, to a greater or lesser degree, through the financial provision, although this relationship has also been characterized as being benevolent, in the sense of obviating the requirement for accountability. However, as indicated earlier, on the current scene, the State has assumed a dual position with regard to the university: on the one hand, it has reduced its intervention in terms of financing, obliging the institutions to obtain resources through other routes; on the other hand, it has assumed a more protagonist role
in terms of regulating its functions. This dual role supposes a reformation of the autonomous concept of the public university.

**Academic-Administrative Organization**

This refers to the configuration and distribution of competences among the dependencies that support the academic and functional activities of the university (faculty, school, division, department, coordination, programs, projects, etc.). The university is a highly complex institution and its academic-administrative organization responds to its specificity as an entity dedicated to professionalization together with knowledge production and transmission, whose dynamic fragments the organization to the degree that it produces knowledge specialized into disciplines and sub-disciplines.

This fragmentation is expressed in the different operative and decision-making levels, for which the basic operative unit is the department, as a specialized structure in a discipline. The following hierarchical levels are less specialized entities with a greater scope: schools, institutes, divisions and faculties. Although this condition is characteristic of the university, what should be emphasized is that, in Latin America, the fragmentation lacks a counterpart with a sense of unity in diversity; therefore, each entity in the structure functions according to its own logic and interpretation of the regulations.

It is important to highlight that the structure indicated by Ibarra Colado (2009) for the Mexican case as “disorganized anarchy” is generalized in Latin American universities, since it is characterized by discretionality in decision-making and regulatory laxity.

**Training Model**

This is the set of curricular elements that constitutes the training and formation process: educational concept, structural elements (educational areas, curricular units and axes, disciplinary organization), and the professor-student relationship.

This model responds to an educational concept that could go from the most traditional discipline-based institution, to one where the integral curricular concept based on thematic axes prevails, which could be approached from a multi- and interdisciplinary perspective.

In synthesis, Table 8 shows the essential aspects and key features of the Second Thematic Axis.
## Table 8
Definitions of Key Features for the Second Thematic Axis: Concept of the University

<table>
<thead>
<tr>
<th>KEY FEATURES</th>
<th>CONCEPTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orientation of the University</td>
<td><strong>Professionalizing:</strong> If it is organized and operates with the training of professionals as its principal goal.</td>
</tr>
<tr>
<td></td>
<td><strong>Research oriented:</strong> If it gives priority to scientific research over and above other academic functions.</td>
</tr>
<tr>
<td></td>
<td><strong>Developmental Oriented:</strong> If its mission is to generate knowledge that supports solving problems &quot;in, with and for&quot; contexts where the university is ascribed and constructs capacities that contribute to human and sustainable development.</td>
</tr>
<tr>
<td></td>
<td><strong>Entrepreneurial:</strong> If its mission is to produce knowledge and train human talent that satisfies scientific and personnel needs for industries and firms in close cooperation with them, seeking competitiveness, relevance and quality, characterized by being innovative and generating new businesses.</td>
</tr>
<tr>
<td></td>
<td><strong>Socialist:</strong> If the university has the goal of training an integral citizen educated in socialist values that fracture the capitalist hegemony in the socio-cultural system of the country and the world.</td>
</tr>
<tr>
<td>University Government</td>
<td>The university authorities and structures that make decisions regarding academic matters and practices. These authorities and structures act according to two decision-making dynamics: one vertical, which operates based on authority exercised from hierarchical positions (rector, vice-rector); and the other horizontal, present in the figure of associative organisms with the participation of student representatives, professors, graduates and, in some cases, administrative personnel.</td>
</tr>
<tr>
<td>Academic-Administrative Organization</td>
<td>The configuration and distribution of competences among the dependencies that support the academic and functional activities of the university. (Faculty, school, division, department, coordination, programs, projects, institutes, centers, etc.).</td>
</tr>
<tr>
<td>Training Model</td>
<td>The curricular elements that constitute the training and formation process: educational concept, structural elements (educational areas, curricular units and axes, disciplinary organization) and the professor-student relationship.</td>
</tr>
</tbody>
</table>

Source: Authors.
THIRD THEMATIC AXIS: UNIVERSITY-SURROUNDINGS RELATIONSHIP FOR KNOWLEDGE PRODUCTION

Through the study of its history, one can clearly appreciate how the university as an institution has woven a closely knit network of relationships with other institutions and groups in society. However, it has been well known that the university has interests and objectives that are not common with organizations such as the government, industry, NGOs, communities and, in general, the sector outside the institution. Surely, the main reason could be that the nature of the university is not similar to the rest of the entities mentioned. In some cases, there have been confrontations between these entities and the university, mainly originated by political or ideological differences.

On the scenario of globalization, this reality creates challenges that confront the university with three possible courses of action.

The first could be inertia and maintaining traditional structures in the unstable and uncertain relationship between the university and the external sector. This position does not contribute to redefining the role of higher education institutions as agents for overcoming underdevelopment. On the other hand, the relationship between the university and its surroundings could assume the aforementioned “triple helix” model, according to which intersection and interdependence are produced among the university, the industry and the government. It is important to note that the implications of this model are different when applied to underdeveloped countries. In effect, in the context of those countries, one should ask to what point industry and government are prepared to participate in an equal interaction with the universities.

As Sutz (2005) pointed out, these three entities -the university, industry and the government- must be prepared to accept new responsibilities that require a sympathetic dialog within the universities, as much as among university - industry - government. However, such a dialog requires that government and industry be interested in combining efforts whose fulfillment demands accepting significant internal changes. Furthermore, it requires industries that recognize the value of incorporating and using scientific and technological knowledge produced in the university. It also re-
quires a favorable political climate that establishes clear rules without subjugating the synergy of the relationship.

In the case of Latin America, such synergy related to the State has not been produced, because the relationship of the government, as State representative, with the university has been reduced to granting financing, as previously mentioned. This circumstance has been modified, since in most countries in the region, the benevolent position of the State toward the university has weakened or fractured.

In the light of this reality, some higher education institutions are reviewing their connections with the external sector. This relates not only to obtaining financing from other sources, among which industries and the productive sector have the greatest capacity for providing it, it relates principally to a global redefinition of the universities’ role in society and their position in the new reality.

The version of the university-surroundings relationship explained by the triple helix model tends to reduce it to economics and, therefore, offers a narrow vision of its real scope. In the case of Latin American universities, criticism of this analysis perspective was based on the regional university tradition, as the economic structure and political circumstances gave way to a situation where a link with the productive sector was considered a negation of the university’s nature and principles, hallowed from the beginnings of the past century.

In developed countries, this discussion revolves around what has been called the third mission of the university, a term closely connected to the concept of the entrepreneurial university. And even though the ambiguity of this concept has been criticized because it refers to a set of activities that university research has had as its central goal, inclusion of the term points to an emphasis on the importance of the university’s relationship with its surroundings through research carried out for economic ends (Laredo, 2007).

From what has been stated, one infers that applying the entrepreneurial concept of the third mission to universities in underdeveloped countries supposes requiring from them new goals that imply generating more and better knowledge about the problems of the external world. In turn, the external world
should know the internal capacities the university has to take care of those problems, thereby creating bridges with society and finding common interests and motivations for research and teaching (Bortagaray, 2007).

And last, but not least, the aforementioned interaction could be founded on the idea of university social commitment, understood as a better coordination of those institutions with local problems, which are contextual in society and the world of work, basing long-term orientations on the objectives and needs of society (Dias, 2008), according to ethical principles of social justice, equality, relevance and equity. This implies strengthening connections with the external sector, being productive, social and communitarian. The links would be of three kinds; first, education to train the personnel needed in the light of sustainable and endogenous development; second, the appropriate functioning of scientific research and knowledge transfer mechanisms on a two-way street, university - external sector - university; and finally, basic knowledge production, but also and in an intense manner, knowledge production to solve problems for the productive sector as well as for the surrounding communities.

This viewpoint, which explains university/surroundings relationships, emphasizes a notion of university social responsibility that is not restricted to the number of professionals graduated, but rather supposes observing and following “universal ethical management standards for sustainable human development,” management of the “direct and collateral effects” generated by its decisions, and activities and “participation of the interested parties (the stakeholders) in the daily activities of the organization” (Vallaeys, 2008).

The concept that best summarizes these proposals seems to be that of “academic capability” building, introduced by Liefner and Schiller (2008). For the university, knowledge is an input as well as an output in its internal production process. As an input, the institution possesses knowledge incorporated in human resources (professors, researchers, students and staff) and materials (libraries, laboratories, data files). The output of this internal process is the knowledge possessed by highly qualified graduates, publications and knowledge contributed by the university
through services to industry and government. So, if the output is part of the country’s assets in quantity as well as quality, the university will have contributed positively to the country’s development and technological advance.

The possibility of making such a contribution depends on two facets: the knowledge the university can utilize as input and the way the institution and the higher education system in general are organized. These two facets are summarized in the concept of “academic capabilities” “…defined as the set of functional skills and organizational ability of a country’s higher education institutions to carry out their extended role in the process of technological upgrading and learning” (Liefner and Schiller, 2008: 281). These academic capabilities are classified into two types: functional and organizational. The former are linked to teaching, research, the third mission or outreach and functional integration, while the latter are associated with budgeting, management and institution building.

According to how developed those academic capabilities are, universities in developing countries can be placed in three positions: low, intermediate and advanced. Each of these levels indicates the greater or lesser suitability of the universities to achieve technological upgrading and long-term development. Transition from the lowest to the most advanced category demands that the universities or other higher education institutions fine-tune their relationship with the surroundings and make it more complex in both versions: the economist (triple helix) version and the version that emphasizes social and community commitment.

All the ideas developed above have been presented to explain how our proposed Theoretical Model focuses, on the one hand, on how these trends must be considered in order to understand the emerging university model and, on the other, looks at two essential aspects of the thematic axis “university-surroundings relationship for knowledge production”: first, strategies for the university-surroundings relationship with government, communities, communal councils, private organizations, educational sector; and second, university forms of territorial insertion (See Table 9).
Table 9

Essential Aspects and Key Features of the Third Thematic Axis: University-Surroundings Relationship for Knowledge Production

<table>
<thead>
<tr>
<th>Essential Aspects</th>
<th>Key Features</th>
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</thead>
<tbody>
<tr>
<td>Strategies for the University-Surroundings Relationship</td>
<td>Practices of the University-Surroundings Relationship.</td>
</tr>
<tr>
<td>Forms of Territorial Insertion</td>
<td>Spatial Distribution.</td>
</tr>
</tbody>
</table>

Source: Authors.

Essential Aspects of the University-Surroundings Relationship for Knowledge Production

*Strategies for the University-Surroundings Relationship: Government, Communities, Communal Councils, Private Organizations, Educational Sector*

Relations of the university with its surroundings in developing countries have been identified with extension, traditionally conceived as the third function of the university and its link with society. This identification affects and limits the strategies based on which it connects with “others.” Strategies, in general, include the tactics and actions based on which the university connects with the context, its needs, its problems and their solutions.

It cannot be forgotten that, in many cases, this third function was reduced to rhetorically honoring the social commitment of the institution from a unilateral, paternalistic perspective, in which the university “gives” some support or circumstantial help to society. From this viewpoint – particularly in Latin American countries – university links with its surroundings have a limited scope. Their original theoretical formulation contained a greater social reach when it honored the principle consecrated by the Cordoba Movement (1918) that defines “university extension, carried out as a means of effective connection of the University with social life” (Mariátegui, 1996: 5), through connection with a definite political and even ideological content. The scope of the extension, in this originating concept, has to do with the “extension” of knowledge and technology, according to the production mode for knowledge
and technological innovation, discussed in the first thematic axis as “Mode 1” or “university knowledge.”

According to the specialized literature, among the principle strategies the university implements to connect itself to the external sector are:

1. the integrated participation of internal and external interest groups in university activities;
2. the coordination of pensa, research, extension and teaching methods with the solution of society’s problems;
3. regular self-diagnosis of the institution using appropriate measuring tools for being accountable to the interest groups (Vallaeys, 2008: 209).

A very diverse range of practices has been adopted by Latin American universities for making the relationship with the external sector viable; these range from cultural dissemination and divulgation activities to business incubators. Implemented strategies refer, principally, to short stays of students in industries and businesses of the public or private sector, occasional help for communities and obtaining financing for research, generally very limited financing, because the stakeholders that are able to grant it do not trust the possible advantages that assistance from the university or association with that institution might have for their own interests.

**University Forms of Territorial Insertion**

To the implications of globalization, the effects of contrary tendencies have been more recently added; these proclaim the location of intellectual work, illustrated by the double Foucaultian categorization of intellectuals:

Intellectuals have situated themselves to work, not on the “universal,” the ‘exemplary,’ the ‘just and true for all,’ but rather on its specific sectors, precise points where their working conditions or their living conditions (housing, hospital, the mental asylum, the laboratory, the university, family or sexual relations) are situated (Foucault, 1979-1977: 184).
As indicated by the challenges that globalization poses for the university, one must also consider how the institution approaches the local space where it is found in an effort to coordinate with its needs and most immediate problems.

From the spatial point of view, every university is physically located in a delimited territory and as such, it “lives” in a community that could range from a well-developed city to a small, rural setting, which, independent of its size, coexists in a symbiotic relationship with the university.

The tendency to territorial concentration in capital cities translated into a propensity for concentrating population in the main urban areas; as a consequence, universities have settled in the metropolitan zones of larger cities. This, together with the centralist tendency of national states in Latin America, led to a territorial distribution of the university that accentuated its elitist character and its segregation from important contingents of the population.

In the last decades, this tendency has been differentiated through higher education “municipalization” processes, understood as the creation of local centers or university villages placed in rural zones far from the capitals and more populated cities.

Municipalities are the smallest jurisdictions, closest to the inhabitants of the geo-political organization of a country. There are urban municipalities located inside large cities, but there are also rural, exterior municipalities, located in the most remote and even isolated zones of the corresponding national territory.

Nevertheless, in Latin American countries, this has not resulted from the planned design of a decentralizing policy, but the idea of moving educational institutions to other places in order to respond to student demand originated in the far-away towns, which are often difficult to access. Municipalization of the university has been seen as part of a regional stimulus policy that is a key link to sustainable development.

According to this premise, university centers located in different places should not only constitute a source of economic development for the surrounding communities, since they generate direct and indirect sources of employment, but also, and what is probably most important in this territorial dimension, they should
have an impact on the professional training of local students who would not have to emigrate to the most important urban centers to obtain a tertiary education. However, the improvisation that has marked municipalization efforts in Latin American countries has produced effects contrary to those indicated here, as will be explained under the subtitle “Quality vis à vis Equity in Higher Education” in Chapter IV.

Graph 6 illustrates how the university establishes links with its surroundings, not only in physical terms, given its location in space, but also in terms of the nature of the connection it establishes with other public and private authorities.

Graph 6
University-Surroundings Relationship.

Source: Authors.

Key Features of the University-Surroundings Relationship for the Knowledge Production Axis

Practices of the University-Surroundings Relationship

These are the strategies and actions based on which the university connects with the context, its needs, its problems and their solutions. The principal strategies are: extension, communitarian and integral projects. These are complemented with inter-institutional agreements (academic cooperation), university firms, university incubators and student internships.
Extension projects are developed by university students and professors to broaden the effects of university academic activity within its territorial insertion and its human range, related to its social context. Through extension projects, it is expected that the university expand its educational and research activity and direct it toward service to prioritize social purposes.

Community and integral projects are innovative kinds of projects that are being carried out in some Latin American universities.

Community projects are the resources through which students comply with a legal requisite for graduation, which is compulsory in some countries and requires students to complete a number of community service hours during the second half of their undergraduate studies.

Integral projects are transversal axes for the educational process that coordinate formative research and social projection in order to incorporate the community together with students and professors in activities that generate and re-create knowledge associated directly with the development the community needs.

Although the practices mentioned above are found in many Latin American universities and may be considered as a clear path to bring the university and its surroundings closer, there are some practices widely used in developed countries that are not common in Latin America; for example, spin-off companies, which are created to develop products and services of interest to other firms and simultaneously increase their own knowledge base (Williams and Majewsky, 2002).

**Spatial Distribution**

This refers to the physical infrastructure and location(s) where the university operates, i.e. its headquarters or centers, university villages, laboratories, venues belonging to others, conditions of the structure, resources, among others.

In some Latin American countries, higher education municipalization processes have begun which imply that geographical distribution of that system on the national map corresponds to the political-territorial organization of the country into municipalities.
Table 10 summarizes the essential aspects and key features into which the third axis is disaggregated.

### Table 10

**Definitions of Key Features for the Third Thematic Axis: University-Surroundings Relationship for Knowledge Production**

<table>
<thead>
<tr>
<th>ESSENTIAL ASPECTS</th>
<th>CONCEPTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategies for the University-Surroundings Relationship with: Government, communities, communal councils, firms, industry, NGOs, educational and other social sectors.</td>
<td></td>
</tr>
<tr>
<td>Forms of Territorial Insertion.</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>KEY FEATURES</th>
<th>CONCEPTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practices of the University-Surroundings Relationship</td>
<td>The strategies and actions based on which the university connects with the context, its needs, its problems and solutions for the same. The principal strategies are: Extension Projects, Community Service Projects and the Basic Integral Unit Project. This is complemented with inter-institutional agreements (academic cooperation), university firms, university incubators and student internships.</td>
</tr>
<tr>
<td>Spatial Distribution</td>
<td>The physical infrastructure and location(s) in which the university operates (its headquarters or center, university villages, laboratories, venues belonging to others, conditions of the structure, resources, etc.).</td>
</tr>
</tbody>
</table>

**FOURTH THEMATIC AXIS: UNIVERSITY ACTORS**

In contemporary social sciences, the importance of social actors as the people who make decisions and execute them in the mutual, specific field where they act, has been revived. The social actors are established in the framework of interacted relationships and generate a collective conscience that gives them identity. They share characteristics, values, attitudes and representations. However, this does not mean that they are homogenous groups; internally, differences occur, even though they share an identity.
Based on this, if the objective of social analysis is to decipher reality, this task cannot be accomplished only by paying attention to structures, institutions and organizations. These do not mobilize without the participation of social actors. Consequently, to approach the study of the university, whether from its dimension as a social institution or from its organizational dimension, requires identifying and analyzing the actors that give it life.

In the university, traditionally, these actors have been students and professors, in such wise that their differentiated participation gave rise to two different university initiatives: the first, in Bologna, in 1088, centered on the students; and the second, in Paris, in 1231, centered on the professors. Throughout university history, their presence as protagonists has been maintained to the point that, in almost all declarations of principles adopted explicit or implicitly, the university is defined as a community of interests of professors and students in search of truth.

Likewise, university history is also aware of the different ways students and professors have participated and acted as protagonists, a participation that has affected not only the internal university dynamic, but its action in society as well.

Of course, the roles that students and professors have performed in the institution have changed. The university has gone through different stages in which, as discussed in the second axis dedicated to the concept of the university, its social function and internal organization have undergone significant transformations that have given rise to the contemporary university. In terms of the proposed Theoretical Model, it is interesting to analyze the characteristics of both groups in order to understand the roles they play and how these can be affected by the challenges the university faces.

One of the most important processes that has occurred in the ambit of higher education and the university, in particular, has been massification. As a consequence, the pyramidal model of education, prevailing until mid-twentieth century, which represented the population attended at different educational levels and, according to which, only a very reduced proportion had access to the top, has given way to another model that reflects a tendency toward the universalization of education. In this sense, worldwide higher education statistics demonstrate that university coverage has grown ex-
ponentially, not only in developed countries, but also in underdeveloped countries. Likewise, the growth of the population attended by higher education institutions has also increased considerably.

It is necessary to point out that, even though the pyramidal model is still present, the cusp is not so pronounced, as UNESCO’s report corroborated:

The number of students pursuing tertiary education has skyrocketed over the past 37 years, growing five-fold from 28.6 million in 1970 to 152.5 million in 2007. This translates into an average annual increase of 4.6%, with the average number of tertiary students doubling every 15 years. A closer look at the data reveals that the expansion has been particularly intense since 2000, with 51.7 million new tertiary students enrolled around the world in just seven years (United Nations Educational, Scientific and Cultural Organization, Institute for Statistic, 2009: 10).

This growth was the result of socio-political and, especially, economic changes experienced after the Second World War, which demanded the training of human resources needed to respond to requirements of the technological and information revolution occurring in developed countries.

Meanwhile, in underdeveloped countries, although the technological changes did not imply a parallel economic growth, political and social circumstances also impelled a moderate growth of the population that had access to tertiary and, especially, university education. For instance, in Africa, Latin America, India and China, the population with access to that educational level grew only marginally from 5 percent in 2000 to 7 percent in 2007 (Altbach et al., 2009).

This demographic change in university student population and its effect on the professorial segment are not limited to being merely a movement of these groups as aggregates. They deal with significant modifications that have affected their constitution as well as their action, trajectory and identity in the university ambit. Those modifications can be studied more easily by using the essential aspects contained in this fourth axis (See Table 11).
Essential Aspects of the University Actors Axis

Students

Despite the enormous importance of students for university life and the tendency to privilege teaching as the most important function of the university (and many times the only one truly fulfilled), attention to this actor has generally been neglected or marginalized.

Teaching as a pedagogical and educational exercise, the policies directed toward improving it, and the necessary and appropriate infrastructure for carrying it out have been privileged, without stopping to analyze the characteristics of the students, their effect on the life of the institution or which concept of university student is being taken into account. Infrequently, warnings have appeared that “being a university student supposes a construction that includes the appropriation of routines, practices, scientific knowledge and other (knowledge) of a doubtful disciplinary affiliation, existing social practices outside the university domain, as well as what is formally expressed in the curricula” (Barros, Gunset and Sierra, 2009: 1). This definition gives form and content to their participation as actors in university life.

<table>
<thead>
<tr>
<th>Essential Aspects</th>
<th>Key Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students</td>
<td>Student admission system.</td>
</tr>
<tr>
<td></td>
<td>Student participation in community and knowledge producing projects.</td>
</tr>
<tr>
<td>Professors</td>
<td>Identification with the university orientation.</td>
</tr>
<tr>
<td>Graduates</td>
<td>System for hiring professors.</td>
</tr>
<tr>
<td></td>
<td>Tenure and promotion system for professors.</td>
</tr>
<tr>
<td>Community</td>
<td>Training system for professors.</td>
</tr>
<tr>
<td></td>
<td>Graduates by gender.</td>
</tr>
</tbody>
</table>

Source: Authors.

Table 11
Essential Aspects and Key Features of the Fourth Thematic Axis: University Actors
The analysis of students as key university actors ought to respond to the conditions of contemporary society and the way that these have had a bearing on the concept of the university itself; and on the protagonist role of knowledge and technological development in the higher education scenario (Vega Tato, 2007).

It is true that this theme is highly complex and many thorny problems have been mentioned that characterize it. However, we want to emphasize three aspects, due to their implications in the analysis we propose: access to the university, the use of communication and information technologies and the student’s identification with the institution.

In the first place, as has been mentioned before, access to the university has become a priority topic. It not only was and continues to be a phenomenon that has marked the development of higher education in the world, it has also introduced a new element: equity.

Recent decades have witnessed growth of the population that has access to tertiary education, in general, and to the university, in particular. However, as a counterpart, that greater access has been inequitable, because the social sectors most favored socially and economically, as well as geographically, are the ones that have had greater and better opportunities to enter a university. Even in developed countries, statistics have demonstrated that minority sectors, for ethnic and cultural reasons, have fewer opportunities to enter or continue their university-level studies (Altbach et al., 2009).

In underdeveloped countries, these inequalities are accentuated. Political instability and structural conditions in these countries generate a climate that contributes to deepening the inequalities in student admission to higher education and, especially, the university, despite the relative success of policies undertaken in this regard. The United Nations Educational, Scientific and Cultural Organization, Institute for Statistic (2009) indicates that in the countries of Latin America, Africa, India and China, the higher education admissions rate has increased in the last two decades. Nonetheless, when analyzing the social composition of those new students, it has been proven that they come from the more favored sectors; the majority of the students come from families with better incomes and from urban zones.
The problem of inequality in admissions is not limited to the fact that there are groups of students for whom there is no guarantee of being able to access university studies. The inequality is much deeper when it is analyzed from the viewpoint of quality. To a great degree, increasing access to higher education has been possible because, at the same time, a diversification of institutions has occurred, and the weight of the private sector has been significant.

This has had a bearing on the segmentation of institutions based on quality, which is not always guaranteed by profit-making, private universities that are interested in increasing their student body — seen as clients — more than in offering a quality education. Furthermore, next to the local private institutions, new international providers have arisen that have found a student population seeking alternative options for entering higher education. One of the reasons for this is that, in underdeveloped countries, there is little or no capacity for regulation and control.

A tension is produced between growth and quality that some countries have tried to resolve based on a policy whose premise is relevance. This is achieved to the degree that the training model includes a flexible curricular design, not only adapted to advances in science and global knowledge, but that also that responds to local needs and recognizes the dialog among ways of knowing. This supposes, in turn, a curriculum centered on the students, their expectations and needs, whose participation in its design and development is active and protagonist and not simply limited to the role of information receiver. Given the recognized significance of contextualized knowledge production, it is important to observe to what degree this is expressed in student participation in community projects, where they act to benefit their professional training, the promotion and the implementation of transformations in the community.

In the second place, analysis of the students and university actors cannot avoid the impact that the use of information and communication technologies (ICTs) has on higher education. On the one hand, because of these technologies, we are in the presence of a new type of students, who no longer identity themselves with a certain age group, but rather identity themselves with groups that share a global culture, in which they participate intensely through the use of Internet, for example; this places them in
contact with movements, organizations and persons beyond the frontiers of their immediate surroundings. On the other hand, the introduction of information and communication technology establishes the need for students to develop the capacity for permanent learning and “learning while doing” in order to integrate themselves into productive processes and the job market.

In the third place, though no less important, analysis of the students ought to consider their identification with the institution where they are registered; this relates to establishing the features that characterize an institutional culture. In Latin American universities, such features have been marked by the intervention of elements belonging to the country’s politics in the student movement; however, currently, the tendency is to concentrate commitments and political identification on minority groups in the student population, while the majority seems to remain indifferent. The trend is that the students’ identification as a group belonging to the institution is based on affective connections with their companions and is determined to a lesser degree by the discipline in which they are getting their education or by the values and traditions that form part of the institutional culture.

**Professors**

Just as the students have been actors whose constitution and characteristics have influenced the university, in the same way, the professors, as actors in this community of interests, have had a significant influence on the direction and dynamics of the institution. Also, the professors have both reacted to social and university changes and generated many of the changes produced in it. University massification and differentiation have had a bearing on the growth of the number of professors and the diversification and segmentation process of the academic profession.

As mentioned before, one of the most outstanding characteristics in higher education development in the last century has been the exponential growth in the number of higher education institutions. This, in turn, has implied institutional differentiation, which has taken away the hegemonic role the university, as an institution, had maintained for centuries: knowledge creation and transmission. This worldwide process brought with it the consequence of institutional inequality, according to international criteria, and
produced the segmentation of university institutions based on the notion of quality. In international terms, as has been pointed out at various moments throughout this Chapter, the deepest inequalities correspond to those existing between universities in developed and underdeveloped countries.

What has been observed at an institutional level is replicated at the level of the professors, affecting their participation in the institution. Not only does the number of professors increase to the degree necessary to take care of student massification, but institutional differentiation and, consequently, the segmentation of institutions shows that we are observing an actor that cannot be approached as a homogenous set. This is pointed out by Altbach et al. (2009:90):

Academics who teach at research universities typically hold a doctoral degree and have full-time appointments, with some expectation of career advancement. Those employed at other kinds of universities and other postsecondary institutions more frequently do not have the highest academic qualifications, are paid less than their peers at the top of the system, teach more and, in general, have less adequate working conditions.

Additionally, professorial activities have also been diversified. Aside from giving classes and doing research, the professor must draft projects, seek alternative financing sources for his research, create e-learning programs and transfer technology. These are some of the tasks that, these days, form a substantial part of the work a university professor must complete and have recognized in order to achieve prestige and peer recognition. The aforementioned corresponds to the figure of the university academic in developed countries. In the case of underdeveloped countries, the situation is different in that, generally, distance is maintained between the teacher and the researcher, accentuated to the degree that university institutions in underdeveloped countries have a stronger orientation toward teaching.

Study of this actor implies a diversity of dimensions; nonetheless, in terms of our Theoretical Model, we would like to emphasize the academic/labor dimension, understood as general labor conditions, standards that regulate the academic career (entrance, promo-
tion scale, promotion) and the training processes in which the university professor participates after entering the institution, without denying the importance of other dimensions. These two dimensions of teaching and research as key functions of the university have been the responsibility of the professor; and, in general, when one alludes to the need for guaranteeing the quality of both processes, the decisive role the professor has in achieving this is emphasized.

To the degree that society has changed its expectations regarding the role the university should fulfill, it has, to this same degree, demanded that professors respond to these expectations, according to the criteria and control mechanisms established by the university. In principle, these control mechanisms regulate the hiring of professors by the institution, establishing requirements that guarantee the quality of the aspirant in terms of education and professional experience. This functions according to the prevailing tendency in the institution or the conditions imposed by the employer, whether the State, in the case of public sector institutions, or the owner, in the case of private universities.

The key role of knowledge in contemporary society affects hiring requirements for the professor in the sense that, in addition to professional credentials, he/she should demonstrate experience and a career as a researcher; it also affects the working conditions related to the professor’s possibilities for accessing information, handling ICTs and expectations in terms of salary received for his work. In the most prestigious universities in developed countries, these conditions that guarantee, to a certain point, the quality of the professor, are tested both at the moment of his/her entry and during his/her career, through control and regulation mechanisms. In this sense, a direct relationship is produced between the quality of the professor and that of the institution, which affects the circumstances in which the academic career evolves. Institutions of lesser prestige and repercussion in the scientific and academic community are not able to compete to attract the best professionals.

This segmentation based on quality is present in developed countries where not all university institutions can be classified as world-class universities. However, in underdeveloped countries, it is more evident because there are very few or, in some countries,
no universities that meet the demanding characteristics for this type of university. Consequently, the “best and brightest” do not find the academic profession attractive (Altbach et al., 2009).

**Graduates**

The inclusion of graduates as a university actor in our Theoretical Model responds to the need to pay attention specifically to the feminine population as evidence of gender equality conditions. Approaching the topic of graduates from this perspective will make it possible to show to what point feminine participation, which has grown progressively in terms of university admissions, corresponds to their graduation. This will be an evident indicator of differentiation based on gender.

**Community**

As we have already pointed out, challenges posed by the globalization of knowledge production have summoned the participation of non-traditional actors to this process. The transition to Mode 2 of knowledge production or pluriuniversity knowledge requires the direct intervention of multiple actors.

Throughout the development of the Theoretical Model, “community” as a category has been repeatedly mentioned; currently and without any doubt, this category constitutes a university actor whose behavior should be studied. However, since this is a concept that could seem ambiguous in terms of its scope and interpretation, we would like to emphasize here that, for us, the community is seen not as a receiver of academic action or university extension, but rather as an entity that intervenes directly or indirectly in the functioning of the institution and, above all, in knowledge production.

Community intervention is not limited to some formal participation mechanisms, but rather involves a dialog among ways of knowing established out of the experience and knowledge of its members. In this process, the combination of academic knowing produced by the university and popular knowing has the objective of responding to contextual needs and participating in the solution of local problems. Community participation defines the research
agenda and, therefore, influences curricular orientation (Muhr and Verger, 2006).

From this perspective, participation of the community as an actor in knowledge production has a transforming function and becomes a mechanism for social change; and, at the same time it contributes to strengthening people’s capacity for making decisions (Bellamy, 2006).

Graph 7 represents the interaction of university actors who participate in its conceptualization and dynamics.

**Graph 7**

*Actors Who Participate in the Conceptualization and Dynamics of the University.*

Source: Authors.

**Key Features of the University Actors Axis**

**Student Admission System**

This is the process established for admitting students to the institution. These processes and mechanisms include those imposed by the central government and the processes that each institution establishes according to its orientation.

**Student Participation in Community and Knowledge-Producing Projects**

This refers to the participation of students in community projects, projects that lead to knowledge production, and extension projects, as well as the manner and mechanisms through which this participation is produced.
Identification with the University Orientation

This means the autonomous appropriation of values attributed to the university orientation, accomplished by or for the students, graduates, the community and/or workers. The term “autonomous” alludes to what is done by conviction.

System for Hiring Professors

The system refers to the set of conditions and mechanisms formally established and utilized by the university to hire professors. These mechanisms include evaluating credentials of merit accumulated by the person who aspires to enter as a professor, as well as submitting him/her to other types of tests that assess his/her pedagogical and disciplinary preparation. This selection process of professionals is only put into practice when it is necessary to fill a vacant position in a public or in some private institutions.

Tenure and Promotion System for Professors

This is the set of formally established mechanisms and procedures for pursuing an academic career.

Training System for Professors

This refers to the set of plans and programs for updating and improving the academic careers of professors. There are two modalities in this system: the free mode (each one trains in what he/she prefers) and the mode oriented according to institutional and contextual needs.

Graduates by Gender

This is the number of graduates for each gender. This key feature acquires particular significance to the degree that the feminization of higher education has occurred, a theme shown in statistics that recognizes an increase in the number of women who enter, but above all, who graduate from higher education and are able to enter the job market. On the other hand, in many underdeveloped countries, women are still underrepresented in higher education institutions (Altbach, et al., 2009); for example, in Latin Amer-
ica and the Caribbean, the proportion of women enrolled in tertiary education has barely increased from 24.7% in the year 2000, to 38.9% in 2007 (United Nations Educational, Scientific and Cultural Organization, Institute for Statistic, 2009: 4).

As a summary of the Fourth Thematic Axis: University Actors, we present Table 12.

### Table 12
**Definitions of Key Features for the Fourth Thematic Axis: University Actors**

<table>
<thead>
<tr>
<th><strong>ESSENTIAL ASPECTS</strong></th>
<th><strong>CONCEPTS</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Students.</td>
<td>Process established for admitting students to the institution.</td>
</tr>
<tr>
<td>Professors.</td>
<td>The participation of students in community projects and projects leading to knowledge production; the manner and mechanisms through which this participation is produced.</td>
</tr>
<tr>
<td>Graduates.</td>
<td>The autonomous appropriation of values ascribed to the university orientation, accomplished by or for the students, graduates, the community and/or workers. (Autonomous alludes to what is done by conviction.)</td>
</tr>
<tr>
<td>Community.</td>
<td>The conditions and mechanisms formally established and utilized by the university to hire professors.</td>
</tr>
</tbody>
</table>

**System for Hiring Professors**

**Tenure and Promotion System for Professors**

**Training System for Professors**

**Graduates by Gender**

Source: Authors.
We conclude this chapter by underlining that the insufficiency of the models utilized internationally to explain the complexity of higher education systems and their academic dynamics in developing countries is due to the fact that those models ignore or underestimate many innovative characteristics that define these universities and are suitable for identifying the emergence of an alternative university model in the South. The Theoretical Model developed in this chapter provides tools and concepts that include and even highlight those particularities, thereby becoming a new instrument for defining and contrasting different types of universities and knowledge production systems in the context of the South.

Among the novel particularities that this Theoretical Model makes it possible to analyze, based on its components (axes, essential aspects and key features), the following are worth mention:

- Alternative or heterodox knowledge production.
- Dialog among ways of knowing: scientific, colloquial, indigenous or aboriginal, ancestral.
- Non-conventional actors in university knowledge production activity, such as communities.
- Extra-academic spaces as environments privileged for training and research, i.e. villages, indigenous settlements, cooperatives, farms, SAMES (Small and Medium enterprises).
- New strategies for university-surroundings integration, such as community projects, integral projects.
- The municipalization of higher education.
- Socialist orientation for the university.
- New meanings for the social function of the university.
CHAPTER III
THE CASE OF VENEZUELA: APPLYING THE THEORETICAL MODEL TO EVALUATE THE EMERGENCE OF AN ALTERNATIVE UNIVERSITY

One of the main purposes inspiring the research that supports this book was to identify the new forms of universities originating in the South in response to the challenges set forth by the knowledge society and the urgency to overcome underdevelopment. The study was completed using Venezuela as a central reference, because, in this country, as explained in Chapter I, the higher education system has produced crucial transforming dynamics, such as: municipalization, formative research through integral projects, the incorporation of alternative/heterodox knowledge production modes and the inclusion of non-conventional actors in university knowledge production activity.

This chapter presents a comparison between two concepts or models of universities: on the one hand, the preexistent university model in Venezuela, to which most of the universities, official or private, with a history and tradition in the country, respond; and on the other hand, the emergent university model that has appeared during the last ten years, due to the founding and opening of the UBV by the government in the year 2003, and the setting up of other universities, which are a result of executing the Misión Alma Mater.

The comparison criteria applied are the key features specified for each axis in the Theoretical Model developed in the previous chapter, and aspects that contribute to differentiating the two models are highlighted. However, the reader must keep in mind that the reality is very complex and generates nuances that will be mentioned for each
case. In general, it is important to be aware of three issues. First, the characteristics and the description of the UBV are consistent with its theoretical dimension revealed in documents, institutional declarations and testimonies from pertinent interlocutors. The analysis made in this book did not include contrasting this theoretical dimension with the practices effectively carried out inside the UBV. Second, although the comparison is made in order to explain the aspects that distinguish the UBV from preexistent Venezuelan universities, in many cases, the characteristics mentioned are not exclusive to one model or the other, but rather predominate in one of them. Third, there are intermediate values or coincidences (nuances) between the two models that will be highlighted when necessary.

In this section, we will work with qualitative as well as quantitative evidence. In fact, we will draw upon material from interviews with high officials of the Higher Education and Science & Technology Systems in Venezuela, as well as with authorities and key actors from the selected universities. We will also be drawing on analyses of the focus groups carried out with students from the UBV and preexisting universities. In the quantitative analyses, we focus on a set of indicators applied to universities belonging to both models.

**FIRST THEMATIC AXIS: KNOWLEDGE PRODUCTION**

In the Knowledge Production Axis, the comparison criteria include essential aspects linked with scientific research, formative research, technological innovation, technology transfer and social appropriation of knowledge, which were amply discussed in Chapter 2. The key features developed are the dimensions we look for to illustrate the axes and the essential aspects.

**Gnoseological Approach**

In the preexisting Venezuelan university, the concept of knowledge as the product of rationally designed systematic processes to comprehend and explain external reality according to universal, experimental and intellectual methods predominates. Using this approach, knowledge production demands skills and abilities that exceed those of non-scientific actors. Knowledge (sci-
entific) is produced in the university and is distinguished from extra-university or colloquial knowledge.

Nevertheless, students at these universities differentiate systematic knowledge obtained “intramurally” from knowledge generated in other environments, judging the knowledge produced in the university to be “legitimated” by systematization. This vision prolongs the role of universities as institutions that accredit knowledge, even though it does not imply that the university is the only place where that knowledge should originate.

“…universities serve to legitimate knowledge, that is the only difference that separates us, university students, from people who have not entered a university: that we are legitimated by an institution and their knowledge is not legitimated. We restrict ourselves to a legitimated scientific method, but the fact that they do not produce knowledge in a systematic way or with certain methods does not mean to say that ….“ (FG1)

In the emerging university model, knowledge is a collective (social) construct resulting from daily activities performed outside the university premises (grounds), in the communities, and with several actors from specific socio-cultural contexts. The origin of knowledge is experiential. Comprehension, understanding, self-reflection and action flow together as areas that, in turn, require modes for realization in communications, aesthetics and ethics. In this same sense, León (2006) affirms that “knowledge does not exist and is therefore constructed…we can learn it all together …it has to be constructed in collective and in specific socio-cultural contexts.”

UBV students conceive knowledge as a social creation that the researcher recovers in order to systematize it in the university.

“…knowledge is generated in the empirical, it happens in society; the researcher collects it, systematizes it and returns it to society. The idea that the researcher constructs an object; that knowledge is constructed seems to have no place in this idea nor does knowledge that is

1 FG: Focal Groups.
not applicable for solving the community's immediate problems.” (FG7)

“…knowledge is found in the communities, and the relationship that can exist between the communities and the (training) program is what will allow us to generate new knowledge.” (FG9)

This concept of knowledge has been strengthened in different academic scenarios and in specialized literature, leading to the acceptance of categories such as a “dialog between scientific knowledge and everyday knowledge,” an aspect that we will take up later when analyzing the “dialog among ways of knowing” and the demands this makes on researchers and institutions. Langer (2008: 25) refers to this tendency as the search for the social relevance of knowledge in Latin America:

The erstwhile scientist who worked in an ivory tower, clad in total autonomy with regard to the rest of society’s institutions, is no longer socially accepted. Over the years, this movement… (the approach of the university toward reality) …took shape with the exigency that its scientific work should have social relevance.

One of the professors at the UBV emphasizes the possibility of making knowledge production a process of integration and sensitization with problems in the surroundings:

“...sensitization of the students themselves with regard to community problems and making these topics of research, which is very important, and in this way, the student is sensitized not only to respond to that academic demand, but also to involve himself in his daily life in solving these community problems.” (I4)

These differences between gnoseological approaches explain the duality of the knowledge production modes described in the next subtitle.

---

2 I: Interview.
Knowledge Production Mode

The university model prevailing in the world today conceives scientific knowledge as the product of a systematic process, rationally designed to comprehend and explain reality according to experimental and intellectual methods that are susceptible to verification. According to this model, knowledge production requires specific skills and capabilities from scientists and is carried out in universities or other environments appropriate for performing this demanding intellectual activity, distinguishing it from colloquial knowledge acquired and transmitted in non-academic environments.

Liefner and Schiller (2008) indicated, in the case of Thailand, that the positive contribution of universities in developing countries should be the quantitative and qualitative increase of the heritage of knowledge and the formation of a local platform of scientists who impel development in the long term, in general, and technological advancement, in particular.

In relation to India, Gupta (2008) affirms that the main role of universities used to be teaching and research combined with the search for knowledge for its own sake. However, the massification and democratization of higher education have placed universities under public scrutiny, and they can no longer be satisfied to function according to the “ivory tower” model. This concern justifies the transition from the preexistent model to the emerging one in relation to knowledge production.

In the preexistent university model in Venezuela, knowledge production takes place under the following ideas:

- Knowledge must be the result of rigorous, systematic scientific research carried out under criteria of scientific solidity and verification, mainly through peer evaluation and with a predominance of the positivist focus to recognize it and accredit it as such. Therefore, all research done should hold to the standards of the scientific mainstream. As a consequence of this approach, Mode 1 of knowledge production, specialization, disciplinary logic, differentiation in valuating basic and applied knowledge (Gibbons et al., 1994) or “university knowledge” (De Sousa Santos, 2005) prevail.
Students from these universities presented arguments that reaffirmed this conviction about the preexistent university:

“Outside the universities, there are many dark areas and questions that require the technical knowledge imparted in the university: but many times, knowledge is outside the communities. I think that a greater interaction is needed between universities and the communities. The latter have the problems; now, in real life, I think it’s possible that they cannot find the solution by themselves, but need to connect with some university to be able to solve those problems.” (FG2)

“…in the university, there is knowledge, and many times we attend some classes with our minds blank and leave with some information, whether or not it is applied. From my viewpoint, trained people help more in the development of a country.” (FG6)

- The concept of research for the preexistent university model is a process of searching for new knowledge, characterized by the creativity of the act, the innovation of ideas, the rigorous methods utilized, and the validation and critical judgment of peers who apply international criteria to valuate scientific knowledge. Research in this model is oriented toward working with problems of the international scientific agenda and is not incorporated into training processes.

Professors who are also researchers in this university model have clear arguments about knowledge production in the eminently scientific mode:

“…we feel we are a university that generates knowledge. We support that affirmation with the number of annual publications the university has in internationally circulated journals; ...accredited, peer-reviewed... we produce many more than one-hundred articles each year in SCI (Science Citation Index) or SSCI (Social Science Citation Index) journals” (I18).

- The research model is free since there is no definition of priorities for executing knowledge-producing activities, which are fulfilled through university research projects or
programs, designed and executed in relation to the researcher’s own interests and the international scientific agenda. The relevance of the project or program in relation to problems in its surroundings is residual or incidental.

With regard to this, one of the researchers interviewed, who belonged to the academic personnel at the UCV, made an affirmation that demonstrates the free research model: “there is no scientific and technological research policy in the universities; each one exerts his/her will because there is this thing called autonomy and another thing called academic freedom.” (I19)

In contrast, in the emerging university model, knowledge production responds to the following characteristics:

• Diverse ways of knowing and their multiple cultural manifestations are recognized and recovered in university spaces: scientific knowledge, daily, ancestral, popular and community wisdom. The “dialog among ways of knowing” and interaction with the communities to generate knowledge distinguish this model.

Actors in this model argued in favor of accepting this concept in the following terms:

“…the vision we have is broad; we consider that the condition of making science is much broader, much more social than only the condition of research…science and technology with and for the people. If people do not create organic ties with the data-generating machinery, which is scientific research, it will be very difficult to transform that data into knowledge.” (I19)

Promoting the recognition of knowing inserted in reality is a fundamental part of this university model, even though it values systematization and theorization about reality:

“…let us be aware about what theoretically exists regarding the topic, put together a hypothesis and go to the community because popular knowing is also important in the discussion; however, some people deny this…” (I4)

• The predominant concept of research is formative, self-reflective, socially projected and prospective. Research is an activity identified with recovering ways of knowing that
are less strict, less formal and less committed to the creation of new knowledge or technology. Research works from a critical perspective and is directed toward transforming reality by satisfying contextual problems.

• The knowledge production model is oriented or guided; it organizes “ways of knowing” and generates experiences around a formative device called “project,” which is linked directly to priorities defined by institutional research lines and community, local and development needs delineated in public policies.

• Knowledge is generated in reality or the context of practical application; it incorporates actors from this context as co-creators; its application is immediate; it responds to demands from the environment; and consequently, it favors the social appropriation of knowledge. This model shows characteristics belonging to Mode 2 of knowledge production (Gibbons et al, 1994). It also approaches what De Sousa Santos (2008) proposes as “pluriversity” knowledge.

The UBV, an example of an emergent model, declares a double vision about knowledge production. The first is oriented toward increasing knowledge and the second, toward solving specific problems in the surroundings. The latter is considered the most important vision:

The research tasks of the University will be developed according to two lines of action. The first is oriented toward the process of generating knowledge to contribute to enriching fields of knowledge and, consequently, to the scientific, technological and humanistic development of the country. The second is oriented toward creating knowledge that responds to specific needs in the surroundings, thereby fulfilling its commitment to seeking solutions that improve living conditions in the communities and to integral development in the country, achieving the creation of more dignified living conditions (República Bolivariana de Venezuela, 2003).
The features described herein referring to knowledge production in each of the models explain why the greatest number of researchers accredited to the Programa de Promoción al Investigador or PPI (Program for Promoting Researchers) are located in universities corresponding to the preexistent model. This is an assessment policy that has been implemented for the Government of Venezuela since 1990 to improve research within the country by allocating money grants to selected researchers, according to their outputs and achievements.

To assess the scientific production of researchers, the PPI utilizes indicators linked exclusively with conventional science; for example, the number of publications in high impact journals, which explains the high proportion of accredited researchers located in universities representative of the preexistent model.

As can be seen in Table 13, out of the national total of 4,429 researchers accredited in 2007, 1,059 belonged to LUZ, 859 to the UCV, 451 to the USB and 6 to the UBV.

<table>
<thead>
<tr>
<th>Universities</th>
<th>LUZ</th>
<th>UCV</th>
<th>USB</th>
<th>UBV</th>
<th>Total of National Researchers Accredited to the PPI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Researchers Accredited to the PPI</td>
<td>1,059</td>
<td>859</td>
<td>451</td>
<td>6</td>
<td>4,439</td>
</tr>
<tr>
<td>Percentage of National Researchers Accredited to the PPI</td>
<td>23.86%</td>
<td>19.35%</td>
<td>10.16%</td>
<td>0.14%</td>
<td>100%</td>
</tr>
</tbody>
</table>


Table 14 presents the relation of accredited professors in the PPI to the total number of professors by university.
This assessment system has favored certifying research over providing significant responses to society, which has contributed to generating a national scientific culture corresponding to that favoritism. One of the researchers interviewed confirmed the adherence to these certification criteria in the following terms:

“…our own scientific community is becoming more conservative … it has to try to publish in the best journals; for this, the researchers have to copy the agenda of the North; and they have to do this because they have to be more scientific, because they have to legitimate themselves in societies that do not have science, that have no scientific tradition” (I21).

In 2008, the number of accredited researchers increased in all universities participating in the study, those of the preexisting as well as the emerging models. LUZ went from 1,059 to 1,198, which meant an increase of 13.13%; the UCV from 839 to 925, which represented 10.25%; the USB went from 451 accredited professors to 493, increasing its percentage by 9.31%. The UBV showed the greatest increase with 200%, going from 6 accredited professors to 18, although this number is insignificant if we consider the total universe of professors in that institution.

Analogously, the number of peer-reviewed and indexed scientific journals is much larger in the same group of universities because, as it is well-known, the edition of such journals obeys the concept of scientific production that accompanies the aforementioned model. In 2007, LUZ had 28 journals, the UCV had 31, the USB 15 and the UBV only one scientific journal, as can be seen in

<table>
<thead>
<tr>
<th>Universities</th>
<th>LUZ</th>
<th>UCV</th>
<th>USB</th>
<th>UBV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Professors</td>
<td>6,043</td>
<td>8,710</td>
<td>1,545</td>
<td>420</td>
</tr>
<tr>
<td>Researchers Accredited to the PPI</td>
<td>1,059</td>
<td>859</td>
<td>451</td>
<td>6</td>
</tr>
<tr>
<td>%</td>
<td>17.52</td>
<td>9.86</td>
<td>29.19</td>
<td>1.42</td>
</tr>
</tbody>
</table>

Table 15. Obviously, in addition to the duality between the knowledge production models, these figures reflect the temporal disparity between the preexistent universities and the UBV; the UCV is more than two-hundred years old; LUZ is over one-hundred years old; and the USB has 43 years of academic history.

Table 15
Scientific Journals by University (2007)

<table>
<thead>
<tr>
<th></th>
<th>LUZ</th>
<th>UCV</th>
<th>USB</th>
<th>UBV</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>28</td>
<td>31</td>
<td>15</td>
<td>1</td>
</tr>
</tbody>
</table>

Source: Universities.

In relation to the knowledge production model, it is necessary to clarify that if the comparison permits us to isolate some distinctive features, it also helps to detect coincidences between the two models that reveal overlapping characteristics. For example, the UBV declares as goals the constitution of links between peers, participation in scientific events, publications in journals of “great prestige” with national and international circulation, integration in research groups and use of the Internet to communicate results, all aspects that reflect the knowledge production model conventionally accepted by international scientific standards and universities of the prevailing model. Those, on the other hand, include among their research objectives the production of knowledge capable of advancing in the solution of national problems and contributing to the country’s sustainable development.

This concern for the social value or relevance of knowledge is expressed intensely in the higher education environment. In 1998, at the World Higher Education Conference, relevance was highlighted as one of the key factors of such activity and was related to “being in touch” (United Nations Educational, Scientific and Cultural Organization, 1998a). However, Vessuri (1998: 417) stated that, much more than being in touch, “it refers… to the participation of higher education in the search for solutions to urgent problems such as population, environment, peace and international understanding, democracy, human rights.”

Ten years later, when this author was interviewed in 2008, she put the same argument in the following terms:
“...our countries have terrible social debts, all these physical problems, health, contamination...we have to do something and we cannot set being in a developed world as our only priority. We cannot say: now we're going to do nano-technology, when the investments are phenomenal. We cannot do that, but we do have to have people who are knowledgeable; and therefore, we need to have basic scientists... we have to develop strategic areas... basic science and its international indicators are important, but also science that points to solving problems from reality” (I21).

The knowledge production mode expressed in the emerging university model, which has partially permeated the preexisting model, goes beyond “being in touch.” It bases the integration of university research action with reality on a conjunction of types of logic, interests and social transformation that substantially affect the knowledge production concept predominant in universities by tradition. This idea is argued by De Sousa Santos (2005) who supports the concept of “pluriuniversity knowledge,” which is contextual, determined by its potential extramural application, and results from an agreement between researchers and users. Consequently, it develops a transdisciplinary logic that demands dialog or confrontation among different types of knowing, which makes it heterogeneous and typical of open systems.

A director at the UBV, and former Dean at a university associated with the preexisting model, expressed criticism of the knowledge production mode that rules in traditional universities: “this mode (referring to the preexistent universities) is already exhausted; this mode is pure consumption and it consumes income, consumes budget and its research is irrelevant, it has no impact, it is an act of academic narcissism, an act of academic promotion that has no social impact” (I10).

These statements reveal a contradiction with the perception regarding modern science developed in universities identified with the preexisting model, illustrated by Langer (2008: 27):

...the scientist should be completely free and self-determined, and consequently, development of his knowledge should not follow any other logic but his
own. Knowledge thus obtained will only be useful for him/her and not for others. Nonetheless, the advance in the world’s understanding that this man of science develops contributes to social progress.

In summary, in the preexisting university model, the knowledge production mode is free, scientific research and the scientific relevance of knowledge prevail; communities are only considered as the beneficiaries of such knowledge. On the other hand, in the emerging university model, the guided mode is predominant; the knowledge accredited is the result of a dialog among ways of knowing; the social relevance of knowledge is prevalent; and the community is accepted as a co-producer of knowledge.

**Project Concept**

The project is, in any type of organization, a device that coordinates the performance of successive actions oriented toward attaining certain goals. In the case of higher education institutions, the project is an academic resource that has assumed different meanings. The concept of project is important for our analysis because it points out substantial differences between the two university models we are comparing.

In the model corresponding to preexistent universities, the strict concept of project is assumed, understanding it as the formal structure that expresses elements, steps and strategies to produce knowledge according to conventional scientific standards. This strict sense is also expressed in projects that do not have knowledge production as their primary objective, but rather the execution of systematized actions that serve other university purposes or functions.

Different types of projects, besides those for research, are developed, i.e. extension and community projects. In Venezuela, the latter, even though they respond to a systematic methodology foreseen in the Ley de Servicio Comunitario del Estudiante de Educación Superior (Community Service Law for Higher Education Students), are also directed toward realizing actions with a direct impact on reality. This law states that all universities must offer projects that allow their students to comply with the graduation requirement of having performed 120 hours of community activities in the second half of their undergraduate studies. Article 22 establishes that:
The projects should be drawn up responding to the needs of the communities, offering solutions in a methodological way, taking into account municipal, state and national development plans. The presentation of projects to the higher education institutions could be the initiative of: the Ministry for Higher Education, higher education institutions, higher education students, labor unions, public institutions, private institutions and organized communities (República Bolivariana de Venezuela, 2005a).

Extension projects are oriented toward connecting university academic activities with community problems and disseminating knowledge from the university to the surroundings in different ways. A common expression of extension projects is sharing cultural manifestations with communities outside the university. On many occasions, these projects adopt paternalism and assistentialism as a defining pattern for the activities performed (Garcia Guadilla, 2008).

In the emerging model, the concept of project has a broad meaning. It is the organized expression of tasks and practices of learning, reflection and performing in formal and non-formal contexts to solve problems in the communities and institutions where they are executed and to promote development. Projects in this sense also create a connection between training and social transformation through their political nature, since they serve as the instrument for incorporating socio-political action into the curriculum.

In the proposal for creating the UBV, the project is defined as the “transversal axis for the ideological, political training process...for students, teachers and workers in the university educational system... Project as an emerging paradigm associated with the philosophy of the House of Ways of Knowing” (Universidad Bolivariana de Venezuela, 2008a: 5).

In the UBV’s foundational document, the orientation ascribed to projects is the following:

...pedagogical projects and experiences that coordinate content, formative research and social projection will be brought about and consolidated to involve professors and students in practices that integrate in-
intellectual, ethical, aesthetic and professional dimensions, that promote educational achievements associated with the social, ethical and political intentions of training students at the undergraduate as well as advanced levels of education (República Bolivariana de Venezuela, 2003: 42).

Projects in this university model should favor social mobilization "...generating active incorporation, facilitating the transfer of power from the real connection of reality-knowledge" (Universidad Bolivariana de Venezuela, 2008a: 28).

Learning through the project ought to lead to:

...learning, reflecting and acting, in formal and non-formal contexts, to the acquisition of academic and professional competences, to contributing solutions for problems in the institutions or communities where they are executed, as well as simultaneous attention to numerous groups (Universidad Bolivariana de Venezuela, 2008b:12).

Table 16 shows quantitative information about research, extension and community service projects in preexisting universities. It was not possible to obtain figures for the UBV because the project is a generalized and permanent curricular connector.

<table>
<thead>
<tr>
<th>Table 16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Projects of Research, Extension and Community Service by University (2007)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of Project</th>
<th>LUZ</th>
<th>UCV</th>
<th>USB</th>
<th>UBV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research</td>
<td>420</td>
<td>663</td>
<td>183</td>
<td>It is not possible to enumerate the types of projects because all activities are integrated around one axis, which develops research, training and political-social action.</td>
</tr>
<tr>
<td>Extension</td>
<td>7</td>
<td>10</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Community Service</td>
<td>339</td>
<td>42</td>
<td>36</td>
<td></td>
</tr>
</tbody>
</table>

Source: Universities
Concerning this issue, there is also a coincidence to point out between the two university models. Extension and community projects at universities from the preexistent model are linked, in many cases, to needs detected in the communities, an attribute similar to that of the UBV projects. For thorough information, see Annexes F and G.

Briefly, project is understood strictly in the preexisting university model, while in the emerging university model, project has a political character and is conceived as an organized expression of social tasks and practices.

**Insertion of Knowledge into Reality**

Scientific knowledge generated at preexisting model universities responds to problems and priorities defined, principally, by world scientific tendencies; therefore, they are rarely inserted into the local reality. The most qualified groups of researchers generate knowledge that permits them to achieve international recognition and accreditation through the publication of their papers in high impact journals. Indeed, the USB and the UCV are the institutions with the greatest range of papers published or quoted in SCI and SSCI journals. This condition explains why the knowledge produced in such universities follow the international scientific agenda. In spite of the fact that there are some “good practices” that reveal knowledge production linked to precise problems in specific contexts, these good practices are isolated and do not indicate the majority tendency in the academic dynamic.

Knowledge generated at universities from the emerging model responds to solving strategic problems in the context and is based on research needs centered on human and sustainable development for the country and its Latin American and Caribbean surroundings. Because the project concept prevails in this model, all students and all projects performed by them during their academic training periods are related to reality and their surroundings.

Consequently, it can be said that the construction of knowledge occurs “in, for and with” the community through the project, which generates the curricular coordination of training, research and transformation into one generalized, permanent practice for all the stu-
dents, professors and community actors. From this viewpoint, each student or group of students is a project in him/herself.

In a few words, the knowledge produced is linked to the international research agenda in the preexisting university model; in the emerging university model, it is linked to an agenda of contextual problems.

**Spaces for Knowledge Production**

In universities from the preexisting model, the appropriate spaces for knowledge production are laboratories, centers and institutes endowed with the necessary physical structure and equipment. That is why we call this model “intramural,” even though it conceives that knowledge resulting from experience produced in extra-university spaces is complementary to student or professional training.

In the emerging model, these spaces are multiplied through two strategies: the project and municipalization. Communities, cooperatives, small businesses and also the school, home, the public square, the indigenous settlement, as well as small towns, are converted into spaces where knowledge is reproduced. At universities from this model, work is performed only exceptionally in laboratories and other classical scientific production environments; such installations are not common at these university headquarters and are non-existent at university villages. That is why we call this model “extramural.”

In universities from the preexisting model, as well as those from the emerging model, a support structure for knowledge production is organized in research units (centers or institutes), even though their structure varies internally. Some integrate different laboratories and research dependencies that cover a complex and diverse area of study; others consist of researchers committed to a specific area. Table 17 shows the number of research units per university.

<table>
<thead>
<tr>
<th>Table 17 Research Units (2007)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LUZ</td>
</tr>
<tr>
<td>-----</td>
</tr>
<tr>
<td>151</td>
</tr>
</tbody>
</table>

Source: Universities.

*These 6 units include 69 laboratories.
The 39 research units at the UBV are located mainly in its central headquarters. Recently, the creation of a structure has been proposed that reflects the broad sense of knowledge production revealed at the UBV: “Create a research center that facilitates links or networks of research activity, with teams for collecting and analyzing information and that allows students to work in inter-institutional cooperation, seeking solutions to local, regional and national problems” (Universidad Bolivariana de Venezuela, 2008b:12).

On consulting the students about knowledge production spaces, those coming from both models showed an integrating posture, recognizing that the knowledge supporting their training is developed in the university, but it is validated, reconstructed and complemented in reality:

“…it is true that a great part of human education as such is found mainly in the university, in this case LUZ; however, also in life outside the university field, one has many places to learn; for example, in our homes, with our friends, with one’s partner, husband or wife or girl/boyfriend, as well as with friends […] but education within a school, within an educational entity as such, is of great importance” (FG1).

“…knowledge is also in society and I think that knowledge is in the university and in society. It takes a mixture of the two to train a great professional, a good professional. I think a mixture of the two has to exist: knowledge from the universities, but also knowledge that exists in communities; the knowledge of the worker, knowledge of the fisherman, knowledge of the lady who makes the ‘empanadas’, the mixture of all, the mixture of what the communities have” (FG9).

Most students who participated in focus groups for both university models (preexistent and emergent) considered that, to be able to coordinate the university with development, one should have the will to change the way of conceiving how knowledge is produced. Consequently, they gave value to knowledge derived from the community, based on which the university could make contributions of scientific knowledge for solving situations that need to be overcome.
“…the university is the space for scientific knowledge, and the social context is the area for application, and this is so because the reflection is located situationally; that is, reflection comes from the position of the student who does not abandon his role, his surroundings nor his daily experiences” (FG3).

“…university knowledge is considered theoretical and the external context is the space for application, practice, field experience, work experience. Knowledge is, then, conceived as the product of that complementary relationship” (FG4).

“…the university is a factory par excellence for knowledge as long as the university is connected to the community. In the university, all the knowledge that the communities have is processed; I have visited communities while studying certain courses and the communities do have a great deal of knowledge” (FG5).

In a few words, knowledge production in universities of the preexisting model is accomplished intramurally (in units, centers, institutes and laboratories); in universities of the emergent model, it is accomplished extramurally (in the community, the factory, small towns, farms, social organizations in general).

**Competent Actors for Knowledge Production**

In the preexisting university model, these actors are professors/researchers and, as an exception, students. Communities participate, in many cases, as beneficiaries of the contributions from university action, but not as proponents or leading actors in its conception and execution. The common idea that prevails is the university as the social actor who possesses knowledge and goes out to its surrounding reality to apply it.

Even though the Ley de Servicio Comunitario del Estudiante de Educación Superior foresees that organized communities, professional associations, as well as public and private institutions, can propose community projects, this disposition does not imply that they participate in knowledge production, since these projects apply knowledge, but do not generate it.
The alternative model includes extra-university actors. Indeed, community actors not only have responsibilities in the design and execution of the project, but also participate in evaluating the students. Along with the students, community actors create an attitude that values the historical moment they are experiencing from a socio-political viewpoint, which demands that they define themselves as transforming agents practicing research, integration and citizenship development. All this implies that the community participates as co-author and executor of the academic projects. Formative research programs must be approved by the social collectives.

The recognition of diverse actors active in knowledge production was expressed by one of the interviewed professors, who belongs to the emerging university model:

“…when we talk about a research team or a research collective, we are referring as a primary argument, to a community project. This community project should begin from, for and with the community; that is, the community is the fundamental protagonist within the collective” (18).

In the preexisting university model, only academics are competent actors for knowledge production; in the emerging university model, such actors are also the members of the “third knowledge production sector.”

Relationship of the University with the National Project for Science & Technology and Other Crucial State Plans

In the preexisting university model, national policies are not binding for university performance. On many occasions, the universities resist or ignore strategies derived from public policies. The previous idea is reflected in the following words expressed by M. Egilda Castellano, Vice-Minister of Academic Policies for the Ministerio de Educación Superior (Ministry of Higher Education) in 2002, and Coordinator, in 2003, of the commission that drew up the project for creating the UBV:

The universities were very slow and resistant to change. They accepted it theoretically, but when called on to act, they did not act with the speed the revolutionary process demands. And they continue to act slowly; this has not changed (Consejo de Redacción, 2004).
The alternative model assumes as its guidelines the Plan for Social and Economic Development of the Nation, the Policies and Strategies for Higher Education and the National Plan for Science, Technology and Innovation. Indeed, the UBV practices a continual review of its statutes in order to adapt them to the national plans.

In 2005, as a strategy to facilitate the relation of the university with the National Project for Science and Technology and other crucial public policies, the State approved the LOCTI, which imposes a contribution on firms to finance those activities. It is important to mention that in 2007, the UBV received $6,873,479.39, while LUZ and the UCV received only $706,831.26 and $6,609,004.80, respectively, despite the fact that the last two carry out most of the scientific research in the country, are better equipped, and have been dedicated to this activity for more years than the UBV (See Table 18).

<table>
<thead>
<tr>
<th>Universities</th>
<th>LOCTI contribution to universities</th>
<th>LOCTI contribution to universities</th>
<th>LOCTI contribution to universities</th>
<th>LOCTI contribution to universities</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOCTI</td>
<td>LUZ</td>
<td>UCV</td>
<td>USB</td>
<td>UBV</td>
</tr>
<tr>
<td>BS.F</td>
<td>1,519,687.21</td>
<td>14,209,360.31</td>
<td>35,390,217.59</td>
<td>14,777,980.68</td>
</tr>
<tr>
<td>US$</td>
<td>706,831.26</td>
<td>6,609,004.80</td>
<td>16,460,566.32</td>
<td>6,873,479.39</td>
</tr>
<tr>
<td>Research projects financed through LOCTI</td>
<td>16</td>
<td>251</td>
<td>87</td>
<td>3</td>
</tr>
</tbody>
</table>

Source: Observatorio Nacional de Ciencia, Tecnología e Innovación, 2008.

In conclusion, it is accurate to affirm that preexisting universities do not demand or facilitate real connections with national plans; in the universities of the emerging model, knowledge production efforts are linked to them.
Destinations for Research Results

In preexisting universities, knowledge is generated with the prime goal of publishing it in scientific journals, which favors their positioning in the PPI and other research accreditation programs that operate according to conventional science and technology indicators. This has motivated institutions to promote the publication of journals in order to offer their researchers the means for disseminating the results of their work. As a matter of fact, in 2007, according to the information provided by the universities, the UCV had 41% of the peer-reviewed journals published by the universities under study; LUZ had 37%; the USB 20% and the UBV 1%, as was shown before in Table 15.

In 2008, the information provided by the General List of Scientific and Technological Publications of the FONACIT shows that the UCV has 32 registered scientific journals, LUZ 30 and the USB 4. (Gobierno Bolivariano de Venezuela, 2008a). These figures for 2008 reflect the fact that this list is made up through the voluntary presentation of the journal to be evaluated by referees designated by the Fund in accord with scientific mainstream indicators. Within the list, there are three categories: first, the Register, second the Consolidation Program, and third, the general list. LUZ is in the first position with the highest number of journals on the first and the second levels, which implies that its journals have obtained an average above 68%. Besides, for 2009, this university exhibited 6 journals indexed in the SCI and the SSCI.

Patents could be another destination for research results; however, their number is insignificant (25 at LUZ and 14 at the USB), which seems to indicate that innovation is not a result of the scientific activity at these universities.

In the emerging model, the destination for knowledge production is guided by its social appropriation. The final objective is the recovery of knowledge and its meaning “in and from” the community and not only its publication in scientific journals. Nevertheless, the UBV has edited and published its first scientific journal, titled “Diálogo de Saberes” (“Dialogue among Ways of Knowing”) dated January-April 2008, in order to create visibility for research
results according to scientific criteria, without ignoring the social orientation of that activity.

Another of the interviewed researcher-professors, ex Vice-Minister of Planificación para la Ciencia, la Tecnología y la Innovación (Planning for Science, Technology and Innovation), expressed a vision that combines the destination of scientific knowledge with solving problems in reality:

“...you have to give social visibility to the sciences so that they make sense, because if you don’t, they can be an exquisite game with very sophisticated toys that has nothing to do with everyday life in the surrounding world... it is not just that science has to be only utilitarian, but that science does have to have a use;...sometimes one finds that in many universities they think the coordinates of reality do not pass through university councils, and this is not so; the world functions and if we don’t respond to those coordinates, it continues functioning”(119).

The destination for research results in the preexisting model is scientific publication; transformation of reality is the final goal for research in the emerging model.

To close description of this first axis related to knowledge production, we present Table 19, which synthesizes the comparison between the preexistent and emergent university models in Venezuela in terms of knowledge production.

<table>
<thead>
<tr>
<th>Table 19</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Comparison between the Preexistent and Emergent University Models Related to the First Axis: Knowledge Production.</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>KEY FEATURE</th>
<th>PREEXISTENT UNIVERSITY MODEL</th>
<th>EMERGENT UNIVERSITY MODEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gnoseological Approach</td>
<td>Knowledge is the product of systematic and scientific processes. Distinguishes two types of knowledge: the university or scientific and the extra-university or colloquial.</td>
<td>The origin of knowledge is experiential and is related to everyday life.</td>
</tr>
</tbody>
</table>
### Table 19
Comparison between the Preexistent and Emergent University Models Related to the First Axis: Knowledge Production (Continued)

<table>
<thead>
<tr>
<th>KEY FEATURE</th>
<th>PREEXISTENT UNIVERSITY MODEL</th>
<th>EMERGENT UNIVERSITY MODEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge Production Mode</td>
<td>Free mode.</td>
<td>Guided mode.</td>
</tr>
<tr>
<td></td>
<td>The knowledge accredited is the result of rigorous, systematic scientific knowledge.</td>
<td>The knowledge accredited is the result of a dialogue among ways of knowing.</td>
</tr>
<tr>
<td></td>
<td>Scientific Research.</td>
<td>Formative research that is self-reflective, socially projected and prospective.</td>
</tr>
<tr>
<td></td>
<td>Communities as beneficiaries of knowledge.</td>
<td>Communities as co-producers of knowledge.</td>
</tr>
<tr>
<td></td>
<td>Scientific relevance of knowledge.</td>
<td>Social relevance of knowledge.</td>
</tr>
<tr>
<td>Project Concept</td>
<td>Strict: formal structure.</td>
<td>Broad: organized expression of social tasks and practices.</td>
</tr>
<tr>
<td></td>
<td>Types of projects: research, extension and community.</td>
<td>Political character.</td>
</tr>
<tr>
<td>Insertion of Knowledge into Reality</td>
<td>Knowledge produced linked to the international research agenda.</td>
<td>Knowledge produced linked to an agenda of contextual problems.</td>
</tr>
<tr>
<td>Spaces for Knowledge Production</td>
<td>Intramural: units, centers, institutes and laboratories.</td>
<td>Extramural: the community, the factory, small towns, farms, social organizations in general.</td>
</tr>
<tr>
<td>Competent Actors for Knowledge Production</td>
<td>Academics: researchers, graduate students.</td>
<td>Students, communities, ethnic groups, (third knowledge production sector).</td>
</tr>
</tbody>
</table>
SECOND THEMATIC AXIS: CONCEPT OF THE UNIVERSITY

The concept of the university is the second thematic axis of our Theoretical Model. The criteria for comparison are defined taking into account two essential aspects: the social function of the university and its academic-organizational structure. The key features that organize the information are: orientation of the university, university government, academic-administrative organization and the training model.

Orientation of the University

In the preexisting Venezuelan model, university functions are: teaching, research and extension; the first is dominant, since the university is considered predominantly an institution for training professionals. It is obvious, then, to say that its priorities, efforts and assigned resources are oriented primarily toward graduating professionals; meanwhile, the assignment of resources to knowledge production is minimal; and for extension or community services, assignments are scarce and circumstantial. The University of Zulia dedicated only 1.63% of its budget to research; the UCV dedicated 2.50%
and the USB, 3.58%. At the UBV, there is no explicit differentiation in the budget between the research and training functions, due to the knowledge production mode adopted (See Table 20).

The professionalizing orientation of universities in the preexistent model has historically sought to respond to labor market demands coming from the public as well as the private sector of economy whose expectations are centered on giving the graduate the necessary abilities and skills so that he/she can be incorporated in the production of goods and services.

In contrast, knowledge production activity is quite marginal, although 85% of the scientific research in Venezuela is produced at these universities. The situation becomes evident on verifying that the country has only 236 researchers for every million inhabitants and 0.6 researchers for every 1000 people in the work force, figures that are significantly low compared with those of developed countries and other countries in the region, such as Chile and Argentina (Centro Interuniversitario de Desarrollo, 2007). On the other hand, there is a significant discussion about what percentage of this university research activity translates into research products that promote development. Table 21 shows some R & D indicators in Venezuela.

Table 20

<table>
<thead>
<tr>
<th>Universities</th>
<th>Total Budget (BsF)</th>
<th>Total Budget (US$)¹</th>
<th>Research budget (BsF)</th>
<th>Research budget (US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LUZ</td>
<td>522,150,040</td>
<td>242,860,483</td>
<td>8,500,000 (1.63%)</td>
<td>3,953,488</td>
</tr>
<tr>
<td>UCV</td>
<td>711,886,838</td>
<td>331,110,157</td>
<td>3,092,360 (4.37%)²</td>
<td>8,292,485</td>
</tr>
<tr>
<td>USB</td>
<td>250,388,592</td>
<td>116,459,810</td>
<td>8,973,500 (3.58%)</td>
<td>4,173,720</td>
</tr>
<tr>
<td>UBV</td>
<td>169,129,028</td>
<td>78,664,664</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Source: Oficina de Planificación del Sector Universitario, 2008

¹ Conversion factor 1 $ = BsF 2.15 (for 2007)
² Budget includes: ordinary budget, special assignations, contributions for researchers, capitalization of interest and own income.
The emergent model expresses two of the denominations contained in the title “Orientation of the University” in our Theoretical Model: the university oriented toward development and the socialist university.

Developmental University means that its mission is to generate knowledge to solve problems “in, with and for” the contexts in which the university is located and to construct capacities that contribute to human and sustainable development.

At this point, it is important to add that the essential vocation of the UBV is not knowledge production, but rather capability building and training in socialist values; therefore, its association with the Developmental University model is partial, and it fits better into the socialist orientation. For this reason, it moves away from the first condition stated by Sutz (2005), according to which these universities should maintain a high level of research and a significant amount of researchers and students dedicated to creative scientific activities.

The Venezuelan government, expressly dedicated to transforming Venezuela into a socialist country, warned that without human resources trained under this political ideology, who could identify themselves totally with the proposal of this political project, it would be impossible in the long run to sustain the proposed steering of the country toward a socialist regime. At the same time, the national government witnessed a significant social demand for higher education that had historically been unsatisfied by the established higher educa-

### Table 21

<table>
<thead>
<tr>
<th>Some Research &amp; Development Indicators in Venezuela (2007)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Researchers per Million Inhabitants</td>
<td>236</td>
</tr>
<tr>
<td>Total Number of Researchers</td>
<td>5,860</td>
</tr>
<tr>
<td>Researchers per Thousand People in the Work Force</td>
<td>0.6</td>
</tr>
<tr>
<td>Annual Production of Internationally Registered Articles</td>
<td>Less than 1,000</td>
</tr>
<tr>
<td>GNP Expenditure on R &amp; D</td>
<td>Less than 0.5%</td>
</tr>
<tr>
<td>Participation in World Total of Quotations from Science and Engineering Articles</td>
<td>0.04%</td>
</tr>
</tbody>
</table>

tion system, which permitted a high exclusion rate affecting, principally, a significant percentage of the population’s poorest classes. So the aim of a socialist university in Venezuela would be to train citizens in socialist values that fracture the capitalist hegemony in national and international socio-cultural systems.

Considering this circumstance and taking advantage of the growing resources derived from the high price of oil, the national government decided to create the UBV in 2003, as an alternative university able to cover the demand for the human resources the government requires for working in the different levels or organisms that further its political project. The human resources enrolled at the UBV are trained with a vision totally different from what they would acquire in a conventional and preexistent university education. At the UBV, they develop professional competences and skills that do not satisfy the demands of private enterprise and the industrialized world, but satisfy the expectations and requirements of their future employer, the Venezuelan State, and the tasks they are destined to perform in State branches and apparatuses.

The UBV was created and functions to consolidate itself as a socio-political project with a high degree of socialist ideology, whose ultimate aspiration is the formation of a new citizen imbued with socialist values, as declared in its foundational documents and reports of internal debates.

The Bolivarian University of Venezuela was born as an ethical-political project of a social-educational character to train the new citizen professionals and professional citizens required by the Venezuelan State to satisfy sensitive areas of our endogenous development and, at the same time, help to re-found the Republic, conscious of their revolutionary commitment and high technical-political-social responsibility (República Bolivariana de Venezuela, 2003: 81).

In this institution, the information that is handled, read, discussed and reflected upon must mirror only one concept of the world and of life, a vision called by some progressive, in the forefront, emancipating, anti-imperialist, anti-liberal; in a word, socialist.
The critical capability of students and graduates is built only on combating the concepts, structures, organizations and practices committed to the liberal or neoliberal model of socio-political organization and the globalized capitalist production mode. During the entire educational process, activities are carried out to identify the student with the “Bolivarian” project; therefore, it becomes a given that everyone who participates in the UBV – teachers, students, administrative officials or workers—must be a defender and multiplier of the revolutionary process put forth by the current Venezuelan Government. Consequently, it is expected that they accomplish political, electoral tasks and proselytism.

Education, more than the study of a specified area of knowledge, is fundamentally the integral training of citizens. Therefore, under this criterion, the UBV should, must and needs to be a university in which ...the knowledge, values and attitudes needed to form the revolutionary conscience are empowered...A university with a socialist education to train a revolutionary subject coherent with a socialist state that breaks with the hegemonic cultural system, which is predominantly capitalist (Gobierno Bolivariano de Venezuela, 2008b).

Thus, in the preexisting model, the orientation of the university is professionalizing; university functions are research, teaching and extension. In contrast, in the emerging university model, the orientation is toward development and socialism; university functions are integral training, formative research and social-community integration.

**University Government**

In preexisting universities, the government is elected in a direct and democratic manner with the participation of professors and students. That is why government structure in most of the universities identified with this model possesses the following structure³:

³ It is important to note that many of the governmental structures and dependencies mentioned in this subtitle have changed their names or have disappeared due to legal reforms that have affected the organization of National
a) The University Council, which is the highest academic-administrative authority. It consists of the Rector, who presides over it, the Vice-Rectors, the Secretary, Deans of the Faculties, five representatives of the professors, three student representatives, one representative of graduated students and a delegate from the Ministro de Educación Superior (Minister of Higher Education).

b) The faculty assembly, constituted by the professors at the medium and high levels of the university academic ladder and a representative number of students; the dean and the faculty council, represented by the school directors and elected representatives of the professors and students; the school director and the school council, represented by the heads of knowledge areas, and elected teachers and students.

c) The central authorities are the Rector, Academic Vice-Rector, Administrative Vice-Rector and Secretary.

d) Those in charge of managing research activities are the Technical Councils and the Directors of Centers, Institutes and Divisions.

Among the universities existing before the UBV, some have a matrix-like structure, such as the USB, an institution that was part of our case studies. Its government consists of:

a) The High Council, which is the highest authority for determining development plans for the institution and their supervision and evaluation. It is made up of two representatives from the National Government: the Vice-Ministro de Educación Superior (Vice-Minister of Higher Education) of the Ministerio de Educación, Cultura y Deportes (Ministry of Education, Culture and Sports) or their representatives; five representatives from the staff professors, two student representatives, a representative of the graduates; a representative from OPSU; a representative of the Ministerio de Planifica-

Government. Nevertheless, they are conserved in this book since the university regulations that include them have not been modified.
ción y Desarrollo (Ministry of Planning and Development); a representative of the Consejo Nacional de Investigaciones Científicas y Tecnológicas-CONICIT (National Council for Scientific and Technological Research); a representative from the Consejo Venezolano de la Industria (Venezuelan Council for Industry); and a representative of the Consejo Nacional de la Cultura (National Council for Culture), as well as the university authorities.

b) The University Directing Council has the objective of determining standards for academic and administrative functioning in the University. It is the organism for academic and administrative leadership, exercises governance over the Institution and its members are: the Rector who presides over it, the Vice-Rectors, the Secretary, the Director of the Núcleo del Litoral (Coastal Center), the Division Directors, the Deans, two representatives from the professors, one representative from the students, one representative from the employees and a delegate from the Ministro de Educación (Minister of Education).

c) The Deans’ Offices and their Coordinating Groups carry out the design, planning, coordination and evaluation of the teaching, research and extension programs of the Divisions, with their ascribed Departments and Laboratory Units, which are the dependencies responsible for executing these programs.

The government structure is vertical and the co-government form is applied, since there is a representation of professors and students in decision-making organisms and processes.

Autonomy within this model is defined in the Ley de Universidades as: a) Organizational autonomy, by virtue of which they can dictate their internal standards; b) Academic autonomy to plan, organize and carry out the research, teaching and extension programs needed to fulfill their ends; c) Administrative autonomy, to elect and name their own authorities and designate their teaching and administrative staff; d) Economic and financial autonomy, to organize and administer their patrimony (República de Venezuela, 1970).

In the recently developed university model in Venezuela, which we have called emergent, the central authorities are: Rector, Vice-Rector, Secretary and Academic Director, who are
named directly by the National Government. The UBV government structure, representing the emergent model university, is organized as follows:

a) The High Council of Advisors is the supreme organism for the institution and consists of the Ministro del Poder Popular para la Educación Universitaria-MPPEU (Minister of Popular Power for University Education), university authorities - mentioned in the previous paragraph - and three personalities of recognized academic prestige.

b) The Directive Council, which is a collegial organism consisting of the Rector, who presides over it, the Vice-Rector, the Secretary, a representative from the Ministry of Popular Power for University Education, one representative from the professors and one from the teaching assistants (teachers who do not have a higher education degree), one representative from the formal students (registered in main centers), one from the non-formal students (registered in university villages), one administrative and one workers' representative.

c) The Executive Council is made up of the Rector who presides over it, the Vice-Rector, the Secretary, the Academic Director and the Coordinators of the academic areas.

d) The Social Council is a university authority that coordinates society’s participation in the university.

e) The Council for Academic Programs, which constitutes the basic nucleus of academic activities and the space for integrating activities derived from the substantive functions of the UBV. It is a collegial body and consists of the Academic Director, who presides over it, the Academic Area Coordinators and a representative from each area.

f) The University Ombudsman safeguards the rights of all citizens that constitute the UBV, including the communities linked to it.

At the UBV, autonomy is responsible in the sense that it has the duty to answer to the State and to society for what it does to fulfill its mission. Autonomy does not exclude social accountability for its tasks, concerning the use of financial resources and the accomplishment of teaching, research and extension activities.
Autonomy is expressed in the exercise of democratic participation by its academic bodies.

The new Ley Orgánica de Educación (LOE) includes a representation of all university actors (professors, students, administrative staff and workers) in decision making. Article 34, number 3, incorporates, as one of the functions for exercising university autonomy: “electing and naming its authorities based on democracy that is participative, protagonist and has an irrevocable mandate” (República Bolivariana de Venezuela, 2009).

Furthermore, according to this new law, this autonomy implies: “Establishing its flexible and democratic, participative and efficient structures to dictate its standards of government and its internal rules according to what is established in the Constitución Nacional (National Constitution) and in the LOE itself” (Article 34, number 1); “to plan, create, organize and carry out programs for training, intellectual creation and interaction with the communities” (Article 34, number 2); and, “administrate the university patri-mony with austerity, just distribution, transparency and accountability, under the internal control and vigilance of the Controlling Council and external control by the State” (Article 34, number 4) (Republica Bolivariana de Venezuela, 2009).

In brief, university government in the preexisting model is direct and democratic; it includes co-government (professors and students) and its autonomy is organizational, academic, administrative, economic and financial. University authorities in the emergent model are designated by the National Government; it includes co-government (professors, students, administrative staff and workers) and its autonomy is associated with accountability.

**Academic-Administrative Organization**

The organizational structure of most preexisting universities responds to the model of Faculties and Nuclei, Schools and Divisions, Centers and Institutes, Departments and courses. Some pre-existing universities, such as the USB, have a matrix-like structure: Dean’s Offices according to functions, Academic Areas, Coordinator’s Offices, Divisions, Programs, Centers and Institutes.

At the UBV and other universities created according to the alternative model, the organizational structure is also matrix-like,
but University functioning responds to the educational logic belonging to this model, explained under the subtitle “Orientation of the University.” The academic-administrative organs are: Academic Areas, Academic Nuclei, Academic Units, Academic Programs, Academic Program Councils, Advanced Research and Training Center and Training Programs. As indicated before (See “Spaces for Knowledge Production”), a new structure is being studied to satisfy demands made by the dynamics of the Projects.

**Training Model**

Training in the preexistent university model is characterized by:

- Orientation toward professional training with a technical-scientific focus: the university trains “for” society, but not “with” society. The study plans point toward scientific and technological training to endow the professional with the competences that the labor market demands.

- Commitment to integral training in terms of guaranteeing the scientific-technological component that supports the profession; and furthermore, humanistic, personal and social formation.

- The profile of graduates is expressed in competences designed and systematized in the university with very little participation from the society to which this professional will offer his/her work.

- The majors and programs offered follow the classic disciplinary division for the most part. Therefore, the central training axes have their greatest weight in areas considered a support for the profession in its basic and specialized dimensions, favoring the organizational and academic over the socially relevant.

- The profile of graduates is expressed in competences. However, contact with reality to validate the relevance of the competences developed is limited to a very short time during the final professional practice.

One of the professors belonging to a university of the preexisting model manifested her concern for the relevance of the train-
ing processes in terms of duration, dynamic and response to the problems of reality:

“we are realizing that many of our curricula need updating, that possibly there is a need to shorten the length of the majors, review the luxuriance of the contents; adjust the contents more to those realities that have a lot to do with what ought to be, with learning to do, knowing, … it is necessary to review the credit units, work more with a sense of interdisciplinarity, so that the student can go along constructing his own curriculum to the degree that he is closer to his process of graduation, which also helps him to be more competitive, not only as a professional but also in the world of work where he will perform as a citizen and professional” (I14).

This practice of training for society without having contact with it was manifested by students at this university model:

“…the university is giving us the theoretical bases so that we can apply the practical part afterwards in our field of work. Knowledge is in the university, because that is where the tools are that are going to be useful for defending yourself when you have to go into reality” (GF5).

“…first one needs to go through the university to be able later to apply the knowledge. Not simultaneously, as is proposed in the discussions of other universities. Because we arrive at the university and begin to learn what we are going to do, a career; I want to be an engineer and if I begin to work in engineering without having studied anything - the same for a doctor- this just can’t be” (GF6)

• Organizational elements of the curriculum are: 1) Areas: General, Basic, Specific and Professional Practices; 2) Axes; and 3) Curricular units. The latter, called classes or courses, become the center of the students’ experience.

• The most important scenario for training is the classroom.
• Time periods: every four months, semesters, years; and the credit unit is measured in class hours.

• Academic work around a contextual project fulfills an incidental didactic function; it is obligatory only as community service activity.

• Community service activities are completed as a requisite for graduation: 120 hours, according to the Law of Community Service Activities for Higher Education (2005).

The participation of students from all the higher education institutions in Venezuela in community service activities has meant the development of social projects in different areas (See Annex G). The vision of these projects is complementary; they are not considered a central training component. One of the interviewed professors from the preexistent model stated:

“...in the Ley de Servicios Comunitarios del Estudiante de Educación Superior (Law of Community Services for the Higher Education Student), the purpose is that the individual awaken that sense of social commitment and those values, because the university student cannot think that the knowledge we acquire here is to place ourselves at the service of our own egoism; it has to be to place ourselves at the service of social justice for the common good, because that is the ethical meaning of social responsibility” (E1).

• Research is present in the seminars for most majors (curricular units) in the study plan, separated from the rest of the curricular units, and is oriented toward developing methodological competences for doing scientific research. In some majors, preparing a research project (thesis) is a requisite for graduation. Innovation and knowledge transfer are not considered priorities in the training process, which is educational in so far as it carries out academic exercises that are not committed to reality or to surmounting it.

With regard to research training, critical positions were shown by the students:
“…we have to learn outside the university, solve questions, investigate, but the university does not give this to us. If we want to learn, if we want to be better, it is because we want it, not because the university is going to give it to us…” (GF2).

“…the little bit of research that we do, what they do is file it without even bothering to take it to another place, and if we truly are going to do a thesis with so much effort it ought to remain in the community” (GF5).

- Intermediate certificates are offered in only a few courses of study.
- The theoretical-practical relationship is carried out principally through the curricular area of Professional Practices (internship) and the strategies of specific curricular units. This favors a disconnection with the search for solving society’s problems and is centered more on academic routines.

In the emergent model, the educational concept is oriented toward training citizens. It trains “in” society with contexts and actors from reality.

The training model is characterized by:
- A declared commitment to integrality, oriented toward training in socialist values. These universities are inspired by training with a clear social, ethical and political commitment, with values of cooperation, solidarity and social justice.

The educational concept that supports this model is expressed in the definition of the training process for a new curricular design: Learn to unlearn to learn again; teach and learn for critical reflection and to approach the solution of problems inherent in education and the country; learn to exercise and teach in the institutions a citizenship that is responsible and co-responsible, honest, democratic, solid and participative, for the family and collective development; learn to empower and develop a mode of thinking that is able to establish relationships and contextualize the knowledge or themes of study; learn for the survival of the human condition and the planet (República Bolivariana de Venezuela, 2003).
All programs respond to an organization declared to be transdisciplinary, with innovative training programs, compared to those traditionally offered in preexisting universities; for example: Environmental Management, Social Management for Local Development, Oil Refining and Chemistry, Agro-Ecology, Political and Governmental Studies, Public Health Management, Computer Science for Social Management, Integral Community Medicine, among others.

- The profile of the graduate is said to be oriented toward performance.
- Organizational elements of the curriculum are: 1) Academic areas, 2) Training axes: epistemological, ecological-social, political-ideological, leisure and professional. The Project is an operative-integrating axis. 3) Curricular Units, 4) Thematic Nuclei and 5) Integrated Courses.
- The concept of Programas de Formación de Grado or PFGs (Undergraduate Training Programs), equivalent to majors in the preexisting model, is incorporated in the study plan, but is structured with an integrating vision of teaching activities and formative research. They are the axes through which social research projects are developed. The PFGs permit linking the different curricular units with diverse problems in the communities.
- A variety of modalities in their curricular units, among which are included: modules made up of sequences associated with specific learning; seminars given by intellectuals and scientists with well-known national or international careers who share training experiences; and professional practices that closely relate field work with professional work.
- The professor-student relationship is horizontal, dialogic, participative, constructed collectively, reflexive and based on shared learning.
- Time periods: paths and phases, of variable durations. The path is a lapse that extends beyond the present concept of academic year; its length is subject to the student’s achievement of objectives and competences. This emergent model provides certification of learning by path. The path is made up of phases, which are basic units of time
and they consist of curricular units in which the teaching-learning process is designed.

- Intermediate certificates are offered in all undergraduate academic programs.
- The credit unit is measured in hours of integral student dedication; it values independent work time and field work carried out in the project.
- Research is an activity interwoven throughout the entire academic process by means of the project and is oriented toward satisfying contextual problems
- The project is the central, integrating curricular element and it incorporates community service and research activities, offering permanent support for the theoretical-practical relationship.

A student participating in the focal groups expressed an essential part of the formative orientation of this model:

“The work of the professional, once knowledge has been acquired, is profiled only in relation to the ‘good’ of the community, from the University’s viewpoint. In this aspect, it is important to emphasize that technical training and professional abilities would seem to occupy a secondary place in relation to the idea of ‘helping to resolve community problems’” (FG8).

One innovative element of the training proposal in the emergent university model is precisely the project; this is a practice with an inquisitive, proposal-oriented sense, conceived as a basic, integrating curricular axis, which makes it possible to put into practice the interrelation of different types of knowing, based on a set of social problems and using a collective and participative research process (Universidad Bolivariana de Venezuela, 2008b).

The project develops from the beginning of the academic process to graduation through direct action in the communities, which means that work phases must be completed, including approach, diagnosis, exchange and integration between academic knowledge and popular knowing; community actors in-
tervene in a dialogue that constructs experience, learning and integration.

At the UBV, it is accepted that the project cannot be understood as a common curricular unit; they define it as “the true democratizing step for Popular Higher Education” (Gobierno Bolivariano de Venezuela, 2007), because it will permit implementing other more effective and open modes of study, oriented toward an honest inclusion of the population in higher studies and the social, cultural and political contextualization of university education.

When interviewed, a professor who co-designed the academic proposal of the UBV explained the meaning of the project in this type of training model:

“…working by projects means trying to break with the fragmentation of knowledge. When the student comes into the university and enters his/her area of training, the first thing he or she does during the first month is to draw up a project with his/her professor. For this, we organize the students according to their place of residence, their municipality, their parish, because the project is drawn up for the site where the student lives. This also permits connecting the university with the student’s place of origin, his/her family, with the people who reside where he/she resides” (I13).

In few words, in the preexisting universities, the training model has a disciplinary orientation; the essential elements in the study programs are curricular units. Research is included in such units for developing methodological competences, and the goal of training professionals is to satisfy demands from the labor market. In the emerging university, the training model has an interdisciplinary orientation; the central axis of the curricula is the project. Research activity is interwoven through the training, and the goal of the educative process is to indoctrinate citizens for re-founding society.

To conclude this axis, table 22 shows the most outstanding aspects of the comparison between the preexistent and emergent university models with regard to the concept of university.
### Table 22
Comparison between the Preexistent and Emergent University Models Related to the Second Axis: Concept of the University

<table>
<thead>
<tr>
<th>KEY FEATURE</th>
<th>PREEXISTENT UNIVERSITY MODEL</th>
<th>EMERGENT UNIVERSITY MODEL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Orientation of the University</strong></td>
<td>Professionalizing.</td>
<td>University oriented toward development and socialism.</td>
</tr>
<tr>
<td></td>
<td>University functions: research, teaching, extension.</td>
<td>University functions: integral training, formative research and social-community integration.</td>
</tr>
<tr>
<td><strong>University Government</strong></td>
<td>By direct and democratic election.</td>
<td>By designation of the National Government.</td>
</tr>
<tr>
<td></td>
<td>Co-government: professors and students.</td>
<td>Participation of students, workers and employees in the co-government. A social council and university ombudsman exist.</td>
</tr>
<tr>
<td></td>
<td>According to the Ley de Universidades, autonomy is organizational, academic, administrative, economic and financial.</td>
<td>Autonomy is responsible in the sense that the university has the duty to answer to the State and society for what it does in fulfilling its mission.</td>
</tr>
<tr>
<td><strong>Academic-Administrative Organization</strong></td>
<td>Faculties and nuclei, schools and divisions, centers and institutes, departments and courses. Some universities have a matrix-like structure: deans’ offices by functions, academic areas, coordination, divisions, programs, centers and institutes.</td>
<td>Structure is matrix-like: academic areas, academic nuclei, academic corps, academic programs, academic program councils, advanced research and training center and training programs.</td>
</tr>
</tbody>
</table>
Table 22
Comparison between the Preexistent and Emergent University Models Related to the Second Axis: Concept of the University (Continued)

<table>
<thead>
<tr>
<th>KEY FEATURE</th>
<th>PREEXISTENT UNIVERSITY MODEL</th>
<th>EMERGENT UNIVERSITY MODEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training Model</td>
<td>Training of integral professionals to satisfy demands from the labor market.</td>
<td>Training of citizens for re-founding the homeland.</td>
</tr>
<tr>
<td></td>
<td>Integral training: scientific and humanistic.</td>
<td>Integral training in socialist civic values.</td>
</tr>
<tr>
<td></td>
<td>Formation “for” society, but not “in” society.</td>
<td>Training “in, with and for” society in contexts and with actors from reality.</td>
</tr>
<tr>
<td></td>
<td>Disciplinary orientation.</td>
<td>Interdisciplinary orientation; innovative training programs.</td>
</tr>
<tr>
<td></td>
<td>Research: curricular units, development of methodological competences.</td>
<td>Research: activity interwoven throughout the training process through the project.</td>
</tr>
<tr>
<td></td>
<td>Curricular unit or subject as the essential element in the study programs.</td>
<td>Project as the central axis of the curriculum.</td>
</tr>
<tr>
<td></td>
<td>Theoretical-practical relationship mainly developed in professional practice.</td>
<td>A permanent theoretical-practical relationship developed with and in the community.</td>
</tr>
</tbody>
</table>

Source: Authors.

THIRD THEMATIC AXIS: UNIVERSITY-SURROUNDINGS RELATIONSHIP FOR KNOWLEDGE PRODUCTION

In the analysis regarding the university-surroundings relationship for knowledge production, we develop the following essential aspects: relationship strategies between universities and surround-
ings (government, communities, community councils, private organizations and the educational sector), as well as forms of insertion or territorial distribution.

**Practices of University-Surroundings Relationships**

In Venezuela, universities from the preexisting as well as the emerging model utilize different strategies and paths to connect with their surroundings. For example, in the preexisting model, two of the most common strategies used for connecting with the surroundings are extension projects and community service (fulfilling the Ley de Servicios Comunitarios del Estudiante de Educación Superior). Other frequent strategies in the relationship with the surroundings are inter-institutional agreements (academic cooperation), advisory contracts, student internships, university firms and research activities carried out through LOCTI grants.

In the case of the emergent universities, the training process is based on integrating the university with the community and contextual problems using the project as an integrating axis; for this reason, the entire university dynamic is oriented toward connecting the university with its surroundings and overcoming the deficiencies present in them. The notion of business is not a part of the university's logic; thus, there is no relationship between the UBV and the private sector, i.e. firms, industry, etc.

One strategy used by both types of universities is the agreement as a practice for inserting the university in the context. Through these agreements, relationships of inter-institutional cooperation between two or more organizations are defined. However, we ought to note a difference between the uses that universities belonging to one or the other model make of this strategy. While universities from the preexisting model try to create connections with private enterprise, the UBV and the rest of the universities from the emerging model make agreements, preferably, with other governments or foreign higher education institutions and restrict relationships inside the country to government offices or state businesses.

Table 23 shows the number of agreements made by universities in the year 2007.
Table 23
Agreements between Universities and the External Sector (2007)

<table>
<thead>
<tr>
<th>University</th>
<th>LUZ</th>
<th>UCV</th>
<th>USB</th>
<th>UBV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agreements between Universities and the External Sector (National and International) (2007)</td>
<td>121</td>
<td>196</td>
<td>67</td>
<td>42</td>
</tr>
</tbody>
</table>

Source: Universities.

Table 24 records university firms belonging to universities of the preexisting model. We insist that this indicator does not apply to the UBV because the notion of business does not form part of the logic for these emerging model universities.

Table 24
University Firms: Preexistent Model (2007)

<table>
<thead>
<tr>
<th>University</th>
<th>LUZ</th>
<th>UCV</th>
<th>USB</th>
<th>UBV</th>
</tr>
</thead>
<tbody>
<tr>
<td>University Firms (2007)</td>
<td>18</td>
<td>16</td>
<td>3</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

Source: Universities.

University firms have been developed in a great variety of advisory, service and technology generating fields (See Table 25).

Table 25
Examples of University Firms (Preexisting Model)

<table>
<thead>
<tr>
<th>University</th>
<th>Firms</th>
</tr>
</thead>
<tbody>
<tr>
<td>UCV (Affiliated Firms)</td>
<td>Technological Pharmaceutical Biology (BIOTECFAR,C.A).</td>
</tr>
<tr>
<td></td>
<td>CENAC Productions, C.A.</td>
</tr>
<tr>
<td></td>
<td>CLINIFAR Clinical and Pharmacological Laboratory, C.A.</td>
</tr>
<tr>
<td></td>
<td>Petroleum Consulting Corporation, CORPOMENE, C.A.</td>
</tr>
<tr>
<td></td>
<td>CORPOREA Productions, C.A.</td>
</tr>
<tr>
<td></td>
<td>Bioallergenic Developments, C.A.</td>
</tr>
<tr>
<td></td>
<td>FACFAR Representations, C.A.</td>
</tr>
</tbody>
</table>
### Table 25
**Examples of University Firms (Preexisting Model)**
*(Continued)*

<table>
<thead>
<tr>
<th>University</th>
<th>Firms</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>UCV</strong> (Affiliated Firms)</td>
<td>Industrial Innovation, Production and Development (INPRODICA)C.A.</td>
</tr>
<tr>
<td></td>
<td>PROMOARTE UCV, C.A.</td>
</tr>
<tr>
<td></td>
<td>RENFAGRO, C.A.</td>
</tr>
<tr>
<td></td>
<td>SUMBIOMAT Biomaterial Supplies, C.A.</td>
</tr>
<tr>
<td><strong>UCV</strong> (Related Firms)</td>
<td>Veterinary Company, S.A. (EMPREVET S.A.)</td>
</tr>
<tr>
<td></td>
<td>INSURBECA, C.A.</td>
</tr>
<tr>
<td></td>
<td>Biotechnological Reproduction (REBIOTEC), S.A.</td>
</tr>
<tr>
<td></td>
<td>University Reference Service in Bioanalysis C.A (S.U.R.B.C.A).</td>
</tr>
<tr>
<td></td>
<td>TEXNE Architectural Consultants, S.A.</td>
</tr>
<tr>
<td><strong>LUZ</strong> (Active Foundations)</td>
<td>FUNDADESARROLLO LUZ.</td>
</tr>
<tr>
<td></td>
<td>BARALT THEATER Foundation.</td>
</tr>
<tr>
<td></td>
<td>MACZUL Foundation.</td>
</tr>
<tr>
<td></td>
<td>Laboratory for Technical Petroleum Services Foundation “INPELUZ”.</td>
</tr>
<tr>
<td></td>
<td>Technological Park Foundation “PTU:LUZ”.</td>
</tr>
<tr>
<td></td>
<td>FUNDALUZ (Foundation of the University of Zulia Dr. Jesús Enrique Lossada).</td>
</tr>
<tr>
<td></td>
<td>FUNDACINE (Foundation for Regional Cinematographic Development).</td>
</tr>
<tr>
<td></td>
<td>FUNFICEM-LUZ (Foundation for Children with Cerebral-Motor Dysfunction, LUZ).</td>
</tr>
<tr>
<td></td>
<td>HABITAT Foundation LUZ.</td>
</tr>
<tr>
<td></td>
<td>FUNDALUZ-COL (Foundation Pro-Development of the LUZ Nucleus on the Eastern Coast of Lake Maracaibo).</td>
</tr>
<tr>
<td></td>
<td>FUNDAMAGZU (Foundation for the Aula Magna of Zulia).</td>
</tr>
<tr>
<td></td>
<td>FUNCECTAS (Central Regional Foundation for Cardiovascular Diseases Dr. Tulio A. Sulbarán).</td>
</tr>
</tbody>
</table>
Concisely, university-surroundings relationship strategies in the preexisting model are: extension projects, community service projects and LOCTI projects, besides cooperation agreements between universities and other external sector organizations. In the emerging university model, the integral curricular unit (project) constitutes a direct link between the university and contextual problems.

**Spatial Distribution**

Universities from the preexisting model maintain central headquarters in the regions where they are located. Additionally, and trying to serve a larger student population, nuclei were created in zones or in states close to the main university center; these nuclei operate in traditional buildings, which are complex, large and costly. In an attempt to diminish costs, universities have been placed mainly in cities where most of the population lives and there is easy access to all public services. However, this urban location,
far from non-urban villages and settlements, has impeded a great number of Venezuelans from having the opportunity to enter the universities, as it is an imperative condition for students to transfer, transport or move to the city, thereby denying them the possibility of attending university.

Trying to solve this situation of inaccessibility to higher education for a part of the population, the State, through the implementation of the emerging university model, has set up “university villages” that are defined as “permanent educational spaces linked to the population’s needs for training, research and consultancy, in order to generate the socio-cultural relevance of learning and work shared among the communities, companies, governmental and non-governmental organisms” (D’Elia et al., 2006: 109).

The process of municipalizing higher education in Venezuela began in 2003 through the Programa Extraordinario Mariscal Sucre - Misión Sucre (Extraordinary Marshal Sucre Program–Sucre Mission) as a State policy oriented toward eliminating exclusion from university education, strengthening regionalization and locating the teaching-learning process in the social, geographical and cultural context of the student. As a tool to help to solve this exclusion, the State recurred to locally available professional human talent for professors, consultants and tutors, with the additional idea of solving community problems by taking advantage of the local potential, a central characteristic of the endogenous development model the State is proposing (Santiago, 2007).

Furthermore, municipalization is practiced as a strategy for developing higher education since it extends the university “toward what is regional and local, taking as its fundamental reference point the specific culture of the populations together with their needs, problems, heritage, demands and potentials” (Ministerio de Educación Superior, 2003:25).

Universities belonging to the emerging model are in charge of the municipalization policy better known by its motto, “The University goes to the village.” Due to this policy, the aforementioned model is present not only at the eight central UBV headquarters, located in Caracas, Zulia, Falcón, Bolivar, Monagas, Táchira, Barinas and Aragua, but also all around the country in every municipality of the national geography.
“University villages” consist of professors and students who follow training programs in the enabled institutions that have been founded in the town or settlement (normally public basic education schools) or in ad hoc installations specially built and equipped for the villages. They function on Saturdays, Sundays and weekdays using schedules different from working hours. These training programs lead to obtaining a degree bestowed by the diverse universities that are academically responsible for the training offered at the village.

The municipalization policy resulted in establishing more than 1,700 university villages in the 335 municipalities that make up the national territory, where more than 500,000 students are currently studying. The villages brought citizen training closer:

...shortening distances between the centers of study and places of residence has favored access for populations distant from the great urban centers, those who live far away from the large city centers, working women and men, and people with family responsibilities (González, 2008:11).

For example, there are university villages that function in places located 8 hours away from the nearest town by curiara (dug-out canoe).

From September 2003 to 2007, the villages provided university training to approximately 360,000 students from demographic segments that used to live isolated from any educational activity.

In 2008, the number of students attended at the villages reached 534,315, out of the total of 2,260,221 students; the selected group was distributed among 23 Training Programs and 1,500 Study Centers. University villages incorporated 24% of the students enrolled in higher education that year (Gobierno Bolivariano de Venezuela, 2010).

Table 26 shows the central headquarters and nuclei of universities from the preexisting model as well as those of the emerging model, represented by the UBV:
In a few words, preexisting universities serve the regional population in central headquarters and nuclei located within their areas of influence; universities of the emergent model practice municipalization through the “university villages.”

The table 27 summarizes a comparison between the preexistent and emergent university models regarding the university-surrounding relationship axis for knowledge production.

### Table 26
**University Headquarters or Regional Seats (2008)**

<table>
<thead>
<tr>
<th>University</th>
<th>Headquarters or Regional Seats</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LUZ</strong></td>
<td>Zulia Region (Headquarters: Maracaibo and Cabimas).</td>
</tr>
<tr>
<td><strong>UCV</strong></td>
<td>Capital Region (Headquarters Caracas). Central Region (Cagua Nucleus and Maracay Nucleus).</td>
</tr>
<tr>
<td><strong>USB</strong></td>
<td>Capital Region (Headquarters, Baruta Municipality).</td>
</tr>
<tr>
<td><strong>UBV</strong></td>
<td>Capital Region (Caracas Headquarters). Central Region (Carabobo Headquarters). Central Western Region (Falcón Headquarters). Zulia Region (Maracaibo Headquarters). Guayana Region (Ciudad Bolívar Headquarters).</td>
</tr>
</tbody>
</table>

Furthermore, there are “UNIVERSITY VILLAGES” in the 335 Municipalities existing in the country.

Source: Universities.
FOURTH THEMATIC AXIS: UNIVERSITY ACTORS

The axis of university actors assumes that students, professors, graduates and the community are essential aspects for analysis. A comparison of the key features corresponding to each model follows.

Student Admission System

In 2008, a government decree opened access to all public universities, which had been somewhat restricted before, as student entrance to preexisting universities was conditioned on passing a national aptitude test in order to be assigned to a determined institution and, in some cases, on taking specific tests that were applied according to the faculty or school chosen, representing barriers that limited access before 2008.

When analyzing student registration data for the periods previous to that decree, it was found that, during the 2004-2008 period, registration figures at the UCV were practically unchanged, as its rate showed only a 0.21% increase. The percentages from other universities were different: the USB increase was 16.45% and the
increase at LUZ was 46%, evidencing the greatest growth of all three universities. Although the percentages augmented in these two universities, the increase was not enough to answer the country’s demand. The explanation for the limited entrance strategy has been the need to guarantee optimum operational conditions for maintaining quality in the institution.

In contrast to the previous position, the admission system is unrestricted in the emergent university model. The only existent condition for entering the UBV is to have previously obtained a high school degree. The scope of the UBV, added to the Sucre Mission, makes the rate of increase for university registration in Venezuela 320% in the last years. From 513,458 students in 1990 or 668,109 students in 1998, the number increased to 2,135,146 in 2007 (See Table 28).

Table 28
Registration by Type of University (1990-2007)

<table>
<thead>
<tr>
<th>Year</th>
<th>1990</th>
<th>1998</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registration by year for higher education in Venezuela.</td>
<td>513,458</td>
<td>668,109</td>
<td>2,135,146</td>
</tr>
<tr>
<td>Registration in official institutions.</td>
<td>349,371</td>
<td>377,107</td>
<td>1,567,314</td>
</tr>
<tr>
<td>Registration in private institutions.</td>
<td>164,087</td>
<td>291,002</td>
<td>567,832</td>
</tr>
</tbody>
</table>

Source: Oficina de Planificación del Sector Universitario, OPSU, 2008.

Table 29 shows the admission of new students to the universities between 2004 and 2008. It can be seen that universities from the preexistent model maintained a moderate growth, while the UBV, an example of the emergent model, had admissions that exceeded those of the rest of the universities mentioned: 300% in 2007 and 2008.

Table 29
University Registration (2004-2008)

<table>
<thead>
<tr>
<th>University</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>LUZ</td>
<td>42,806</td>
<td>44,102</td>
<td>53,019</td>
<td>61,805</td>
<td>52,975</td>
</tr>
<tr>
<td>UCV</td>
<td>48,292</td>
<td>44,941</td>
<td>46,934</td>
<td>47,593</td>
<td>46,489</td>
</tr>
<tr>
<td>USB</td>
<td>7,966</td>
<td>8,277</td>
<td>8,484</td>
<td>9,911</td>
<td>9,277</td>
</tr>
<tr>
<td>UBV</td>
<td>No Information Provided.</td>
<td>No Information Provided.</td>
<td>No Information Provided.</td>
<td>182,265</td>
<td>191,378</td>
</tr>
</tbody>
</table>

Source: Oficina de Planificación del Sector Universitario, OPSU, 2008.
The achievement reported by the National Government regarding higher education coverage in recent years is the consequence, to a great degree, of implanting the emergent university model.

In these nine years of government (1999-2008), the number of new students enrolled in higher education increased by 193%; total enrollment in higher education increased by 320%; the number of annual graduates increased by 143%...78 out of every 1000 Venezuelans were enrolled in an institution of higher education. This last result is the most impressive. Venezuela achieved a gross higher education enrollment rate of 83%... This indicator places our country in second place among countries in Latin America and seventh in the world, above countries like Denmark and Norway. Venezuela is above the average of North America and Europe in terms of enrollment, which is 70%, and far above the average in Latin America and the Caribbean, which is 29.61% (Mosquera, 2008:2).

In 2008, the Sistema Único Nacional de Admisión a la Educación Superior (Unified National System for Student Admission to Higher Education) was created with the purpose of advancing toward social justice and reversing the situation in some public universities that receive, to a greater degree, students coming from sectors with superior acquisitive power and private secondary education institutions. Three types of inequities in the admission process are denounced: socio-economic, geographic and the type of secondary school attended, to the detriment of students coming from public institutions.

In this regard, studies have presented data to argue that the selective mechanisms at those (preexisting) universities raise doubt as to whether they give opportunities to the most apt or capable applicants, or whether factors other than aptitude and capacity are determining:

Thus, (analysts) have insisted that the socio-economic background of those that aspire to enter the universities is a determining factor in their selection and is always favorable to aspirants from higher economic levels.
Others affirm the advantage of having graduated from a private high school in the selection processes, because these have better academic quality or are ‘splendid’ when giving grades (Fuenmayor Toro, 2002:1).

These studies rate the university admissions system as:

...inequitable in relation to socio-economic background, the type of high school (public or private) attended, and the geographic region from which the aspirants come to enter these institutions, in detriment to poor students coming from public high schools and distant geographic regions that are less inhabited and have very low economic development (Fuenmayor Toro, 2002:2).

For these reasons, it was proposed that the power of the State should decide on a “one and only” student admission system for higher education with a national character that is unified, obligatory, dedicated to quality, equitable, transparent and under the control and supervision of the Government (Fuenmayor Toro, 2009).

The operation of this admissions policy is fulfilled through the Registro Único del Sistema Nacional de Ingreso a la Educación Superior- RUSNIES (National Unified Registration System for Admission to Higher Education), through which “the student who aspires to enter the system must register and divulge his/her location, socio-economic conditions, the major he/she wants to pursue and his/her preferred university, among other data that make it possible to characterize and quantify this population, as well as contribute to planning the higher education system” (Hernández, 2010).

The results of applying the new system (RUSNIES) made it possible to assign 30% of all the vacant spots in public higher education institutions, admitting 76.3% of the aspirants coming from public high schools and 23.7% from private high schools, a proportion congruent with the percentages of students who study in the two types of institutions. Likewise, the percentage of admissions per socio-economic sector turned out to be more just, assigning 15.3% of the places to strata 1 and 2 (greater acquisitive power), 32.2% to stratum 3, and 52.2% of the places to strata 4 and 5 (the poorest) (González, 2008).
Another aspect in which the emergent university model stands out is the incorporation of international students. For the year 2007, the UBV had 45 international students, surpassing the UCV, a bicentennial university projected internationally as the first university in Venezuela (See Table 30).

<table>
<thead>
<tr>
<th>University</th>
<th>LUZ</th>
<th>UCV</th>
<th>USB</th>
<th>UBV</th>
</tr>
</thead>
<tbody>
<tr>
<td>International Students (2007)</td>
<td>8</td>
<td>44</td>
<td>21</td>
<td>45</td>
</tr>
</tbody>
</table>

Source: Universities.

As a corollary of this key feature, we can affirm that student admission to the preexisting universities requires passing vocational and special tests; in universities of the emerging model, admission is unrestricted.

**Student Participation in Community and Knowledge-Producing Projects**

For the preexistent model, student participation in activities carried out in the communities responds to a graduation requirement set forth in the Ley de Servicio Comunitario del Estudiante de Educación Superior. The percentage of students who take part in research is minimal or insignificant.

In the emergent university model, all students participate with the communities in the collective construction of knowledge based on experiences interwoven in a propositive-investigative practice or project, explained sufficiently under the subtitle “Project Concept” included in the First Axis: Knowledge Production.

In the UBV and other universities of the emerging model, the project permits integrating students with the communities,

...giving a genuine solution to problems of uprootedness, incorporating all citizens in student action, the impulse toward what is endogenous and sustainable as a foundation for economics, toward popular organization with an eye to changing the geometry of power…(Universidad Bolivariana de Venezuela, 2008b: 53).
The project demands greater efforts and more involvement as the student advances in his career, because it gets more complicated over time. The solution to the central problem that inspired the student is constructed; the graduate’s abilities are put into practice, while the socio-political program that furthers the UBV is developed.

“…in general terms, the project... sets guidelines for you in what is a logic different from the pedagogical viewpoint for developing teaching or a curricular program; in this case, it is to solve the problems of reality, something the traditional universities do not do” (I4).

In practice, the curricular unit “project” represents the presence of almost 400,000 students and their professors in the country’s communities during four years of training, performing research activities, solving problems and transmitting the political message of the Venezuelan government. This constitutes an immense potential for the presence of the university and the official political project in reality, besides the fact that it is profiled as a strategy for impelling development based on the project’s potential to overcome deficit situations in each of those communities.

In conclusion, the integrated project expresses, more than a knowledge production purpose, a transforming political commitment within the UBV curriculum and should be seen as:

…the only response that will permit the irruption of new practices, which in turn will cause transformation on the epistemological and axiological levels, generating feedback in what is political, because it is in the very first place, a politically adapted strategy for organizing and systematizing problematic contact with a problematic reality, within a framework that is coherent with new schemes of action (El Souky and Millan, 2007:13).

However, scientific research, whose condition sine qua non is to promote knowledge production indissolubly linked to humanistic, social or technological innovation, is not a defining characteristic of the integrated project. This absence is more obvious at the university villages located in 335 municipalities of the national geography, since at most of these locations, there are no even minimally appropriate
installations, such as laboratories, equipment, infrastructure, supplies or highly qualified staff (teachers/researchers) to train students in the activity of producing innovative science.

The possibility for innovative knowledge production in science and technology is not a priority in the educational dynamics defining the logic of this university. It should be specified that such production is not excluded from that logic, but if it is produced, it is only a plus and is not considered an element inherent to the academic practice.

Nevertheless, it is important to emphasize that research furthered at the UBV through the community project has two aims: to develop the capacity to incorporate community people as actors and co-authors in research processes and to transform their space by exerting that capacity in solving daily life issues.

“When we refer to ‘daily life’ we are thinking about questions associated with health, nutrition, habitat, transportation, communications, ways of learning, available information, modes of participation to which there is access” (Arocena, Bortagaray y Sutz, 2008:135). The distance between daily life and the reality of research is great, and applications derived from knowledge production will have more probabilities of occurring the closer the researcher is to the user (Arocena et al. 2008). However, in general terms for the researchers, knowledge production agents par excellence in the preexisting university model, it is not easy to incorporate these types of questions from the direct perspective of common people in their agendas.

In a few words, the preexisting university student’s participation in community and knowledge-producing practices is reduced to the project stated in the Ley de Servicio Comunitario del Estudiante de Educación Superior; in contrast, students from the UBV and other universities of the emerging model participate in such practices through the integral project, interwoven throughout their entire education.

Identification with the University Orientation

The identification of university actors with their institution in the preexistent model is a declared interest in the institutional documents. Students and professors show that they identify themselves with the university’s orientation, even though they also criti-
cize the institution. This identification is more accentuated among the students.

Students in the preexistent model value receiving a university education in institutions with academic prestige as an opportunity; likewise, they manifest the social value that their families give to their studies, due to the contribution these offer to the social advancement of the young people and the development of the country.

Students and professors from the emergent university model are identified with the university, not only as a declaration of principles, but also in practice, since from the moment they enter, Bolivarian and socialist principles are “implanted” in them through sensitization programs: Programa de Iniciación Universitaria (University Initiation Program, for students) and the Programa de Formación para Formadores (Training for Trainers Program, for professors).

For this emergent model, identification with the university orientation puts all the actors who are considered significant under an obligation: professors, students, workers, officials and the community. Thus, the UBV develops strategies:

…so that the UBV is taken on by the entire community…in its acceptance internally and externally…meetings of officials with the different university sectors…generation and distribution of documents directed to the communities and participation in public, televised and radio broadcast spaces of a national and alternative character, the authorities and other authors make up a steering committee (República Bolivariana de Venezuela, 2007:6).

A teacher interviewed at the UBV synthesizes identification with the university orientation when stating that “each professor is here because he likes it, because he wants to be here and shares the position of the Bolivarian project” (E9).

**System for Hiring Professors**

Basic guidelines for hiring professors in the preexistent model are prescribed in the Ley de Universidades currently in effect. Each university establishes its own regulations based on that law. In all cases, it is stated that evaluation for contracting academic personnel should be based on evaluating credentials of
merit accumulated by the person who aspires to enter as a professor, as well as submitting this person to other types of tests that assess his/her pedagogical and disciplinary preparation.

For the emergent university model, the selection and hiring of professors is based on the university law mentioned; nevertheless, the UBV introduces elements that are not present in the other institutions. Hiring as a full professor includes actions such as passing a training program, for example; it is also specifically established that mastery of epistemological, theoretical, conceptual, methodological, technical-conceptual and ethical-political matters should be taken into account, among others.

Among the aspects considered in the emergent model for selecting teaching personnel, the following stand out:

Highly committed to the purposes of the University and with a high sense of responsibility; disposed to abandon the securities of interpretive schemes and given knowledge, narrow ideas about knowledge and teaching as a form of disseminating scientific knowledge and erudite understandings; trained in the formulation and development of interdisciplinary projects with epistemological, methodological and technological support; able to create pedagogical situations that leave room for uncertainty, complexity, comprehension, investigation and above all, training experiences that develop capacities for handling them (República Bolivariana de Venezuela, 2003:58).

**Tenure and Promotion System for Professors**

In the preexisting model, evaluation of academic merits accumulated by the professor is the promotion mechanism. The legal basis for that evaluation is contained in the Ley de Universidades, and the criteria are oriented toward evaluating works performed, publications, years of service and a special paper evaluated by peers. Tenure for the professor is definitive if he/she is a full professor or transitory if he/she is contracted.

In the emergent model, tenure and promotion for a professor are based on postulates of citizen participation, democracy, soli-
darity and social justice, multiethnicity and pluriculturality, on the political-academic principles of the institution and the completion of institutional, social, community commitments and commitments to the surroundings.

In conclusion, in the preexistent universities, professorial hiring, permanence and promotion are activities ruled by law and based on academic achievements, while in the emergent universities, different human, social and political aspects are taken into account.

**Training System for Professors**

Universities from the preexisting model promote professorial training through the development of their normal activities; both teaching as well as research are seen as opportunities to update the professor and consequently, to train him/her. Post-graduate studies (master's and doctoral degrees) are promoted. Professors are encouraged and, in some university schools, obliged to receive pedagogical training when they have not had it in their previous studies. This training can respond to a personal decision, although frequently needs are imposed on personnel by the institution.

In the emergent university model, the process of training a professor leads to changing his/her way of thinking and acting according to the model proposed by the university; it is a “deep reform in the professors’ thinking and action.” This training includes principles of interdisciplinarity, is supported with formative research and oriented toward society and strengthening fields of knowledge. At the same time, it contemplates ongoing pedagogical training and the evaluation of pedagogical performance. The teachers participate in an initiation course that leads them to identify themselves with the socialist political model, the purposes of the Bolivarian revolution and the new educational model.

**Graduates by Gender**

In Venezuela, the tendency has been toward maintaining more than 50% female graduates, only slightly less at the USB, which is an institution with a predominantly technical orientation. At the UCV and LUZ, where a greater variety of majors are offered, the presence of women has been equal to or greater than two-thirds of the graduates in the last five years. In both models,
women have become protagonists in university life, thereby evidencing a growing feminization of higher education.

Specific information for the UBV about this topic was not available (See Table 31).

**Table 31**

<table>
<thead>
<tr>
<th>Year/Data</th>
<th>All Universities</th>
<th>UCV</th>
<th>LUZ</th>
<th>USB</th>
<th>UBV</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td>Total</td>
<td>8,624</td>
<td>3,368</td>
<td>4,528</td>
<td>728</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>5,885</td>
<td>2,138</td>
<td>3,411</td>
<td>336</td>
</tr>
<tr>
<td></td>
<td>Rel %</td>
<td>68.24</td>
<td>63.48</td>
<td>75.33</td>
<td>46.15</td>
</tr>
<tr>
<td>2004</td>
<td>Total</td>
<td>11,705</td>
<td>5,404</td>
<td>5,361</td>
<td>940</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>8,062</td>
<td>3,610</td>
<td>4,062</td>
<td>390</td>
</tr>
<tr>
<td></td>
<td>Rel %</td>
<td>68.88</td>
<td>66.8</td>
<td>75.77</td>
<td>41.49</td>
</tr>
<tr>
<td>2005</td>
<td>Total</td>
<td>12,295</td>
<td>4,961</td>
<td>6,427</td>
<td>907</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>8,658</td>
<td>3,416</td>
<td>4,830</td>
<td>412</td>
</tr>
<tr>
<td></td>
<td>Rel %</td>
<td>70.42</td>
<td>68.86</td>
<td>75.15</td>
<td>45.42</td>
</tr>
<tr>
<td>2006</td>
<td>Total</td>
<td>12,838</td>
<td>5,323</td>
<td>6,340</td>
<td>1,175</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>5,102</td>
<td>INA*</td>
<td>4,551</td>
<td>551</td>
</tr>
<tr>
<td></td>
<td>Rel %</td>
<td>39.74</td>
<td>INA*</td>
<td>71.78</td>
<td>46.89</td>
</tr>
<tr>
<td>2007</td>
<td>Total</td>
<td>13,597</td>
<td>4,623</td>
<td>7,998</td>
<td>976</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>6,553</td>
<td>INA*</td>
<td>6,088</td>
<td>465</td>
</tr>
<tr>
<td></td>
<td>Rel %</td>
<td>48.19</td>
<td>INA*</td>
<td>76.12</td>
<td>47.64</td>
</tr>
</tbody>
</table>

Source: Oficina de Planificación del Sector Universitario, 2008
*INA: Information not available.

The Ley Orgánica de Educación, approved in 2009, establishes gender equality in its Article 8: “The State in accord with the perspective of gender equality foreseen in the Constitution of the Republic, guarantees equality of conditions and opportunities so that boys, girls, adolescents, men and women can exercise the right to an integral, quality education” (República Bolivariana de Venezuela, 2009). In universities of the emerging model, this disposition has been expressly incorporated in their regulations (República Bolivariana de Venezuela, 2003).

As a summary of the comparative analysis for Axis Four, “University Actors,” we present Table 32.
### Table 32
Comparison between the Preexistent and Emergent University Models related to the Fourth Axis: University Actors.

<table>
<thead>
<tr>
<th>Key Features</th>
<th>Preexistent University Model</th>
<th>Emergent University Model</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Student Admission System</strong></td>
<td>Access to all public universities after approving some vocational and special tests for specific majors and institutions.</td>
<td>Unrestricted admission. The only condition for accessing this university model is a high school degree.</td>
</tr>
<tr>
<td><strong>Student Participation in Community and Knowledge-Producing Projects</strong></td>
<td>Community service activities as a graduation requirement.</td>
<td>Experiences interwoven in investigative-propositive practice (the project).</td>
</tr>
<tr>
<td></td>
<td>Research activities according to course demands.</td>
<td></td>
</tr>
<tr>
<td><strong>Identification with the University's Orientation</strong></td>
<td>Students and professors show that they identify themselves with the university's orientation.</td>
<td>Students and professors are identified with the university not only as a declaration of principles, but also in practice.</td>
</tr>
<tr>
<td><strong>System for Hiring Professors</strong></td>
<td>Basic guidelines prescribed in the Ley de Universidades: based on merit and by competition.</td>
<td>Basic guidelines prescribed in the Ley de Universidades plus passing a socialist training indoctrinating program.</td>
</tr>
<tr>
<td><strong>Tenure and Promotion System for Professors</strong></td>
<td>According to accumulated academic merits, oriented toward the evaluation of work performed, publications, years of service and a special research paper judged by a jury composed of other professors.</td>
<td>According to criteria that come from postulates of citizen participation, democracy, solidarity and social justice.</td>
</tr>
</tbody>
</table>
Everything that has been set forth makes it possible to conclude that the emergent university model in Venezuela exhibits innovative characteristics that point toward a re-conceptualization of the university, representing at the same time, many of the contemporary tendencies in the Latin American context.

In summary, some of the key features that constitute innovative characteristics of this emergent model are:

1. It is inspired by the principle that “education is a public good, the right of all and a duty of the State” (United Nations Educational, Scientific and Cultural Organization, International Institute for Higher Education in Latin America and the Caribbean, 2008a).

2. Knowledge is a collective or social construct that recognizes and recovers diverse ways of knowing and their multiple cultural manifestations in university spaces: scientific, daily, ancestral, popular and communitarian wisdom.

3. Academic practices oriented toward development and socialism.

4. The incorporation of communities and other extra-university actors as knowledge producers.

Table 32
Comparison between the Preexistent and Emergent University Models related to the Fourth Axis: University Actors (Continued).

<table>
<thead>
<tr>
<th>Training System for Professors</th>
<th>Training through teaching and research activities.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Graduate and pedagogical training studies are promoted.</td>
</tr>
<tr>
<td>Leads to changing the mode of thinking and acting according to the model proposed by the university and the political system.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Graduates by Gender</th>
<th>Tendency toward a percentage of women graduates higher than 50% of the total.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information not available.</td>
<td></td>
</tr>
</tbody>
</table>

Sources: Authors.
5. The performance of knowledge-producing activities in spaces located in the daily habitats of communities.

6. The concept of the project as political-social coordination between training and social transformation, which overcomes disciplines to work on integrating ways of knowing around problems.

7. The practice of formative, self-reflective, socially projected and prospective research.

8. The strategy of municipalization or university displacement toward populated groups.

9. The incorporation of employees and workers in the dynamics of university governance.

Once again, it is important to note that these characteristics are enunciated based on the normative and theoretical discourse revealed in documents, institutional declarations and testimonials by relevant interlocutors. The purpose of our study was not to contrast this dimension with the practices effected in the institutions that represent this emergent university model.

The aforementioned comparative study leads us to propose a re-conceptualization of the university in the terms expressed in the following Chapter.
CHAPTER IV
A PLURALITY OF CONCEPTS FOR UNIVERSITIES IN DEVELOPING COUNTRIES

A NEW TOOL BOX

The allotment of new roles to universities in the South of the world is common ground among the actors responsible for national and international public policies, as a necessary condition for making higher education the driving engine for the “great leap” toward a development now, primarily, defined as endogenous, sustainable and human. However, these new roles face a vacuum of referents, since the socio-cultural conditions and meta-tales that have framed academic praxis since this century’s beginnings, both in the northern and in the southern hemisphere, are different from those that justify the university characteristic of the already superseded “training society.” It requires new concepts, alternative analytical resources or, what is the same thing, a new "tool box" conceived as the contribution that culture provides to allow us to build not only our worlds, but also our conceptions of ourselves and our powers (Bruner, 2000).

Two of the contributions offered by this book constitute part of these new tools, perceived as inescapable by contemporary university scholars. They are, first, the Theoretical Model explained in Chapter II and comparatively applied in Chapter III, and, second, the Framework for mapping the complex variety of higher education institutions that exist or are being created in developing countries. This Framework, the core of this chapter, is our response to the eagerness of those who, facing the declaration of death or ruin for the university, champion its reconceptualization. As you will read further on, we argue in favor of a plurality of concepts for universities in developing countries.
NEW CODES AND REFERENTS THAT JUSTIFY A RECONCEPTUALIZATION OF THE UNIVERSITY IN DEVELOPING COUNTRIES

The construction of a new concept of university, or a new pluri-concept, requires accepting the abandonment of many of its conceptual foundations, already undermined by the codes and referents that affect its viability in this era of super-complexity. In the following pages, we will expound the codes and referents that are particularly relevant for re-thinking the university concept in Latin America and whose meaning also reaches the rest of the countries in the South. Of course, such codes and referents were driving notions for us during construction of the Theoretical Model proposed herein and the Framework for mapping the complex variety of higher education institutions that exist or are being created for developing countries.

The Notion of Development

The Latin American university has historically been connected with development; nevertheless, the paradigm of development has varied considerably from the first half of the twentieth century to the present. Consequently, the role that universities have assumed has also changed, to help them operate in synchronization with the different concepts that have arisen throughout history.

The first paradigm was called the Theory of Modernization, very influential in the underdeveloped world during the decades of the 1950s and 1960s, and generally designated in Latin America as "developmentalism." This theory supposed that, for those societies, considered less advanced in social, economic and cultural matters, to become developed societies, they had to go through a transition similar to the developmental stages experienced by more developed countries, in an accelerated, conscious form and by the will of their governments, which implied social planning.

During the 1960s, it was believed that the possibility of modernizing development was profoundly limited by the ties of economic, technological and cultural dependence that peripheral countries had with the most developed or central countries. This gave rise to the "Dependence Theory" (Cardoso y Faletto, 1969), which, initially, was a theory for economic analysis of forms of de-
pendence in the economic structures of underdeveloped countries; thereafter, it evolved into an instrument for social and cultural analysis, to later become one of the most fashionable theories during the 1970s. According to this theory, the world economy condemns underdeveloped countries to a peripheral role, permanently characterized by raw materials production with little added value, while industrial and technological production with high added value is carried out in the central or developed countries, placing the latter in a leading position in the world, suitable for making fundamental decisions that affect the world system.

Twenty years later, during the 1980s, there was a reaction against the incapacity of the Dependence Theory to explain the real dynamic of development in underdeveloped countries; this gave way to the theory of sustainable and endogenous development or development "from within" (Sunkel, 1995; United Nations, 1987), a theory still prevalent in Latin America. The objectives of endogenous development are to incorporate those who are excluded and have the people adopt new ways of living and consuming. It promotes a social economy based on solidarity and cooperation, where the center is not profit, but rather the men and women who make up society; that is, it gives development a human face. This new concept considers development to be centered on and sustained by satisfying fundamental human needs, generating increasing levels of self-reliance and harmoniously coordinating men with nature and technology, global processes with local behaviors, what is personal with what is social, planning with autonomy, and civil society with the State (Max-Neef, Elizalde y Hopenhayn, 1986).

The sustainability of the model is a given, due to its adherence to ethical development principles that respect and protect nature and peoples' culture, within a concept of environment integrated with the socio-cultural aspect. This orientation, furthermore, perceives the human being as a protagonist and participant in the formulation, execution and control of long-term public policies within a plan that deepens the model of participative democracy. As a consequence of evolution in the development paradigm, a historical recuperation of the Latin American university in the twenty-first century is imposed that will doubtless lead us to distinguish between:
• Technological development, understood according to the formula, "we want to be like the developed countries of the North," principally allusive to technological industrialization and economic (macroeconomic) growth and,

• Development as understood in the South: "endogenous, sustainable development with a human face."

These two contrasting notions call for a new concept of university: one that allows it to become an engine for technological development and, at the same time, a social motor, since knowledge production and the creation of a higher learning society cannot occur in isolation; developing countries have to remain open societies, especially regarding universal issues, such as scientific and technological progress.

The Functions of the University

The change in the notion of development implies a shift in the definition of university roles and functions. Until now, universities aspired to be protagonists in Latin American development, mainly through their graduates and the contribution these made as professionals in the labor market to benefit the advance of science and technology.

The purpose of universities was to carry out three classical functions: teaching, research and extension. The guiding direction for research was the search for knowledge as an end in itself. Extension could be likened to what is known as the "third mission" (outreach) in Europe and implies connecting academic activity with the social surroundings. Nevertheless, extension or the third mission and research were not sufficiently addressed by the universities, thereby restricting higher education to replicating a teaching model (knowledge transmission) whose justification was exclusively professionalizing.

Since the end of the twentieth century, driving development has been required from the university as an essential (not auxiliary) function; this has been demanded, not only through the number of graduates, but also through internal logics and dynamics that convert it into a direct source for generating and supplementing wealth and not a simple instrument for distributing that wealth (Neave, 1995).
Among these logics and dynamics, knowledge production continues to occupy a crucial place in peripheral universities; however, it is not justified exclusively as an epistemological exercise, but rather obeys a triple requirement: 1) that it be relevant in order to satisfy contextual social and economic needs, 2) that it include diverse knowledge producers (communities, non-scientific or non-academic actors) and 3) that it incorporate the diverse spaces where knowledge is produced. Consequently, universities in underdeveloped countries are restricted to surmounting the traditional "ivory tower" model, which turns them into enclosures surrounded by poor and neglected contexts divorced from the activity carried out within them, i.e. knowledge production according to international agendas and standards defined by the scientific mainstream.

Liefner and Schiller (2008:281) add a fourth function to the three classic ones, and express it as functional integration, "...since universities in developing countries do not often rely on a synergetic integration of their academic sub-functions...The capacity to create stimuli from integrating teaching, research and services is crucial for the universities' success." We coincide with the cited authors as to the importance that integration has in terms of an institution’s accomplishment in placing itself among the successful "advanced universities."

Nevertheless, we prefer to reserve the term "function" to designate the organized systems of actions that derive from the institutional nature; that is, identify training (learning and competence building), research (innovation, technology transfer and social appropriation of knowledge) and outreach (third mission) as university functions. Also, we prefer to conceive integration as a managerial strategy for coordinating among those functions, the actors responsible for them, the better or worse performance level with which the functions are executed and the results derived from their execution.

**The Concept of University Education as a Human Right and Public Good**

We would like to start this section with the words offered by United Nations Educational, Scientific and Cultural Organization, International Institute for Higher Education in Latin America and
the Caribbean (2008b), as it shows the university’s role on the continent: "Higher Education is a social public good, a human and universal right and a duty of the State. This is the conviction and basis for the strategic role that it ought to play in sustainable development processes in the countries of the region." This is a principle enunciated in the Final Declaration of the Regional Conference on Higher Education for Latin America and the Caribbean.

From this principle, many significant consequences may be derived, since it determines not only the concept of the university, but also its role on the continent, as mentioned in the first paragraph. The most relevant consequences are: the universalization of access to university and higher education, in general; the connection of knowledge produced in universities with contextual problems; quality assessed according to higher rates of inclusion and the social relevance of the training programs offered by the institutions; and the recreation of state-financed and publicly-run higher education institutions.

Other consequences refer to the non-negotiable connection between higher education and its contribution to the democratic experience, the building of tolerance, the promotion of solidarity and cooperation, the construction of a continental identity, the consolidation of citizens’ rights and the elimination of inequalities. These consequences are derived from the Action Plan from the Regional Conference on Higher Education for Latin America and the Caribbean (CRES), which establishes expressly that:

…the concept of education as a social public good, a universal right and a duty of the State obliges higher education to: affirm the notion of quality linked to social relevance and inclusion; train and promote a democratic, citizen culture in collaboration with previous educational levels; affirm humanistic values and the promotion of a culture of peace, respect and valuation for cultural diversity and a commitment to human and sustainable development; generate conditions for dialog among peers with other regions on the planet, emphasizing South-South cooperation; and contribute to solving the most serious social problems and fulfilling the Millennium Development Objectives (MDO) (United Nations Educational, Sci-
In Latin America, 194 million people live in conditions of poverty, of which 71 million are destitute (Comisión Económica para América Latina y el Caribe, CEPAL, 2007). In our societies, the contrast has deepened between the number of individuals capable of functioning adequately in relation to the changing epoch and an immense majority that is increasingly excluded, disconnected and distant from civilizing advances, without any possibilities of influencing the construction of a common destiny, and with the consequent risk for the evolution of collective co-existence and democracy (Programa de las Naciones Unidas para el Desarrollo, 2004).

The possibility that higher education might act as a resource for reversing such a reality and work in favor of the principle noted in this section requires substituting the current professionalizing university model with another or others, whose commitments to human rights and public well-being are closer and more manifest. The task of discovering or designing those emergent university models demands clarifying that, in the case of Latin America, they are not compatible with the concept that compares higher education to a "commercial service" directed by the World Trade Organization (WTO) and subject to the commitments required in the General Agreement on Trade in Services - better known as GATS - in relation to higher education.

The vision underlying the GATS commitments is known as the commodification of higher education, which emphasizes the importance of a knowledge-based economy, where higher education is understood solely as one of the more important profitable factors rather than as a tool for social development. In this context, higher education is perceived as a knowledge industry and the universities, as service providers.

Providing educational service at the tertiary level then falls to individuals with sufficient capital to invest in that enterprise, hoping for a rapid return on that investment. Therefore, privatization and restricting access to higher education, exclusively in favor of those who can "buy" the service, is a natural consequence, which encourages the adoption of this tendency.
In this context, democratic structures and dynamics within higher education institutions are increasingly being replaced by market mechanisms that characterize the directive processes. This phenomenon fails to reflect the complex role of higher education as a means of raising active citizens and including different stakeholders interacting in the institutions' decision-making procedures. Likewise, it impedes guiding academic activities toward contextual human problems that do not generate outputs able to produce earnings in the market.

However, it is also necessary to note that the concept of university education as a human right and public good, implemented in Latin America through unrestricted admission systems, and the consequent massification of the educational institutions have produced an undesired effect; i.e. accelerated deterioration in the quality of education, a matter marked with greatest significance for universities in those countries engaged in the struggle to overcome underdevelopment. This contradiction will be addressed in this Chapter under the section "Quality vis à vis Equity in Higher Education."

RENOVATING MODELS FOR A NEW CONCEPT OF UNIVERSITY

The generic model that has inspired the creation and configuration of universities in Latin America is commonly identified with the Humboldtian model, reintroduced by the University Reform Movement initiated at the University of Córdoba, Argentina, in 1918; even though, as explained in Chapter I of this book, the direct antecedent of the modern research university was the German university, which arose in the shadow of the Humboldtian concept in intimate communion with the novel social organization of science that accompanied the first decades of the nineteenth century. These circumstances determined the vision of universities as training institutions, generators or accreditors of knowledge, and since the Córdoba reform, as "extensionists." However, as we have already clarified, the new codes and referents that besiege the universities have generated transforming tendencies for those institutions.

Three approaches are used to explain the importance of subsidizing higher education as a means to achieving a better educational level on the globe, which will aid development of the coun-
tries and, as a consequence, knowledge and technological advances. The first and strongest of those approaches is the economist focus, led by the World Bank, 1995, which involves exerting strong pressure on governments of the peripheral countries to reduce State financing of higher education, using the argument that the latter does not respond to market demands. An internationally known initiative to steer the new university model according to this tendency is the Bologna Process, put forward to construct the European Space for Higher Education and unify standards, degrees and criteria that govern higher education on that continent.

A second view, of a more humanist character and directed by the Economic Commission for Latin America and the Caribbean -1992- and by UNESCO -1998 and 2009- upholds the strategic importance of higher education - conceived as a public good and a right for all- for economic and social development and, consequently, emphasizes the obligation of States to subsidize the higher education system. As UNESCO points out: "As a public good and a strategic imperative for all levels of education and as the basis for research, innovation and creativity, higher education must be a matter of responsibility and economic support of all governments" (United Nations Educational, Scientific and Cultural Organization, 2009:2). This organism has also insisted on quality, relevance and internationalization as principles for transforming education. Quality, the first principle, is understood in a multidimensional form; that is, quality should be reflected in the different university components: the teaching staff, the academic programs, the students. Relevance, the second, is the way the university responds to the economic, social and cultural needs of its surroundings. Finally, internationalization refers to what the universal character of knowledge means, as well as to the actual processes of economic integration. Within this framework of valuing quality, the mechanisms of assessment and accreditation are seen as strategies for responding to these challenges proposed for higher education (Díaz Barriga, 1999).

A third approach, which includes the second but transcends it, is of a critical nature. It arises from academic sectors unsatisfied with the current university and is inspired by the proposal for complex thought presented by Morin (1999). This approach aims at a
sphere that tends to remain opaque: cognitive representation systems, epistemic maps that serve as commands for reflexivity, paradigms that function as presuppositions in the field of research and knowledge production.

These three approaches are not the only answers to the creation of new universities. Parallel to this in the panorama of higher education, different university models have been configured; of those, two have been particularly influential in the Latin American context, although they diverge from each other. One model aspires to reconceptualize these institutions as entrepreneurial universities, while the other’s ambition is to transform them into developmental universities.

From the theoretical viewpoint, more work has been done on the entrepreneurial university model, surely because that model is not exclusive to developing countries, but accompanies university reconceptualization in the developed world. However, the developmental university model has sufficient presence in the literature and has acquired momentum among African and Latin American countries.

Both models are excluding, since "entrepreneurial universities" serve the needs and requirements of the business and productive sectors through pioneering research. And, while it is true that development-oriented universities are called upon to take care of the demand of the productive sectors, they give priority to a more immediate aspiration: satisfying the individual and social human (not entrepreneurial) needs of those who use the innovation and knowledge production systems.

Recently, a variation on the developmental university model has arisen in Latin America, which this book has called the "socialist university." The antecedent for this format was the Cuban higher education system, but it has taken on a special strength in Venezuela and therefore, is the object of detailed analysis in this book.

**Entrepreneurial University (EU)**

This university model is directly linked to technological development centered on industrialization and economic growth. Students in this university model are trained in the production and constant consumption of goods and services, as well as in expert knowledge and handling of the international standards and regu-
lations that govern commerce and economic exchange. Ethical, aesthetic, affective, spiritual and solidarity-related training is not a guiding principle for this model. Entrepreneurial universities make conscious efforts to prepare their students to think strategically and to understand the prevailing socio-cultural norms, political processes, the latest business trends and technological know-how correctly (Kothari and Fowler, 2005).

In essence, it amounts to the commodification of knowledge, generation of funds for research from non-statutory and private sources, too much emphasis on performance-based evaluation, avoidance of non-tradable research, technology transfer through business-university research partnerships, consortia and specialist units leading to intellectual property rights, fragmentation of teaching and research, etc. (Gupta, 2008:2).

The consideration of higher education as goods that have a free supply and demand on the global market and the transnational supply of education as part of a system of academic capitalism, are premises belonging to these universities. These considerations indicate the inconvenience of adopting the entrepreneurial university as a model for reconceptualizing universities in Latin America, since the fundamental principle that characterizes higher education as a public good and a human right demands its exclusion from a set of goods whose circulation is governed exclusively by the market, as explained under the subtitle, "The Concept of University Education as a Human Right and Social Good," found in this chapter.

Nevertheless, in Latin America and other underdeveloped countries, especially those with emerging economies, there are universities that have successfully adopted this model, as Burton (2005: 4) illustrates when explaining cases of the universities of Makerere in Uganda, Africa and the Catholic University of Chile in Latin America, which present five key elements for their transformation into entrepreneurial universities:

...first, diversified university income; second, strengthened steering capacity; third, an extended developmental periphery consisting of non-departmental research centers and outreach programs; fourth, a
stimulated academic heartland – old departments newly activated; and, finally, an embracing entrepreneurial culture...

Other examples are the Universidade Federal do Rio de Janeiro–UFRJ (Federal University of Rio de Janeiro) and the Technological Park of Rio whose goals are: to create new technology-based companies; to promote technology transfer from UFRJ labs and increase the competitiveness of the installed companies; to amplify visibility for the technological vocation in the city of Rio de Janeiro; to stimulate an entrepreneurial attitude among the students; to encourage new advanced research projects; and to obtain new financial sources for the UFRJ through the rental of available areas on campus.

Additional examples are the Universidade Estadual de Campinas (University of Campinas) Brazil, EARTH University in Costa Rica and the Universidad de Monterrey (University of Monterrey) in Mexico.

**Developmental University (DU)**

Universities oriented toward development, according to the known literature and references, are universities that seek to achieve endogenous and/or sustainable development in the country where they operate. Leaving aside the debate about the concept of endogenous and sustainable development itself, which is not insignificant, we have to clarify whether or not those universities are destined only to solve local problems using preexistent knowledge that is not necessarily innovative or advanced.

The commitment of this type of university to development links it to knowledge production considered mainly from a utilitarian approach, as we explained in Chapter II (Thematic Axis 2, "Orientation of the University: Developmental Oriented Universities"). Due to this fact, the risk of prolonging an undesirable situation remains: in the North, innovative technology (know how) is produced, while in the South, universities dedicate themselves to improving the quality of life and inclusion without paying attention to innovation systems.

Mwamila, Diyamett and Kihedu (2008) illustrated this tension with the situation faced by universities in Tanzania. According to the aforementioned scholars, scientific research performed in
that country's universities, especially research completed in the Faculties of Science, is not put into practice; it follows the mainstream of international science and its indicators. There is no connection between the role it plays as a generator of scientific or technological innovation and its acclaimed role as the suitable device to satisfy the needs of the national productive system in order to impel endogenous development.

From the information handled until this point, it can be said that universities seem to have two options: the first would be doing "big" science, only for the scientific end in itself, and the second, descending to the level of "small" science that can effectively resolve existing problems in the productive sector. From this idea, two questions appear: First, can "big science" solve local and community problems in developing countries? And second, can "small science" become an engine for scientific and technological upgrading? The answer to both questions has to be negative.

If we insist on transforming universities of the South into universities oriented toward development, we must previously specify, carefully, if and to what extent those universities are committed to innovation and advanced scientific research. If we do not do this, higher education could become a "social carpenter," where thoughts and abstraction - pre-conditions of analytical development in science and technology - would be of no use; and, on the other hand, only learning with a purpose would be valued. Furthermore, if that purpose is exclusively to satisfy local and community human problems, the universities would be moving Latin American countries away from internationalization, with the inevitable consequence of converting the continent into a bunch of unviable, poor countries buried deep in a marginal region in the not-too-distant future (Albornoz, 2005).

In view of that, whereas we recognize the important descriptive value of the developmental university concept, in the terms in which it has been introduced by Sutz (Sutz, 2005; Arocena et al. 2008) to scientific literature about higher education, we also believe that this model should not be the only one or the one that best orients the reconceptualization of universities in the South. There, alongside developmental universities, other models have to exist, such as world class, research-oriented, technological, profession-
alizing universities, as well as colleges or institutes of tertiary education, among other possibilities. In unison, these institutions should take care of frontier knowledge production (centers of excellence) on the one hand, and, on the other, training that tends toward satisfying the nearest, most everyday problems.

In this sense, the effort being made in China to diversify its higher education system is very interesting. There, universities are viewed as key institutions to prepare the country for many changes that will lead it into the knowledge economy, a goal to be reach by 2050. In relation to this goal, the university's function is to contribute as a protagonist to Chinese economic prosperity and strategic national priorities, providing a local base of human talent intellectually trained for the new high tech industries. "Ten universities are to become 'world class' institutions, 100 are to function as 'world standard' research universities and the remaining 1600 will mainly carry out teaching activities" (Zhao and Guo, 2002: 215-216).

Furthermore, on this point, we consider it beneficial to add an adjustment to the concept of developmental university proposed by Sutz (2005), through which we will offer greater clarity about some aspects of the concept that are still opaque. Table 33 includes a double characterization of the developmental university model. The first column presents the original formulation of the developmental university model; the second column shows the reformulation proposed by the authors.

<table>
<thead>
<tr>
<th>Universities Oriented toward Development (Sutz 2005)</th>
<th>Universities Oriented toward Development (Authors 2009)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practice an integral commitment to development.</td>
<td>Generate knowledge that supports problem solving “in, with and for” the contexts in which the university is located and builds capacities that contribute to human, sustainable development.</td>
</tr>
</tbody>
</table>
### Table 33

**Adjustment of the Developmental University Concept by Sutz (Continued)**

<table>
<thead>
<tr>
<th>Universities Oriented toward Development (Sutz 2005)</th>
<th>Universities Oriented toward Development (Authors 2009)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Differences</strong></td>
<td></td>
</tr>
<tr>
<td>Functions: Teaching, research and cooperation for development with other institutions and collective actors.</td>
<td>Functions: Integral training, satisfying people-centered development needs, capacity building and formative research.</td>
</tr>
<tr>
<td>Cooperation with external actors.</td>
<td>University and extra-university actors involved in performing academic functions.</td>
</tr>
<tr>
<td>Connection between the productive and the educational sectors.</td>
<td>Connection between the external sector (productive/entrepreneurial, governmental or communitarian) and the educational sector.</td>
</tr>
<tr>
<td>Centered on scientific research.</td>
<td>Centered on research based on a heterodox mode of knowledge production or on scientific research.</td>
</tr>
<tr>
<td>Active participants in the innovation system (indispensable condition).</td>
<td>Active participants in the innovation system (dispensable condition). Committed to an ethical formation inspired by civic, democratic values.</td>
</tr>
<tr>
<td></td>
<td>Committed to multicultural education.</td>
</tr>
<tr>
<td><strong>Coincidences</strong></td>
<td></td>
</tr>
<tr>
<td>Innovative in a self-reflecting manner: change becomes an institutionalized habit or state of things.</td>
<td></td>
</tr>
<tr>
<td>Generalization of teaching advanced throughout life (life-long learning) connected to the world of work.</td>
<td></td>
</tr>
<tr>
<td>Teaching through social and productive problems in the region where the university is located.</td>
<td></td>
</tr>
<tr>
<td>Research agendas designed based on problems coming from the productive environment and social situation.</td>
<td></td>
</tr>
<tr>
<td>Incorporation of all forms of knowledge.</td>
<td></td>
</tr>
</tbody>
</table>

Source: Authors.
Socialist University

The socialist university has a goal to train a new citizen-professional educated under socialist values in order to fracture the capitalist hegemony in the country and the planet, but not to train its students to perform sufficiently intellectual work so as to generate innovation and advanced technology.

In Venezuela, the UBV has served as an example to evaluate the emergence of a new university model compatible with the needs of developing countries; it adopted many characteristics of the developmental university, but additionally, incorporated others that define the model we have called socialist (Bozo, Parra-Sandoval and Inciarte, 2009). The comparative analysis applied to this and other Venezuelan universities as part of our research has led us to point out several weaknesses in this model, as it has been established in Venezuela and, at the same time, it has served as an experience to indicate the risks of extrapolating the UBV's developmental/socialist format to other countries.

Socialist universities are only partly higher education projects because their central commitment is not to train students or produce research, but rather to indoctrinate the students in a socialist Weltanschauung that converts them into citizens committed to an axiological position and a political practice according with the former. To date, the university has defined itself as a meeting space for diverse currents of universal thought and, whereas it is certain that it is included by many on the list of "enclosures" together with the family, prisons or mental asylums (Foucault, 1992), it has behaved as the emblematic realm for critical and even anti-establishment thinking in Latin America. The most generally accepted concept of university excludes censure and consecrates the principle of "autonomy" (mainly academic) precisely to protect the absolute freedom to discuss, analyze and contest any current of thought.

The Venezuelan emergent university model was not created to become a research platform that seeks to be in the vanguard of knowledge, but to be a public social policy, whose success is inter-related with mobilizing the population base around projects and actions adapted to improve living conditions and ideologize young
graduates, who will be educated in some values contradictory to capitalist logic. According to the institutional documents reviewed, the purpose of these Universities, represented by the UBV, is:

Transformation ... into an institution in the vanguard facing the construction of a Bolivarian socialist society within the framework of the Proyecto Nacional Simón Bolívar 2007-2021, through its fundamental component of techno-political training for citizen-professionals, the production of types of knowing relevant to the strategic objectives of the country and the generation and implantation of values in society based on equality, co-responsibility, solidarity and the collective commitment of the subjects of socialist Venezuela in the twenty-first century (República Bolivariana de Venezuela, 2007).

The rationale underlying this kind of institution is one of indoctrination and training political groups committed to a specific project for a country. The information that is handled, read, discussed and about which reflections are made in this institution must mirror a sole concept of the world and of life: a vision called by some progressive, in the forefront, emancipating, anti-imperialist, anti-liberal – in a word, socialist.

This policy fulfills a role of legitimizing the government in the national as well as international arenas; in the national ambit, because acquiring a university career is a social goal highly valued by the citizenry and the university's output will be an indoctrinated human being with no capacity to critique the official status quo; in the international arena, because the increasing number of students or graduates on the third educational level (higher education), independent of the type or quality of training received, gives a positive image of the country in the world-wide indicators that measure human development.

However, in the case of Venezuela, there are serious risks to be considered. Will UBV graduates be able to access job positions in other than governmental branches? Will they be judged as second-class professionals trained ideologically, but lacking the skills expected from a university professional? Will they be world-
class, worldstandard professionals? Will graduates from universities other than the UBV have a place in the public structure? And, therefore, will the UBV widen the qualified performance breach between public and private firms, some operating with a type "A" professional and others with a type "B"?

Many other questions remain. Is it necessary or convenient for a country's development to have a "socialist state class" university? What socio-economic inconsistencies will a higher education system generate when only one type of university supplies human talent to the largest employer in the country, i.e. the State? What competences and abilities will their students acquire besides a socialist conscience? Do the "socialist state class" universities have the current or potential vocation to become engines for development?

All these questions and many more should be answered because university education in underdeveloped countries has to share a serious commitment to knowledge production as a strategy for achieving scientific, technological, economic, political and cultural sovereignty (independence). Knowledge has been proven to be the only effective weapon to combat underdevelopment. In this regard, Nigavekar (2003) explained:

Knowledge is at (the) core of all development efforts in advancing economic and social well-being in underdeveloped, developing and emerging nations. The driving force for economic and social development is thus, advancement and application of knowledge. In short, knowledge is becoming wealth. It is here higher education comes at the centre of the stage because it is a powerful tool to create, adapt and spread knowledge in all disciplines and all subjects.

If a university is careless of this commitment or substitutes it by adhering to another priority linked with indoctrination and ideologization, such a university will not be working in favor of endogenous, human and sustainable development. Of course, developing countries do need physicians with values of solidarity, with a clear commitment to the human rights of the poorest; however, they also need physicians who know how to examine a patient or
perform surgery and they do urgently need scientists with the proper training and capabilities to research the prophylaxis for all the serious illnesses that their countries' inhabitants suffer.

**EXPECTATIONS AND CHALLENGES FOR THE UNIVERSITY IN DEVELOPING COUNTRIES**

When we approach the analysis of the university in developing countries, we detect some irrevocable expectations, needs and desires that should be deepened or assumed by such institutions. However, at the same time, each of those expectations arises facing a challenge that adheres to it and is likewise indeclinable. The tensions resulting from these expectations and challenges are the central nucleus of the most important contemporaneous discussions about higher education. In the following paragraphs, we will present those tensions that are inevitable for working on the reconceptualization of universities in Latin America and in developing countries in general.

**Quality vis à vis Equity in Higher Education**

In the last five years, declarations by international organizations and bodies active in higher education have emphasized inclusion and equity as necessary goals to be incorporated in the effort to redefine universities in developing countries. The Conferencia Regional de Educación Superior-CRES (Regional Higher Education Conference for Latin America and the Caribbean) (United Nations Educational, Scientific and Cultural Organization, International Institute for Higher Education in Latin America and the Caribbean, 2008a) and the II World Conference on Higher Education-WCHE (United Nations Educational, Scientific and Cultural Organization, 2009) concluded that, in the higher education field, quality cannot exist if equity has not been developed. Nevertheless, the aspiration to equity continues to be one of the most important, unfulfilled promises of educational modernity on this continent, despite the fact that, in the recent years, a significant increase in university enrollment rates has been observed.

In effect, higher education enrollment in the less-developed countries (Latin America among them) reaches 23%, while the same indicator for member countries in the OECD (Organization for Economic Co-operation and Development) is at 68.7% (United
Nations Conference on Trade and Development, 2007). The 2007 Report on Higher Education in Iberoamerica (Centro Interuniversitario de Desarrollo, CINDA, 2007) states that in the majority of Iberoamerican countries, the quintile with the highest income sends at least 50% of their children to higher education, while in the case of the poorest quintile, the figure oscillates between 0% and 20%.

A singular case in this aspect is Venezuela, where an emerging university model, as mentioned in this book, has been implemented. This model has utilized municipalization ("the university going to the villages") as a strategy for reaching equity in higher education admissions. As a result, in the last decade, it has increased enrollment at this level by 320%. During the period between 2003 and 2007, the number of students enrolled in Venezuelan higher education rose to 2,135,146, as Graph 8 shows.

The expansion of enrollment in Venezuela, as a consequence of the municipalization put into effect by the emergent higher education model, has benefited groups that were previously pushed into the background. As indicated under the title "Spatial Distribution" in Chapter III, the 1700 university villages distributed in 335 municipalities throughout the national geography currently
attend to a fourth of all students enrolled in higher education. Table 34 shows the composition of the enrollment by economic sectors in 1984 and 1998; the last year mentioned, 1998, signaled the beginning of the government that generated the implantation of the new higher education model in 2003.

### Table 34
Comparison of Student Demand Satisfied by Public Universities Classified According to Socio-Economic Level and Expressed in Percentages in the Years 1984 and 1998

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>5,612</td>
<td>3,084</td>
<td>54.95</td>
<td>4,652</td>
<td>4,647</td>
<td>99.89</td>
</tr>
<tr>
<td>Upper Middle</td>
<td>19,820</td>
<td>11,385</td>
<td>57.44</td>
<td>31,615</td>
<td>25,653</td>
<td>81.14</td>
</tr>
<tr>
<td>Lower Middle</td>
<td>37,682</td>
<td>23,442</td>
<td>62.21</td>
<td>63,336</td>
<td>30,416</td>
<td>48.02</td>
</tr>
<tr>
<td>Worker</td>
<td>22,344</td>
<td>14,918</td>
<td>66.77</td>
<td>34,168</td>
<td>9,239</td>
<td>27.04</td>
</tr>
<tr>
<td>Very poor</td>
<td>1,885</td>
<td>1,337</td>
<td>70.93</td>
<td>1,993</td>
<td>393</td>
<td>19.72</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>87,343</strong></td>
<td><strong>54,166</strong></td>
<td><strong>62.02</strong></td>
<td><strong>135,764</strong></td>
<td><strong>70,348</strong></td>
<td><strong>51.82</strong></td>
</tr>
</tbody>
</table>


In the preceding figures, one can see how admission of the worker and very poor sectors to public universities - three of which were objects of the comparative analysis that motivated this book - was reduced to little more than half and to less than a third, respectively, between 1984 and 1998. Likewise, it should be noted that the total number of students who entered universities also decreased in that period from 62.02% in 1984 to 51.82% in 1998.

In contrast, Table 35, which details Venezuelan university enrollment according to socio-economic level from 2000-2004, evidences that the number of students coming from the worker and poor classes - persons with disadvantaged cultural capital, difficulties in their school biographies, and scarce academic assets - tends to increase in the period corresponding to the implementation of the new higher education model in Venezuela.
Table 35
Registration of Students Assigned to the Public Sector of Higher Education by Social Strata, Period 2000/2004

<table>
<thead>
<tr>
<th>YEAR</th>
<th>TOTALS</th>
<th>HIGH</th>
<th>UPPER MIDDLE</th>
<th>LOWER MIDDLE</th>
<th>WORKERS</th>
<th>VERY POOR</th>
<th>NO INFORM.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Nº</td>
<td>Nº</td>
<td>Nº</td>
<td>Nº</td>
<td>Nº</td>
<td>Nº</td>
<td>Nº</td>
</tr>
<tr>
<td>2000</td>
<td>37,308</td>
<td>615</td>
<td>6,491</td>
<td>15,41</td>
<td>9,87</td>
<td>630</td>
<td>4,293</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1.6%</td>
<td>17.4%</td>
<td>41.3%</td>
<td>26.4%</td>
<td>1.7%</td>
</tr>
<tr>
<td>2001</td>
<td>43,276</td>
<td>1,345</td>
<td>9,584</td>
<td>15,43</td>
<td>9,51</td>
<td>611</td>
<td>6,79</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3.1%</td>
<td>22.1%</td>
<td>35.6%</td>
<td>21.9%</td>
<td>1.4%</td>
</tr>
<tr>
<td>2002</td>
<td>45,191</td>
<td>1,139</td>
<td>10,08</td>
<td>19,56</td>
<td>12,6</td>
<td>888</td>
<td>979</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2.5%</td>
<td>22.3%</td>
<td>43.3%</td>
<td>27.8%</td>
<td>2.2%</td>
</tr>
<tr>
<td>2003</td>
<td>44,144</td>
<td>1,197</td>
<td>9,824</td>
<td>18,89</td>
<td>12,3</td>
<td>1,162</td>
<td>741</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2.7%</td>
<td>22.2%</td>
<td>43.8%</td>
<td>27.9%</td>
<td>2.6%</td>
</tr>
<tr>
<td>2004</td>
<td>58,789</td>
<td>1,206</td>
<td>12,15</td>
<td>23,91</td>
<td>18,3</td>
<td>2,511</td>
<td>733</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2.0%</td>
<td>40.6%</td>
<td>31.1%</td>
<td>4.3%</td>
<td>1.2%</td>
</tr>
</tbody>
</table>

Source: Oficina de Planificación del Sector Universitario, OPSU, 2005.
The Programa Extraordinario Mariscal Sucre (Extraordinary Marshal Sucre Program) or Misión Sucre, which was the name adopted by the municipalization process, took care of approximately 360,000 students between 2003 and 2007, of which more than 50% belonged to the most disadvantaged socio-economic groups in the population, as shown in Table 36.

<table>
<thead>
<tr>
<th>Age Group of Beneficiaries (% of Persons)</th>
<th>Average Age of Beneficiaries</th>
<th>Socio-economic Groups (% of Persons)</th>
<th>Gender of Beneficiaries (% of Persons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>From 10 to 17 years</td>
<td>4.1</td>
<td>Income Quartile I 19.9</td>
<td>Masculine 30.8</td>
</tr>
<tr>
<td>From 18 to 30 years</td>
<td>61.1</td>
<td>Income Quartile II 25.2</td>
<td></td>
</tr>
<tr>
<td>From 31 to 50 years</td>
<td>33.4</td>
<td>Income Quartile III 32.3</td>
<td>Femenine 69.2</td>
</tr>
<tr>
<td>51 years or older</td>
<td>1.4</td>
<td>Income Quartile IV 22.6</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>Total 100</td>
<td>Total 100</td>
</tr>
</tbody>
</table>


However, the optimism of these figures hides a double fallacy that should be brought to light, because, on the contrary, the development of Latin American countries could be in grave danger. The first fallacy results from conceiving the association between quality and equity as automatic, when in reality, such an association stems from pre-establishing quality as a previous and necessary condition for the accomplishment of equity. The second derives from identifying quality exclusively with greater rates of inclusion, putting aside the consideration of another series of dimensions that configure the quality of higher education institutions together with greater inclusion rates.

The design and implementation of policies that disregard quality, while furthering only inclusive (massive) access and successful participation, such as the vast creation of universities, open and unlimited admissions, and the municipalization of higher edu-
cation, (the way it has been carried out in Venezuela, for example), may produce the exact effect they were originally designed to combat. They may lead to greater, more widespread impoverishment and, in consequence, to perpetuating present conditions of underdevelopment and cultural backwardness, scientific dependency, and the country's location on the so-called capitalist periphery. In the following paragraphs, we will explain the three main reasons that prove this statement.

The first reason refers to flaws in the qualifications of the professorial personnel due to the sudden increase of students the university must serve and the natural rigidity of the number of qualified professors and researchers available to attend that increase.

In Latin America, equity policies are not new; equity in higher education has been the keystone of state plans in several periods. During those periods, a democratization program has led to a sudden increase of universities and an enlargement of the volume of people enrolled in higher education, as State measures to guarantee free and unlimited access to that educational level. In all cases, the number of professors rose due to pressures caused by overcrowding; however, this was not accompanied by academic development to ensure proper qualification of the professors contracted, as has been illustrated in the cases of Mexico (Equipo Inter-institucional de Investigadores sobre los Académicos Mexicanos, 1994) and Brazil (Shwartzman and Balbachevsky, 1996).

In Venezuela, between 1958 and 1960, higher education enrollment increased by 84.16%; meanwhile, the rate of academic staff increase was 20.82%. Between 1970 and 1975, higher education enrollment rose to 225%, but the number of professors increased by only 76.54% (Oficina de Planificación del Sector Universitario, OPSU, 1990: 317).

In 2003, there were 73,663 university professors (Oficina de Planificación del Sector Universitario, OPSU, 2006) to attend to 991,860 young people enrolled in higher education. The increase in higher education enrollment required a proportional increase in the number of professors. In spite of this consideration, records disclosed by OPSU list a total of 78,984 professors in 2007; this represents an increase of only 7.22% in relation to the total academic
personnel in universities in 2003 (Oficina de Planificación del Sector Universitario, OPSU, 2008).

The unequal proportion in the increased rates of students and teachers results in a deterioration of the quality of education provided, due to the high number of students each professor must attend. But aside from "the different rates, pressure resulting from student demand has forced the institution to recruit staff with a minimum level of training, no experience in higher education and little or no professional experience" (Parra-Sandoval, 2009: 132). Selection as well as training processes undergone by the professorial personnel called upon to assist higher education institutions developed to orchestrate these government equity policies have been meager and improvised.

In countries like Nicaragua (after the triumph of the Sandinista revolution in 1979) and Venezuela (after the triumph of the Bolivarian revolution in 1998), the majority of educators called on to enlarge the ranks of the new universities consisted, principally of young university graduates who were invited to become professors with no requirements for additional academic credentials or experience.

In Nicaragua, students in the last level of higher education became professors, together with a few young volunteer scholars from other Latin-American countries. In effect, in the face of the emergency call for teaching personnel:

...two solutions are sought: on the one hand, arrange the cooperation of foreign teachers on the international level and, on the other hand, look within the same university for cooperation from the student body... The ...mode ... of Student Assistants (Alumnos Ayudantes-AA)...These students receive methodological courses for the subjects they teach (Equipo Envío, 1986).

Equity demands a double challenge. On the one hand, it demands increased access for sectors left behind in the higher education system; and on the other hand, it must fulfill the undeniable need "to make the education offered less segmented among different social strata" (Hopenhayn and Ottone, 2000:81). In its desire to answer both challenges, higher education will become more inequitable when it allows people with deficient symbolic assets (useful
knowledge and skills for combating underdevelopment) to be instructed by "trainers" who are victims of an equal deficiency; this, obviously, will deepen the segmentation of its quality, aggravated by creating false expectations in the student population and, on the level of public policy, the country will stop paying attention to the problem because it will be seen, falsely, as having been resolved.

Consequently, the education received by the masses of students, who legitimate the achievements of universalization and equity by this route, produces the multiplication of inequality since, in Venezuela, as has been said, what is being achieved is to equitably universalize ignorance. If a higher education institution offers training by using those who lack it themselves, it is transformed into a fraud.

The second reason, a consequence of the first, is the absence of scientific researchers as faculty members at the universities created in an improvised fashion to achieve equity in higher education enrollments. According to diverse indicators, less than 2% of the researchers in the world live in the South, and the average proportion of researchers per million inhabitants in developing countries is much lower than that recommended by UNESCO. In developing countries, there are 313 researchers for every million inhabitants, while in OECD member countries, the number is 3,728 researchers for every million inhabitants; in other words, the number is 10 times greater (United Nations Conference on Trade and Development, 2007). This number helps us to conclude that there seems to be a directly proportional relationship between the number of researchers and the development level of a country.

In Latin America, the scant number of researchers that do exist work for universities. Indeed, in these countries, 85% of the scientific research is accomplished within universities, as it has been pointed out by Gazzola (Quintero, 2008). This has led to affirming that in developing countries, universities are often the only institutions with the capacity for improving highly skilled manpower, transferring technology and generating new knowledge (Kariwo, 2007).

Universities portray themselves as the spaces with the greatest potential to impel development through knowledge production. However, according to Latin American accreditation systems for researchers, most of them are full-time professors in the con-
solidated universities, many of which maintain restricted or limited admissions policies. Thus, for example, for the year 2004 in Uruguay, more than 80% of the researchers belonged to the University of the Republic; in Venezuela, 84% were personnel at the national public universities; and, in Brazil, research groups concentrated in such universities added up to 95% (Arocena et al., 2008). Considering this circumstance, it is easy to conclude that the academic personnel contracted to satisfy the universalization of university education, under discussion in this section, are not part of the body of researchers for their respective countries.

In Venezuela, there is no documented evidence of the existence of research centers or institutes at most of the universities founded as a result of the new national government’s policies to achieve universalization in the higher education system. The explanation is that these universities, created to satisfy that goal, conceive equity as a value foreign to quality and, consequently, the actions and policies that they implement pursue satisfying the first goal without requiring the second during implementation.

The third reason concerns an unfavorable cultural environment for intellectual development in universities created only to increase the number of students looking for equity in higher education. The pressure to satisfy the goal of transforming elitist higher education into universal higher education has generated strategies such as the so-called "municipalization of higher education" as it has been reiterated in the course of this book. In the case of Venezuela, if it is true that most young people from impoverished populations have become involved in educational processes through this strategy, it is also true that such a process is carried out in the same geographical area to which these young people belong. This circumstance prevents a fortuitous interaction with practices and cultural activities associated with intellectual development and scientific culture; in a few words, it prevents contact with ways and styles of the professional or academic world; for example, access to informational resources and ICTs, the availability of documentary references, bibliographic material, libraries, possibilities to interact in workshops, conferences and seminars.

Considering that educators at these so-called higher education institutions are often inhabitants of the same narrow environ-
ment and, thus, suffer from the same deficiencies in terms of cultural capital, it is easy to conclude that the education imparted reproduces the conditions of intellectual insufficiency and isolates the new generations in their hamlets and settlements, perpetuating a cycle of poverty and deprivation that results in the inequitable treatment of these young people in relation to others who can obtain higher education in a proper environment for intellectual performance. Hopenhayn and Ottone (2000:79) affirm that "a better distribution of symbolic assets today cultivates a better distribution of material assets tomorrow." If we reason according to the argument *a contrariu sensu*, we can conclude that the inverse is also true and, therefore, a meager, null or worse distribution of symbolic assets today will generate greater social impoverishment.

Although there are a number of questions concerning this issue that remain to be answered, the most evident one is: What would the alternative be? As we are convinced that the answer to this question surmises public policy decisions that go beyond the rationale of this book, it is almost certain that policy makers in developing countries must promote the elevation of socio-economic-cultural conditions in the rural environment, previous or parallel to implementing universal higher education policies, which cannot accomplish their avowed promises of equity when carried out in an isolated manner. Therefore, it would be a good path to explore the building up of "university cities" or full cultural/learning environments around universities in rural areas. Albornoz (2005) considers the creating of knowledge communities as the "only way" to achieve endogenous development.

**University Knowledge Production: Scientific or Heterodox?**

The current university model around the world conceives knowledge as a product of systematic processes rationally designed to apprehend and explain outer reality according to worldwide experimental and intellectual methods. In that model, knowledge production requires skills that are exclusive to scientists. Scientific knowledge occurs in the university and other suitable environments and is distinguished from extra-university or colloquial knowledge. This concept animates the idea of "world class universities" and prevails in the scientific mainstream.
CHAPTER IV.
A Plurality of Concepts for Universities in Developing Countries

However, universities in underdeveloped countries debate between the need for expanding their scientific, technological and innovative potential and the urgency of taking care of conditions that prolong inequality and poverty, thereby responding to the challenge to construct shared development alternatives that permit improving living conditions for their societies. This situation introduces the discussion about "positive social return" on governmental investment in university education in developing countries and, consequently, assessment of the real impact that knowledge production has on surpassing the minimal conditions for survival, which the majority of its inhabitants suffer, from the perspective of sanitary, educational, infrastructural, urbanistic and cultural well-being; in a word, human development that belongs to and is consonant with the country under consideration.

Even though, apparently, there should be no contradiction between the role of the universities and the aforementioned positive social impact or return on their activity in these countries, if we analyze more deeply, we discover a significant tension between the practical instrumentation of that return and scientific knowledge production, in code, "the developed North." Many of the contextual problems belonging to underdevelopment can be resolved by the simple application or adaptation of previously produced knowledge; they do not demand research into problems defined by the international scientific agenda, which have the high degree of sophistication that accompanies the development of the most advanced countries on the planet.

As it has been repeatedly mentioned in this book, the model of developmental universities, which has inspired many efforts to re-conceptualize the university in countries of the South, includes knowledge production for achieving environmental sustainability and improving the quality of human life, either through research performed following scientific mainstream standards or through research that incorporates daily ways of knowing and dialog with extra-academic actors.

Therefore, we witness two modes of producing knowledge: The first is the scientific mode (conventional and systematic) and the second is what we have named the "alternative or heterodox" mode, which is neither organized nor recorded according to conventional codes used in international scientific research. Daily knowledge pro-
duced in non-academic spaces has gained strength; this mode, corresponding to the emergent model, has been implemented in some universities in developing countries; epistemological routes have opened up for interacting with those spaces and ways of knowing; and a dialog or integration has been initiated with scientific knowledge, which helps us glimpse the coming of a new (university) science, less attached to the rigid demands of systematicity, validation and publication, belonging to the science inherited from modernity.

Diverse ways of knowing and their multiple cultural manifestations are recognized and recovered in university spaces: daily, aboriginal, popular and community knowledge, in the sense conferred by Gillies (2005:1): "Aboriginal knowledge, until now, has been invisible and devalued...It was thought that in order to join the modern world we had to give up our traditional knowledge. We're here to say that it continues to exist and that it's valuable."

Although the recovery of daily types of knowing goes hand in hand with satisfying the claim for positive social return that confronts universities and with its ethical commitment, as recognized by Peter and Ossen (2008: 59):

In general, these processes (cultural change, emphasis on the reflective professional and the change to practice) mean, among other things, that didactic activities are fundamentally commitments to other people in the world, which implies that learning and teaching are, above all, social activities, “actions,” activities or performances without internal processes ... All these approaches establish a rich series of connections between theories about practice and the inherent ethical-political commitments.

Here again, there are some important unsolved questions: To what degree is such colloquial knowing (learned in spaces other than the university, i.e. communities, tribes) raw material for constructing technological progress? Does this alternative knowledge have the potential to become a crucial factor for encouraging development? What validity does useful knowledge have for professional training when it is not the product of a systematic research process?
The tendency to reform curricula so that they eliminate the distinction between university-acquired knowledge and knowledge acquired in daily life, could weaken or obviate the capacity of such curricula to improve the competences that students already possess or to initiate students into complex intellectual tasks.

One implication of what has been expressed here is enthroning utilitarianism as a measure of quality in higher education to the detriment of intellectual work that has no practical consequences. This implication raises the following questions: Should higher education institutions in developing countries be considered non-intellectual environments? Are scientific (intellectual) research and social value oriented research excluding rather than complementary concepts?

To divest the universities of their condition as privileged spaces for scientific knowledge production so that they assume socializing functions, which, although laudable, can and should be fulfilled by other governmental and social authorities, leads to prolonging the undesirable state of things. According to this, the North advances by giant steps in scientific production and innovation (know how), and in the South, there is no institution to generate that innovation or train young generations in that activity; therefore, dependence in terms of food, pharmaceuticals, computer science, electric power, etc. will be perpetuated. Consequently, in developing countries, we could be obtaining what we have called "the trivialization of higher education," an aspect that will be explained in the next section.

The Trivialization of Higher Education

By trivialization, we understand a process of the growing banality of university education that translates into two phenomena: one, the massive bestowal of degrees that do not reflect sufficient preparation by those who receive them for performing a job with a high intellectual demand or that generates scientific-technological innovations; and two, the multiplication of insufficiently trained professionals (according to world professional qualification standards) as the consequence of an improvised proliferation of universities where thoughts and abstraction are of no use, and everything learned must have a purpose associated with local needs.

Arocena et al. (2008:152) refer to this phenomenon as the risk that universities of this century "tend to act like supermarkets of
poorly trained graduates, an inevitable drift if they are limited to being factories dedicated to producing 'useful' knowledge and qualified workers."

Furthermore, trivialization produces a double fallacious illusion: first, on the personal level, and second, on the collective level. On the personal level, the student believes in the academic project in which he/she participates and hopes that the university training will prepare him/her as a competent and competitive professional. In reality, the degree the student receives will be only an unsupported credential, since his/her intellectual assets will be insufficient to start and develop him/herself in the labor market which, as a consequence of globalization, is ever more demanding and selective.

On the collective level, both the increase in higher education enrollment through the improvised creation of universities and the tendency to enthrone the alternative or heterodox knowledge production mode, help to maintain the conditions of underdevelopment and scientific and technological dependence they theoretically want to combat. Through this route, developing countries discard the possibility of forming a local platform for scientists, a higher learning society and a stable intellectual system, unique authorities for generating the long-desired launch toward development and sovereignty.

As a conclusion to this section, it can be said that the education given in universities created following exclusively the dictum of universal higher education cannot be properly called higher, and their graduates are individuals without the potential to become the human talent that drives development, committed to the advance of social science and technological innovation. These ideas have been expanded by authors such as Landinelli, Mac Dowell de Figuereido, Mollis, Manigat, and Mato (2008), who have expressed that, without the possibility of performing the function of producing new knowledge, by restricting their goals to the routine transmission of proven skills, by certifying studies or producing degrees in series, higher education institutions will be reduced to the condition of tertiary teaching centers. To limit oneself to promoting a tertiary type of teaching in the belief that it promotes teaching of the higher type, produces a weakening in the idea of the university and consolidates even further the advancement of the industrialized countries in matters of research.
TOWARD A NEW CONCEPT OF UNIVERSITY FOR DEVELOPING COUNTRIES

Various questions encourage the undeferrable task of reconceptualizing the university for developing countries. The first we want to introduce leads the list, as it relates to the philosophical and pragmatic approach behind the concept: What university do we need? Whatever answer we give it will, obviously, raise a series of other questions, as for example: One that produces cutting edge scientific and technological knowledge or another that satisfies contextual problems? To what degree is the university a protagonist in overcoming underdevelopment? Will universities of the new wave be institutions dedicated to academic functions with a direct impact on reaching dignified standards of living among the citizens in the territory or region where they are located? What tensions emerge when one tries to reconcile the university dedicated to advanced research with the university dedicated to overcoming underdevelopment?

As the reader may deduce, the answers are complex and filled with conditions and nuances. In the following paragraphs, we will point out some of those circumstances and subtleties in order to conclude with a proposal for a pluri-conceptual framework whose objective is to provide alternative keys with which to impel transformation of the Latin American university, so that it serves purposes for both the advanced knowledge society as well as the backward, peripheral reality to which our continent belongs.

Unavoidable Conditions and Nuances for Undertaking Reconceptualization of the Latin American University

1. The inclusion and consequent transition from a higher education of the elite to universal higher education is a condition *sine qua non* for any reconceptualization of the university for developing countries, because only by complying with that condition it is possible to guarantee higher education as a public good and a human right for all. However, this transition cannot be converted into a type of ironclad law or inescapable facade behind which other inevitable aspects hide or disappear, when one aspires to true equity in admission to university education. For example, Landinelli et al. (2008:4) refer to these aspects:
...those who assume the cost of greater access, under what rules and procedures are the students selected and admitted, what differential effects does massification produce on the higher education institutions, what strategies do they employ to balance a greater offer with requirements for quality in the courses imparted, consequences of expansion beyond the value of change (rate of private return) and the value of the status (or prestige) of the diplomas issued by higher education institutions, the relation between greater coverage and graduation rates (internal efficiency), change in the structure of the professions and their hierarchy within society, etc.

2. The achievement of endogenous, sustainable development with a human face should become an "innate vocation" for the Latin American university and the rest of the universities located in countries in the South of the planet. Furthermore, it has to be included as a transversal axis in their respective institutional policies. Until now, in most of the peripheral universities, we can barely note efforts by people or isolated dependencies that exhibit a timid "temptation" to contribute to overcoming underdevelopment. Of course, that direct institutional disposition is not neutral, but rather entails consequences that transform university activity and demand the introduction of new referents in the academic dynamic, which have been ignored, avoided or underestimated by the existing model oriented - only tentatively - toward development. These dynamics include:

- the recovery, recognition and accreditation of everyday ways of knowing produced by extra-university actors;
- the direct and immediate satisfaction of problems close to the life of the communities;
- the incorporation of academic practices and processes that permit new ways of generating knowledge and teaching;
- the substitution of collective decision-making structures for others that are participative and integrating;
- the destabilization of power spaces occupied as the result of a political logic;
• replacement of the old framework based on positivist science (by disciplines);
• recognition of the community as a space for research/education;
• the inclusion of assessment strategies centered on student actions outside university walls;
• the incorporation of community actors as co-constructors of useful knowledge that can be taken advantage of; in a few words, recovery of those ways of knowing that have been occluded by the epistemic accidents of history.

For approximately more than a decade, some countries in Latin America and Africa have adopted the model of developmental universities; however, this model - as we noted when referring to it earlier in this chapter - should not be taken in without hesitation because, in practice, it can become twisted and lead the universities toward a utilitarian status that would exclude from their ambit the innovative knowledge production activities that are crucial for shortening the distance between underdevelopment and development.

Definitely, the disposition of peripheral universities toward development cannot underestimate the universal character of scientific knowledge nor become "domestic" institutions of tertiary education, whose training is linked exclusively to the nationalist folklore of underdeveloped countries. The proximity of higher education to international scientific criteria is the characteristic that will allow our countries to keep their standards of university quality and conditions of life in general in step with those of the developed North. The challenge of university reconceptualization centers on dissolving the disabling oppositions of center/margin, metropolis/periphery, North/South, in order to inaugurate a face-to-face meeting of old antagonists.

3. Scientific research and knowledge production that generate social and technological innovation should become the central missions of a significant number of universities in developing countries. This idea has been present in the directives of UNESCO for more than 10 years: "The pursuit of new knowledge and its application lie at the heart of the mandate of such higher education
institutions” (United Nations Educational, Scientific and Cultural Organization, 1997).

However, this knowledge production should not satisfy, exclusively, the problems defined by the international scientific agenda, which gives priority to problems belonging to the developed North; it should also satisfy the problems and priorities fixed by the strategic national and continental plans and projects that belong to the underdeveloped South. If the universities are not the institutions that assume the challenge of generating innovative systems in the South, who will generate them?

At this point, we confront another paradox, because the standards and criteria through which science operates respond to the international scientific agenda. The indicators currently used in the university scientific production area reflect statutes and logic belonging to universities conceived as advanced knowledge production centers and they are incompatible with the new university models linked to contextual problems, the recognition of colloquial cultures, and the incorporation of extra-university actors in the task of learning and re-creating knowledge.

The challenge for our countries is to find a way to guarantee the international rigor and validity of knowledge produced in the South, but, at the same time, preserve the wealth of cultural diversity and "popular wisdom." To accomplish this, the referent does not necessarily have to be western science, but rather the measure by which the knowledge scientifically produced in this way contributes to development.

4. Building capacities for knowledge production is a key element that Latin American universities should incorporate in their curricula. Universities on the periphery absorb knowledge and are consumers of knowledge, but are not producers or suppliers of knowledge. Stated in other words, the universities absorb knowledge, but do not absorb the capacity to produce it: we lack the "absorptive capacity." The reason for this handicap stems from the fact that higher education in these countries follows, to a large extent, a professionalizing mission manifested in a discipline-centered training model, focused on content and, therefore, is prone to strategies that favor repetition and academic activity foreign to reality. This condition hinders building the capacity to produce
knowledge and develop complex professional competences, to overcome development problems by producing alternative solutions, inspired by innovations and new knowledge.

This professionalizing model was assumed by Latin American universities according to propositions made by the Economic Commission for Latin America (ECLAC) when confronting the post-war world scenario. In its discourse, the Commission bestowed upon universities the responsibility to enable the population to immerse itself in a productive process that would lead the way toward developed, modern societies, through the technical and practical training of higher education (Parra-Sandoval, 1996).

However, professional training as such - solely oriented toward fulfilling industrial development needs - paradoxically produced anachronistic higher education institutions, along with the narrowing of their academic and critical functions. Proof of this condition is the fact that the quality and relevance of higher education was measured through correlations between student admission and graduation rates, rather than through critical and change-generating outputs, which could only result from producing knowledge and implementing innovative, problem-solving actions.

This scenario worsens if one considers that the curricular contents serving as engines of professionalization are almost always imported from large research centers in developed countries and packed into books and handbooks from renowned university editorials; seldom does a curriculum include content derived from local research. The ready-made contents are transmitted dogmatically, without prior specification or analysis of the research process that generated them. In this way, the professionalizing function not only imposes itself, but weakens the research function, as well as the development of solutions that would allow us to overcome our reality. The training process is fulfilled exclusively within the classroom and poses serious difficulties for providing "absorptive capacity" to produce knowledge.

The latter entails serious implications: higher education institutions turn into self-perpetuating instruments of underdevelopment that transmit foreign knowledge and alien technologies; the "graduate" profile responds not to national, but to foreign contexts; the performance of skills that would resolve na-
tional problems is not encouraged; the little research that is conducted does not lead to absorbing contents that would allow for their flexible incorporation into the curriculum; there are no possibilities for recovering other types of popular or non-certified knowledge produced in extra-academic communities a knowledge that is increasingly recognized as valid for explaining and improving reality.

Overcoming these difficulties demands a radical change in the higher education training model in order to substitute its professionalizing function with a creative and innovative one. A transformation is essential so that these institutions substantially encourage capacity building oriented toward producing the knowledge that national development requires.

If appropriate institutions of higher education and research that train a critical mass of qualified persons are lacking, no country can guarantee authentic endogenous, sustainable development; and developing or poor countries will not be able to shorten the distance that separates them from the industrialized, developed countries, remaining in the opprobrious condition of dependency that afflicts them (United Nations Educational, Scientific and Cultural Organization, 1998b).

Pluri-Conceptual Framework for Latin American Universities

It does not seem easy to combine the aspirations with the challenges and incorporate the conditions and nuances that a re-conceptualization of the university requires in the context of developing countries. This book does not pretend to clarify all the unknowns or offer a comprehensive panacea for the multiple tensions that permeate twenty-first century higher education in the context of Latin America or the southern hemisphere. However, it does seem important to us to present one of our working hypotheses, in order to reconcile the commitments of the universities to dying modernity - never completely achieved on the periphery - and the emergent postmodern or knowledge society.

To reconcile these commitments, Arocena et al. (2008:89) opt for the model of developmental universities, but warn that it is necessary to reach "an appropriate and by no means easy equilibrium
within the universities between long-term commitments to knowledge production and immediate involvement with society."

We think that the aforementioned equilibrium can come, not from dynamics internal to only one university model, the developmental university, for example, but rather from the diversification and complexity of the higher education systems in each country, which ought to include a heterogeneous taxonomy of universities (and other higher education institutions), each one with distinct purposes, functions and visions. That is, we adhere to the focus that Hermanns, Teichler and Wasser (1983) described as the "diversified model" of higher education systems, in contrast to the "integrated model." According to the former, which became more popular, differences in quality, status and content should be substantial; whereas, according to the latter, those differences ought to be kept within bounds.

Our hypothesis, based on recognition of the Unidiversity notion (Göranson, 2008), postulates that, in the context of developing countries, there cannot be a single definition of university, but rather the coexistence of universities or other higher education institutions, which respond to diverse ethos and purposes and are substantially different in quality, status and content. In this way, some universities will reflect the top research center model; others, the training or professionalizing type; and there will be universities that focus their performance on doing the most for social good and have other, underlying dimensions different from teaching and research, such as community engagement, the third mission, social service, micro-economic impact and social mobility.

The idea of unidiversity does not correspond to a simple diversity of universities and higher education institutions, since this would suppose that all the institutions are imperfect versions of one model, which they would have to resemble; the unidiversity, on the contrary, accepts that differences are natural, inevitable and even needed, and it will be necessary to work so that all of them can co-exist and perfect themselves according to their own characteristics (Schwartzman, 1994).

Higher education systems in Latin America included, and currently include, a variety of forms and types of universities, in addition to other institutions; but all the universities, at least, share certain
common characteristics and weaknesses, many of which are structurally intra-systemic: the disability of their knowledge production systems, the chronic distancing from contextual problems, (even though there are isolated "good practices" in community insertion), and communion with conventional scientific statutes and traditional modes of teaching or research, with the accent on teaching and professionalization.

Currently, we are witnessing an unusual and accelerated process of creating universities and other higher education institutions in Latin America. And,

...as a corollary to that variety of fragilely structured situations, the idea of university previous and commonly accepted in coincidental terms and endowed with a manifest valorative connotation, has become in current usage an imprecise conceptual referent with inconstant and frequently confused meanings (Landinelli et al., 2008: 2).

Never before has the need to clarify the margins been so urgent. The criteria used, up to the present, to describe the diversification of higher education, limited only to the processes of public-private differentiation and differentiation between university and non-university institutions, are no longer sufficient. Our hypothesis is that higher education institutions can present different physiognomies, as well as create themselves, and make them function according to distinct concepts and parameters, work with diverse codes and logics. These possibilities (university) are reflected in the Theoretical Model proposed in this book.

Graph 9 below contains the Framework we propose for mapping the complex variety of higher education institutions that exist or are being created for developing countries. It confronts the tendency to standardize the university model that "should" be. Each university in the Framework will reflect a different "is" and a different "ought to be."
The Framework represents the four axes that organize the Theoretical Model: knowledge production, concept of the university, university-surroundings relationship for knowledge production and university actors. Each of these axes is divided into a set of descriptors inspired by the essential aspects and key features corresponding to them in the Theoretical Model, explained in Chapter II. The descriptors are criteria, based on which the characteristic traits of each institution can be distinguished. In this framework, these traits are called attributes, which vary according to the form of the university or higher education institution under consideration.

* See the different attributes in Tables 37
Source: Authors.
Table 37 presents the descriptors and the attributes or traits that distinguish the diverse institutions.

The First Axis, concerning knowledge production, includes four descriptors: university policy for knowledge production, the incorporation of extra-scientific knowledge in university practices, the social relevance of university knowledge and the organization of knowledge.

According to the first descriptor, university policy for knowledge production, each institution has options to practice a free policy (individual scientific research); a policy oriented by institutional priorities; by national development projects and plans; by the international scientific agenda; with assignment of financial resources according to the priority of publishing papers in high impact scientific journals; or with assignment of financial resources to scientific research and/or integral projects that offer solutions to problems in the surroundings.

The second descriptor is called the incorporation of extra-scientific knowledge in university practices. According to this descriptor, each institution can function according to different logics: the professors and students recognize and exchange knowledge with the communities; the professors and students recognize and accredit knowledge systematized scientifically according to international standards; research projects respond to conventional scientific criteria; the projects integrate research, training and community actions that promote development; university research projects are executed by scientists or academics; university research and/or integral projects include extra-university actors (from the communities); research projects are carried out intramurally (laboratories, institutes, academic research centers); research projects are carried out extramurally (in farms, towns, schools, indigenous tribes, workshops, etc.).

According to the third descriptor, titled "Social Relevance of University Knowledge," each institution can adopt the following orientations: research projects have an intra-scientific relevance; research projects affect the solution of contextual problems; innovation is associated with private appropriation of knowledge or innovation is associated with the social appropriation of knowledge.
### Table 37

**Descriptors/Attributes of the Alternative Framework for Mapping the Complex Variety of Higher Education Institutions that Exist or are Being Created for Developing Countries**

<table>
<thead>
<tr>
<th>1st Axis. Knowledge Production</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. University Policy for Knowledge Production</strong></td>
</tr>
<tr>
<td>• Free (individual scientific research).</td>
</tr>
<tr>
<td>• Oriented by institutional priorities.</td>
</tr>
<tr>
<td>• Oriented by national development plans and projects.</td>
</tr>
<tr>
<td>• Oriented by the international scientific agenda.</td>
</tr>
<tr>
<td>• Priority assignment of financial resources to the publication of papers in high impact scientific journals.</td>
</tr>
<tr>
<td>• Priority assignment of financial resources to scientific research and/or integral projects that give solutions to problems in the surroundings.</td>
</tr>
<tr>
<td><strong>2. Incorporation of Extra-Scientific Knowledge in University Practices</strong></td>
</tr>
<tr>
<td>• Professors and students recognize and interchange knowledge with the communities.</td>
</tr>
<tr>
<td>• Professors recognize and accredit knowledge systematized scientifically according to international standards.</td>
</tr>
<tr>
<td>• Research projects respond to conventional scientific criteria.</td>
</tr>
<tr>
<td>• Projects integrate research, training and community actions that promote development.</td>
</tr>
<tr>
<td><strong>3. Social Relevance of University Knowledge</strong></td>
</tr>
<tr>
<td>• Research projects have intra-scientific relevance.</td>
</tr>
<tr>
<td><strong>4. Organization of Knowledge</strong></td>
</tr>
<tr>
<td>• Disciplinary.</td>
</tr>
<tr>
<td>• Multidisciplinary.</td>
</tr>
<tr>
<td>• Interdisciplinary.</td>
</tr>
<tr>
<td>• Transdisciplinary.</td>
</tr>
</tbody>
</table>

* Bold titles beginning with a number indicate attributes; subtitles with a bullet indicate descriptors.
### 1. Orientation of the University
- Professionalizing.
- Research Oriented.
- Developmental University.
- Entrepreneurial University.
- Socialist University.

### 2. University Government
- By election.
- Selective (designation by merits).
- Authorities designated without taking into account academic merits.

### 3. Academic-Administrative Organization
- By Schools.
- By Matrixes.

### 4. Training Model
- Curricula organized by objectives.
- Curricula organized by competences and capacity building.
- Curricula organized by integral problems/projects.
- Presential System.
- Virtual system.
- Mixed system.

### Table 37 (Continued) *

<table>
<thead>
<tr>
<th>2nd Axis. Concept of the University</th>
<th>3rd Axis. University-Surroundings Relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strategies for the University-Surroundings Relationship</strong></td>
<td></td>
</tr>
<tr>
<td>• Extension, community service, scientific research projects with social impact.</td>
<td></td>
</tr>
<tr>
<td>• Integral projects of research/training/community action.</td>
<td></td>
</tr>
<tr>
<td>• Agreements with private firms, spin offs, business incubators, student internships.</td>
<td></td>
</tr>
<tr>
<td>• Academic, intergovernmental agreements, agreements with NGOs and others social organizations.</td>
<td></td>
</tr>
<tr>
<td>• University located in campus (headquarters).</td>
<td></td>
</tr>
<tr>
<td>• Decentralized or municipalized university.</td>
<td></td>
</tr>
</tbody>
</table>

* Bold titles beginning with a number indicate attributes; subtitles with a bullet indicate descriptors.
Table 37 (Continued)*

<table>
<thead>
<tr>
<th>4th Axis. University Actors</th>
</tr>
</thead>
</table>

1. **Professors**
   - Hiring by merit (contest of credentials) and promotion by merit (publications and education).
   - Hiring and promotion by designation.
   - Free training (by individual interests).
   - Training oriented by institutional priorities.
   - Training oriented by national priorities.

2. **Students**
   - Unrestricted admissions system.
   - Admissions system by requirements or selective tests.
   - Participation in elections and deliberating bodies.
   - Programs to stimulate and support students until graduation.
   - Programs for positive discrimination and protection of diversity.

3. **Graduates**
   - Proportion of women graduated.
   - Participation in elections and deliberating bodies.

4. **Community**
   - Participation in elections and deliberating bodies.
   - Participation in pedagogical activities.

* Bold titles beginning with a number indicate attributes; subtitles with a bullet indicate descriptors.
The fourth descriptor, Organization of Knowledge, permits identifying institutions that have a disciplinary, multi-disciplinary, interdisciplinary or transdisciplinary structure.

The second Axis, which concerns the concept of the university, includes four descriptors: Orientation of the University, University Government, Academic-Administrative Organization and Training Model.

According to the first descriptor, Orientation of the University, higher education institutions can be predominantly professionalizing, research-oriented, developmental, entrepreneurial or socialist universities.

The second descriptor, which alludes to University Government, permits identifying the institutions according to how their government is selected: by election or by designation.

The third descriptor for this axis, Academic-Administrative Organization, distinguishes between institutions that are ordered by schools or matrix.

And the fourth descriptor, relative to the Training Model, includes institutions with curricula organized by objectives, by competences and capacity building, by problems or integral projects, with presental, virtual or mixed systems.

The third Axis in the Framework, which points to the University-Surroundings Relationship for Knowledge Production, contains only one descriptor: strategies in the relationship between the university and its surroundings. According to this descriptor, institutions can differentiate themselves through these strategies which are: extension projects, community service projects, scientific research projects with social impact or integral projects of research/training/community action; agreements with private firms, spin off companies, business incubators, student internships or academic agreements, inter-governmental agreements or agreements with NGO’s and other social organizations. Another differentiation refers to whether the university is located in central headquarters or is a decentralized or municipalized university.

Finally, the fourth Axis, dedicated to University Actors, is separated into four descriptors: professors, students, graduates and community.
According to the descriptor "professors," institutions differ by virtue of whether professors are hired through an evaluation of credentials and promoted by merits (publications and training) or are hired and promoted by designation. The descriptor also varies as to whether on-going training of the professorial staff has a free mode (obeying individual interests) or is guided by institutional or national priorities.

For the descriptor dedicated to students, the institutions can have unrestricted admissions or admission by requirements or selection tests. They can admit the participation of students in elections and deliberating bodies or they can exclude them. They can have programs to stimulate and support students in their studies and/or programs for positive discrimination and the protection of diversity, or they can opt for not having one or the other.

According to the descriptor "graduates," institutions can vary in terms of the proportion of women graduated or the participation of graduates in elections and deliberating bodies.

The fourth descriptor of the fourth axis, which studies the community as a university actor, differentiates institutions by the existent or absent possibility of community participation in elections, deliberating bodies and pedagogical activities.

The combination of one or more attributes from each axis makes it possible to define the many different types of institutions that exist in a given context. A university or other higher education institution could be described and explained in terms of which attributes it has. A task that is still pending is to represent all the possible combinations that could characterize the dissimilar types of higher education institutions. Another task is deciding which attributes cannot be waived if an institution is to be considered a university or locate itself in the group of other types of higher education institutions.

The innovative character of this Framework results from four aspects that should be highlighted: first, acknowledgment and discrimination of universities and non-university institutions; second, descriptors and attributes reflecting innovative practices to mirror universities of underdeveloped countries; third, the knowledge that none of the universities is considered better or more desirable than others; and, finally, the admission that quality assess-
ment will be singular, according to the type of university or higher education institution.

The first aspect refers to the fact that the Framework represents both universities and non-university institutions of higher education, which differ from the first in denomination, scope and recognition. Applying the framework will permit identifying the attributes that distinguish the various institutional types: university colleges, research-oriented universities, professionalizing universities, socialist universities, technological institutes, large-scale, excellence-driven environments, to mention some.

This breadth makes it possible to overcome the semantic discussion that currently - in countries like Venezuela - intends to homogenize, under the denomination "universities," a broad and diverse range of tertiary education projects that, according to our criteria, cannot be called genuine higher education, as we have explained in this chapter. Utilization of the proposed framework will permit conceptualizing each institution, not by its discretional denomination, but rather by the combination of attributes that give it its own special character and position in the complex system.

Of course, within the framework, which is still in construction, it is possible that an institution participates in attributes that make it part of more than one kind of university. The compatibilities and conflicts between the possibilities are, among many other aspects, on our agenda for immediate work.

The second aspect refers to the use of descriptors and attributes in each of the axes that reflect innovative practices present in the universities of undeveloped countries, but that do not fit in similar frameworks used by international organisms for mapping university education, because the latter are conceived and produced in the North, with categories and logics belonging to developed countries - to be applied to the rest of the world.

For example, in Latin America and Africa, new performers are participating in knowledge production activities: communities, ethnic groups, indigenous people (not only consultancies or NGOs, but ordinary people). This "third sector" of knowledge production, as it was called during the Global Research Seminar held in UNESCO, Paris, November 2008, produces alternative knowledge, less systematized than conventional scientific knowledge, but
based upon "people-centered developmental needs research" or PCDNR (Dovie, 2008).

The Framework we are presenting includes them as "competent actors for knowledge production." The subjects that intervene, in diverse measures and moments, in the knowledge production process, include professors, students, community members, graduates and community leaders. Meanwhile, international frameworks, such as the template prepared as an output of the UNESCO special initiative to map national research systems in low and middle income countries (Mouton and Waast, 2008), reduces Research & Development performers to the conventional actors, i.e. public and private universities, college research centers, government-funded or internationally funded research institutes.

Inclusion of the third knowledge production sector leads us to evaluate the presence or absence of an innovative characteristic in a university model. This is the accreditation of other types of knowledge (different from strictly scientific knowledge) that constitute part of more complex social practices: ancestral, aboriginal or daily wisdom, rejected by most universities as "impure" practices performed by extra-academic, non-structural actors.

These alternative ways of knowing, linked to local problems, are performed in spaces or platforms different from those called by international frameworks "informal Science & Technology structures; academics" (Mouton and Waast, 2008). We call this category "spaces for knowledge production." These can be conventional spaces or others, such as crop fields, villages, indigenous settlements, cooperatives, farms and Small and Medium enterprises-SAMES.

The third aspect is the understanding that the inclusion of these innovative elements in the framework, as possible configuring components for a higher education institution, does not imply that they are better or more desirable than other more conventional elements or that their presence or absence defines whether an institution is better or worse than another. What this is about is recognizing their presence in the dynamics and institutions so that they are taken into account as signals of the emergence of new university forms or as indicators for evaluating the behavior of such institutions, in the efforts made by developing countries to overcome their condition.
As a fourth aspect, the proposed framework admits that quality assessment will be singular in relation to the type of university or higher education institution with which it is dealing. The current status of university quality assessment systems deepens the asymmetry between higher education in the North and the South of the planet. One of the reasons that explain this asymmetry stems from the fact that international assessment systems tend to perpetuate only one concept of quality, at a moment when higher education institutions and their missions are tending to diversify, especially in the developing world.

The proposed framework will offer the possibility of constructing as many singular concepts of quality as types of education that will result from combining dimensions and aspects of the model. Consequently, it will also permit working on a system of indicators that combat the constant, according to which only the North has quality universities, and those of the South are unsatisfactory copies of the universities in the industrialized countries or the developed North.

In effect, when the aforementioned indicators that, up to now, have been systematized internationally to assess the quality of universities, have been applied to countries in Latin America and Africa, those universities turn out to be excluded or positioned in places farthest away from the top. As Hakelkorn (2009) has noted, international indicators used by the global systems that evaluate only one concept of quality, based on premises of status and reputation, i.e. the Shanghai Jiao Tong Academic Ranking of World Universities, Webometrics and Times Higher Education QS World University Ranking (THE-QS), and USNWR’s World’s Best Colleges and Universities (which uses Times QS data), make it impossible for developing country universities to compete with the big players in the United States or Europe.

Indicators such as publications in high-impact scientific journals, international prizes (Nobel and Field Medals) bestowed on members of the academic personnel at each institution, patents, the number of citations of works whose authors belong to the university's academic staff, are incompatible with a university dedicated to resolving specific local problems in developing countries. On the other hand, other indicators that reflect the dialog of ways of know-
ing, cultural multidiversity, attention to human-centered needs, the satisfaction of contextual problems, the cultivation of civic competences, ecological commitment, the socio-economic impact of academic practices, and which seem more suited to assuring the university quality that the South needs, are not evaluated or even recognized by international systems that assess university quality.

One of the conclusions, presented in the Final Report of the Global Research Seminar: Sharing Research Agendas on Knowledge Systems (Jacob, 2008), verified the undesired permanence of a "tyranny of indicators," conceived as "the insufficiency of the existing indicator set to describe the diversity of research outputs that are necessary for robust research systems." Such a tyranny, with its accompanying insufficiency, also exists when one tries to evaluate quality using the same logic in relation to a very diverse range of universities, their contexts, roles and performances.

The challenge for Latin America and the rest of the countries in that condition is double. On the one hand, to find the way to assess and guarantee a quality that is not equivalent for all types of higher education institutions; and, on the other hand, to construct a system of indicators that respects the diversity of roles and missions existing among the higher education institutions, but that, at the same time, maintains the rigorousness and validity that belong to international indicators.

The framework we are proposing is a heuristic tool that facilitates surmounting both challenges: the first one is the possibility to include the heterogeneous taxonomy of higher education institutions that exist at present or are being created in Latin American contexts; and, the second, the design of corresponding quality concepts and indicators to go with each type of higher education that results as an output, after combining the attributes and aspects of its academic practice.

CONCLUSION OR A NEW BEGINING?

There is no "one and only" format for reconceptualizing the university in developing countries. In the face of the co-existence of challenges and claims that place those universities in need of satisfying goals that obey counterpoised forces and interests (i.e. globalization/contextualization, technological innovation /local
problems, equity/quality, science/dialog among ways of knowing), it is urgent to postulate unidiversity and recognize, consequently, the need for interaction regarding the reality of very heterogeneous types of higher education institutions, each one of which will be committed to forces and interests of irreducible orientations.

It is not possible to prefigure the types of higher education institutions in a "taxonomy," similar to those expounded up to now by experts, institutions and governments, because the "improvised celerity" with which juxtaposed events and needs happen and cross paths in developing countries and in the developed world, generate a multiform, changing proliferation of institutional types, which translate into the uncontrollable obsolescence of the criteria that shape those taxonomies.

For this reason, the framework proposed in this book includes axes, descriptors and attributes that permit mutable combinations, so the institutional types that originate in the contextual reality will find their representation in it without mattering how much and when they mutate. Landinelli et al. (2008) expressed that, in Latin America and the Caribbean, it does not seem reasonable to think about rigid frameworks or homogeneous models for organizing higher education systems, because those systems are invariably subject to the specificity of social conditioners, traditions, political preferences and cultural realities from the context to which they are related.

It is not necessary that all higher education institutions be spaces for knowledge production; that role is reserved for universities oriented toward research; and, among those, the world class universities stand out, where the knowledge produced ought to be on a par with their counterparts in the developed world. However, the professionalizing universities or training institutes can maintain themselves as absorptive capacity institutions, which will lead the country, in an initial stage, to becoming a carrier of technological transfer (Castells, 1994), with a tendency to exceed that condition and become, during a second stage, a producer of science and technology, with the help of those centers of excellence that, to a lesser degree, will be present in their educational systems. Other institutions can be strictly conceived as dedicated to satisfying community needs in favor of the poor, as is the University of Devel-
opment Studies in Ghana, Africa, which works to integrate concepts such as sustainability, commitment, development and strategies to reduce poverty in a transversal manner in all university areas (Global University Network for Innovations, 2010).

A specification that throws light on the still-diffuse vision of unidiversity as proposed herein was introduced by UNESCO in 1997, when it distinguished the activities of research, intellectual work and extension into the community. Of these three activities, only scientific research has the character of an original investigation oriented toward clarifying and/or solving problems and approached with a careful and disciplined methodology. Meanwhile, intellectual labor or scholarship is reduced to processes of updating teaching personnel to construct or improve their academic record, and extension is understood as a service through which academic resources are destined to take care of the communities located in the surroundings of the institution (United Nations Educational, Scientific and Cultural Organization, 1997).

Therefore, within the university framework, all higher education institutions will have to dedicate themselves to intellectual and community extension work, but only some universities or institutes of advanced studies will have original scientific research as part of their mission. What is important is to recognize that each institutional form has its roles, its functions and its scope clear and fulfills them optimally.

The key idea is the co-existence, in developing countries, of heterogeneous institutions: universities consolidated as centers of excellence, institutes of higher or advanced studies and think tanks dedicated to cutting edge research, even though the research performed in such institutions does not always respond immediately to the needs of the enclaves in which they are located, but that will be at the same level of the scientific and technological achievements required to fracture those countries’ dependence in the short or medium term. Next to those, universities oriented toward researching contextualized problems must operate, whose mission is to provide alternatives for resolving lacks and handicaps in the underdeveloped surroundings. And parallel to this, there should be professionalizing universities, guided by the need for placing a greater contingent of the young adult population in the pathway to tertiary education.
Additionally, segmentation between universities, technological institutes, university institutes and training centers should be maintained so that the entire platform of post-secondary education will be broad enough to take in people with different inclinations, aptitudes and life projects; it is unreal to imagine a country in which all the youth enter a university aspiring to become scientific researchers; and furthermore, such an aspiration would be detrimental for development. On the other hand, it is imperative that each line of activity be endowed with the people most qualified to perform it, and that tertiary and higher education institutions, suitable to merit that qualification, be spread throughout the national territory.

Therefore, in response to the question about the new concept of university that should orient higher education in Latin America to satisfy the aspiration of overcoming underdevelopment, we say that there are diverse concepts, many of which are to be built; however, we can also highlight some signs that have to be observed if we do not wish to lose ourselves in this task.

Among these signs, the first points to the undeniable task of relocating Latin American countries on the world scientific production map, where we occupy the most disadvantaged places. The second, alludes to the impossibility of postulating only one type of university as a model, toward which we should orient all higher education institutions. The third sign is the need to connect higher education with local actors and problems without divorcing it from the scientific mainstream. The fourth is enunciated as a warning: the university has to continue being a crossroads for all modes of thinking, especially critical thinking. It is crucial to avoid the reductionism that implies pigeon-holing universities in only type of thought, no matter what kind it might be, thereby cancelling the exercise of questioning or imagining an alternative. If the university has an indoctrinating task, the university doctrine should be diversity, respect for the other, for whoever thinks and feels differently, for whoever does not belong to one’s own group, sect, tribe, party, religion or movement, or who does not share the same vision of the world and of life.

The university should harbor complexity, be itself a version of this complexity, with its conflicts, tensions and misunderstandings, and it ought to become the space that trains new generations
in co-existence with those who are radically different, because in the present and future global village, human survival will depend on that training.

And last but not least, the university has to take on knowledge production as a must. However, that knowledge does not have to flow exclusively through the channels recognized by positivist science and the international agenda. Universities in underdeveloped countries ought to orient their efforts toward generating, transmitting and transferring knowledge that reflects and permits human, social, scientific and technological growth from a "glocal" perspective (Robertson, 2003). On the one hand, this perspective allows those countries to exercise the active and protagonist participation, to which they have a right in the global dynamics that define worldwide equilibrium or disequilibrium and, on the other hand, to intervene locally, in order to reach satisfactory and sovereign levels of life and civility.
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Universities under the Study WEBSITES

Universidad Central de Venezuela-UCV. www.ucv.ve
Universidad del Zulia-LUZ. www.luz.edu.ve
Universidad Simón Bolívar-USB. www.usb.ve/
Universidad Bolivariana de Venezuela www.ubv.edu.ve/
ANNEXES
### Annex A
#### Quantitative Indicators

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<tr>
<th>Nº</th>
<th>INDICATORS</th>
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<tr>
<td>1</td>
<td>Professors Accredited to PPI (2007)</td>
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<td>2</td>
<td>Scientific Arbitrated Journals (2007)</td>
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<tr>
<td>3</td>
<td>Research Projects (2006/2007)</td>
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<td>4</td>
<td>Extension Projects (2007)</td>
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<td>Research Projects Financed by LOCTI (2006)</td>
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<tr>
<td>8</td>
<td>LOCTI Contribution to the Universities (2007)</td>
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<td>9</td>
<td>Registered Patents (2007)</td>
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<td>10</td>
<td>Total and Research University Budget (2007)</td>
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<td>11</td>
<td>Agreements between University and External Sector 2007</td>
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<td>12</td>
<td>University Firms (2007)</td>
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<td>13</td>
<td>University Registration last 5 Years</td>
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<td>14</td>
<td>University International Students (2007)</td>
</tr>
<tr>
<td>15</td>
<td>Graduates by Gender last 5 Years</td>
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Source: Authors.
## Annex B
### Focus Groups

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<tr>
<th>Focus Groups</th>
<th>Institution</th>
<th>Area of study</th>
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<tbody>
<tr>
<td>1</td>
<td>LUZ</td>
<td>HUMANISTIC AREA</td>
</tr>
<tr>
<td>2</td>
<td>LUZ</td>
<td>TECHNICAL AREA</td>
</tr>
<tr>
<td>3</td>
<td>LUZ</td>
<td>HEALTH AREA</td>
</tr>
<tr>
<td>4</td>
<td>UCV</td>
<td>HUMANISTIC AREA</td>
</tr>
<tr>
<td>5</td>
<td>UCV</td>
<td>TECHNICAL AREA</td>
</tr>
<tr>
<td>6</td>
<td>USB</td>
<td>TECHNICAL AREA</td>
</tr>
<tr>
<td>7</td>
<td>UBV</td>
<td>HUMANISTIC AREA (UNIVERSITY VILLAGES)</td>
</tr>
<tr>
<td>8</td>
<td>UBV</td>
<td>HUMANISTIC AREA (UNIVERSITY VILLAGES)</td>
</tr>
<tr>
<td>9</td>
<td>UBV</td>
<td>HUMANISTIC AREA (CENTRAL HEADQUARTERS)</td>
</tr>
</tbody>
</table>

Source: Authors.
Annex C
Focus Group Guide of Discussion

Before starting the focus group interaction, record the identification data of the participants, quantity, date and place.

**First situation for discussion:**

Student 1:

“Universities are not appropriate spaces for producing knowledge if we want to advance toward sustainable human development.”

“Knowledge is outside of the universities.”

Student 2:

“That’s not true. The universities contribute appropriately to Venezuelan society because they train quality professionals.”

Who do you think is right?

Please discuss.

If knowledge production is not in the university, where is it?

**Second situation for discussion:**

The university is constantly criticized for its scant connection with the surrounding context. It is also said that universities only train professionals, but are not very democratic or promoters of social equity.

Facing this negative balance: what would you answer?

What is your opinion about the relationship with the context in your department, your program?

How should this relationship be?
**Third situation for discussion:**

*The quality of higher education is questioned.*

Do you believe that Venezuelan higher education has quality?

Does quality have anything to do with development?

Discuss.

**Fourth situation for discussion:**

*Tendencies regarding the evaluation of universities:*

*Tendency 1:* supposes that it should be based on pertinence and the quality (attributes) of the professional trained.

*Tendency 2:* considers that it ought to be based on the training of a critical subject, whose formation is integral, with humanistic and ethical training, whose responsibility to the public is central.

What do you think?

Are these two visions conflicting?

Is the university responsible for training a different, quality citizen?

What does your family think about being you in the UBV?

**Fifth situation for discussion:**

Are decisions at the university where you study made in a centralized or democratic way?

What are the principal problems you see at your university? In your department and in your program?

Do you think these problems are common at other universities in the country?

What changes in the university would you propose to increase quality?
## Annex D

### Interviewees

<table>
<thead>
<tr>
<th>Cod.</th>
<th>Institution</th>
<th>Field / Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>LUZ</td>
<td>DIRECTOR'S OFFICE FOR EXTENSION</td>
</tr>
<tr>
<td>2</td>
<td>LUZ</td>
<td>ACADEMIC VICE-RECTOR</td>
</tr>
<tr>
<td>3</td>
<td>LUZ</td>
<td>RESEARCHER</td>
</tr>
<tr>
<td>4</td>
<td>UBV</td>
<td>COORDINATOR OF ADVANCED STUDIES</td>
</tr>
<tr>
<td>5</td>
<td>UBV</td>
<td>PROFESSOR</td>
</tr>
<tr>
<td>6</td>
<td>UBV</td>
<td>PROFESSOR</td>
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<tr>
<td>7</td>
<td>UBV</td>
<td>PROFESSOR</td>
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<tr>
<td>8</td>
<td>UBV</td>
<td>PROFESSOR</td>
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<td>9</td>
<td>UBV</td>
<td>COORDINATOR OF UNIVERSITY VILLAGES</td>
</tr>
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<td>10</td>
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<td>ACADEMIC COORDINATOR</td>
</tr>
<tr>
<td>11</td>
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<td>CURRICULUM ADVISOR</td>
</tr>
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<td>12</td>
<td>UBV</td>
<td>CURRICULUM ADVISOR</td>
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<td>13</td>
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<td>FOUNDER</td>
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<td>14</td>
<td>UCV</td>
<td>RESEARCHER</td>
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<tr>
<td>15</td>
<td>UCV</td>
<td>UNIVERSITY AUTHORITY (SECRETARY)</td>
</tr>
<tr>
<td>16</td>
<td>USB</td>
<td>DEAN OF RESEARCH</td>
</tr>
<tr>
<td>17</td>
<td>USB</td>
<td>DEAN OF EXTENSION</td>
</tr>
<tr>
<td>18</td>
<td>USB</td>
<td>RECTOR</td>
</tr>
<tr>
<td>19</td>
<td>MCTI</td>
<td>VICE-MINISTER OF PLANNING</td>
</tr>
<tr>
<td>20</td>
<td>ONCTI</td>
<td>GOVERNMENT OFFICIAL</td>
</tr>
<tr>
<td>21</td>
<td>IESALC</td>
<td>SENIOR RESEARCHER AND HEAD OF THE DEPARTMENT OF SCIENCE, INSTITUTO VENEZOLANO DE INVESTIGACIONES CIENTÍFICAS (IVIC) VENEZUELA</td>
</tr>
</tbody>
</table>

Source: Authors.
## Annex E
### Interview Guide for Informants

<table>
<thead>
<tr>
<th>Thematic Axes</th>
<th>Key Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Thematic Axis</strong></td>
<td>Are projects the coordinating axes for knowledge production?</td>
</tr>
<tr>
<td>How is the knowledge production process conceived at this university?</td>
<td>What is understood at this university by project or research program? Scientific and technological projects? Projects for solving concrete problems? (Whose?) Practical problems, scientific problems, both? Research projects integrated with teaching? In alliance with other institutions? University, scientific, community?</td>
</tr>
<tr>
<td>What practices are carried out at this university to realize this concept?</td>
<td>Is there another coordination mechanism for that activity different from the projects?</td>
</tr>
<tr>
<td>Around which strategies is the production of science and technology organized at this university?</td>
<td>What is the destination for the knowledge produced? Is it published? Where? Is it disseminated in another way? Or is it only applied? Where? That is: forms, mechanism or routes for divulging results.</td>
</tr>
<tr>
<td></td>
<td>Does the institution have an explicit policy for knowledge production? Where is it expressed?</td>
</tr>
<tr>
<td></td>
<td>How is knowledge production at this university linked to the postulates of the National Plan for Science and Technology of the Ministerio de Ciencia, Tecnología e Innovación-MCTI 2005-2030?</td>
</tr>
<tr>
<td></td>
<td>Are there research teams uni-disciplinary, multi-disciplinary, trans-disciplinary?; Are they formed intra- or inter-institutionally?</td>
</tr>
<tr>
<td></td>
<td>What is understood at this university by researcher? Are the teachers researchers? Are the students researchers in training?</td>
</tr>
</tbody>
</table>
### Annex E

**Interview Guide for Informants**

*(Continued)*

<table>
<thead>
<tr>
<th>Thematic Axes</th>
<th>Key Questions</th>
</tr>
</thead>
</table>
| **Second Thematic Axis**      | What is the essential function of the university?  
*Professionalizing university*  
*Researchal university*  
*Entrepreneurial university*  
*University that instructs in a specific political ideology*  
What are the academic-administrative structures responsible for knowledge production in the university organigram?  
Does the university perform the three classic academic functions: teaching, research and extension?  
Is there a directorate or coordination that manages research?  
Is there a budget specifically destined for research?  
Who distributes and administers it?  
What are the criteria for assigning those resources?  
Does the research activity have any weight or reflection in the assessment of activities belonging to the Training Program?  
Are there strategies to encourage or support the knowledge production activity?  
What innovative training programs does the university offer?  
Which are technological programs? |
## Annex E

### Interview Guide for Informants

*(Continued)*

<table>
<thead>
<tr>
<th>Thematic Axes</th>
<th>Key Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Third Thematic Axis</td>
<td>Are research activities at this university assessed in terms of their contribution to endogenous development?</td>
</tr>
<tr>
<td>How do teaching and research activities relate to</td>
<td>Who fulfills those activities: professors, students, both?</td>
</tr>
<tr>
<td>the surroundings?</td>
<td>Who selects the research problems? With the collaboration of the community, the business, the official sector?</td>
</tr>
<tr>
<td></td>
<td>What criteria are used for this selection? Are there priorities for this selection? Which?</td>
</tr>
<tr>
<td></td>
<td>Is the impact that a research project had on the community measured <em>ex post</em> in a contextualized environment?</td>
</tr>
<tr>
<td></td>
<td>What is understood at this university by extension activities?</td>
</tr>
<tr>
<td></td>
<td>Do the training programs offered by the university satisfy labor needs for the public or private sector?</td>
</tr>
<tr>
<td></td>
<td>Does the university have a study or diagnostic to detect those needs?</td>
</tr>
<tr>
<td></td>
<td>Does any study exist regarding the employment rate of graduates? Adamitudy of 2023: exactly a more thorough study of the impact of the contribution of the universities on the community.</td>
</tr>
<tr>
<td></td>
<td>What areas of production and development does the university deal with?</td>
</tr>
<tr>
<td></td>
<td>Does the university have projects financed through the LOCTI? Through other extra-university entities or organizations, public or private?</td>
</tr>
</tbody>
</table>
## Annex E

### Interview Guide for Informants

*(Continued)*

<table>
<thead>
<tr>
<th>Thematic Axes</th>
<th>Key Questions</th>
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</thead>
<tbody>
<tr>
<td><strong>Fourth Thematic Axis</strong></td>
<td>What is the participation of different actors (professors and students) in the knowledge production processes and in projects that relate to the surroundings?</td>
</tr>
<tr>
<td></td>
<td>What is understood at this university by community project? How is the community integrated in the projects furthered by university students and/or professors?</td>
</tr>
<tr>
<td></td>
<td>Has the university received any request for projects from external sectors: public or private businesses, NGOs, Communal Councils, citizen groups?</td>
</tr>
<tr>
<td></td>
<td>Have responses been given? Are any projects being developed or have any projects been developed around those requests?</td>
</tr>
<tr>
<td></td>
<td>Do community members participate in executing the research projects? How?</td>
</tr>
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<td></td>
<td>What methodology is used?</td>
</tr>
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<td></td>
<td>Are the projects in which the community participates (if there are any) of a social nature? How is that participation carried out in technological projects?</td>
</tr>
<tr>
<td></td>
<td>How many students participate in the design and execution of research projects? How is this participation carried out? Do the students go to the spaces inhabited by the community?</td>
</tr>
<tr>
<td></td>
<td>How many professors participate in the design and execution of research projects? How is this participation carried out? Do the professors go to the spaces inhabited by the community?</td>
</tr>
<tr>
<td></td>
<td>Does the figure of research project advisors exist at this university? Who fulfills this role? From what institution do they come? From what country?</td>
</tr>
</tbody>
</table>

Source: Authors.
Annex F
Extension Projects 2007 (Examples)

<table>
<thead>
<tr>
<th>EXTENSION PROJECTS</th>
<th>LUZ</th>
<th>UCV</th>
<th>USB</th>
<th>UBV</th>
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<tbody>
<tr>
<td>PROJECT</td>
<td>87</td>
<td>10</td>
<td>24</td>
<td>ALL*</td>
</tr>
<tr>
<td>&quot;Interculturality in Alitasia&quot;</td>
<td>AMAZON</td>
<td>BACTERIOLOGICAL QUALITY OF THE WATER IN COMMUNITIES ADJACENT TO THE USB</td>
<td></td>
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<tr>
<td>PROJECT</td>
<td>BOLIVAR/GRAN SABANA</td>
<td>COMMUNITY SERVICE AS AN INSTRUMENT TO SUPPORT CITIZEN PARTICIPATION IN THE COMMUNAL COUNCILS</td>
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<td>&quot;Integral Touristic Development Plan for the Admiral Padilla Municipality&quot;</td>
<td>UNIVERSITY IN PREVENTIVE ACTION PROGRAM (DRUGS)</td>
<td>THE NUTRITIONAL STATE AND FOOD SECURITY IN A SAMPLE OF HOMES IN THE COMMUNITY OF SANTA CRUZ DEL ESTE, BARUTA MUNICIPALITY</td>
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<tr>
<td>PROJECT</td>
<td>DELTA PROGRAM (HEALTH PROGRAM/ORAL HEALTH/LABORATORY ANALYSIS/SAMUEL ROBINSON PROGRAM)</td>
<td>OBSERVATORY OF PROBLEMS IN LA LIMONERA, BARUTA MUNICIPALITY</td>
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</table>

* ALL THEIR PROJECTS ARE EXTENSION PROJECTS.
## Annex F
### Extension Projects 2007 (Examples) (Continued)

<table>
<thead>
<tr>
<th>EXTENSION PROJECTS</th>
<th>LUZ</th>
<th>UCV</th>
<th>USB</th>
<th>UBV</th>
</tr>
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<tbody>
<tr>
<td>PROJECT</td>
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<tr>
<td>“Educating Ourselves in the Culture of Recycling Glass and Paper”</td>
<td>87</td>
<td>10</td>
<td>24</td>
<td>ALL*</td>
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<tr>
<td>PROGRAM</td>
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<tr>
<td>“Reproductive Orientation in Adolescents”</td>
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<tr>
<td>PROJECT</td>
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<tr>
<td>“Health promotion for school children and adolescents”</td>
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<tr>
<td>PROGRAM</td>
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<tr>
<td>STUDENT PROGRAM</td>
<td>Pilot project for the electrification of rural zones using alternate energies. Case Study, the Island of Cubagua</td>
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<tr>
<td>PROGRAM FOR GENDER AND WOMEN</td>
<td>Development program for creative workshops for making culturally relevant audio-visual material to foment a culture of life</td>
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<tr>
<td>MARACAY PROGRAM</td>
<td>Participative social diagnostic for communities on the Peninsula of Macanao</td>
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</table>

* ALL THEIR PROJECTS ARE EXTENSION PROJECTS.
### Annex F

#### Extension Projects 2007 (Examples) (Continued)

<table>
<thead>
<tr>
<th>EXTENSION PROJECTS</th>
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<tbody>
<tr>
<td></td>
<td>87</td>
<td>10</td>
<td>24</td>
<td>ALL*</td>
</tr>
<tr>
<td>PROJECT</td>
<td>MIRANDA</td>
<td>PROGRAM</td>
<td>Molecular</td>
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<tr>
<td>“Science in the community. Reflections about scientific knowledge and popular and indigenous knowings”</td>
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<tr>
<td>PROGRAM</td>
<td>NUEVA</td>
<td>ESPARTA</td>
<td>Preliminary study for cleaning up the Sartanejas Creek</td>
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<tr>
<td>PROJECT</td>
<td>PRISON</td>
<td>PROGRAM</td>
<td>Community Journalism Workshops I and II</td>
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<tr>
<td>“Psycho-educational programs for promoting health in the older adult”</td>
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</table>

* ALL THEIR PROJECTS ARE EXTENSION PROJECTS.

Source: Universities.
## Annex G
### Examples of Community Service Projects (2007)

<table>
<thead>
<tr>
<th>LUZ</th>
<th>USB</th>
<th>UBV</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Prevention of AIDS – HIV and sexually transmitted diseases.”</td>
<td>“Project for improving technology and teaching at educational institutes, with the Cisneros Foundation (AME), Microsoft Corporation and Venezuela without Limits.”</td>
<td>“Soil pollution, a problem common to all human beings.”</td>
</tr>
<tr>
<td>“Don’t discriminate against me. Integrate me and together we will learn. Integration of children with disabilities or special educational needs in regular schools.”</td>
<td>“Landscape architecture project for green areas at the Vargas Hospital.”</td>
<td>“The classification of solid wastes.”</td>
</tr>
<tr>
<td>“Training of school spokespersons for radio.”</td>
<td>“Project ‘Learning to be Enterprising’ Option Venezuela.”</td>
<td>“Nonviolence in our environment.”</td>
</tr>
<tr>
<td>“Training of enterprising community actors.”</td>
<td>“Project regarding the feasibility of electrifying rural communities or zones isolated from the electrical grid using renewable energy.”</td>
<td>“The creation of community radio stations.”</td>
</tr>
<tr>
<td>“Nature as a source of recreation.”</td>
<td>“Project, Generation of national technological solutions for the community with motor-linguistic disabilities in the metropolitan zone.”</td>
<td>“Urban and peri-urban agriculture.”</td>
</tr>
<tr>
<td>“Application of the chemistry of foodstuffs to improve the quality of life for inhabitants in the Carracciolo Parra Pérez Parish, Maracaibo Municipality.”</td>
<td>“Project regarding the nutritional state and food security in suburban communities in the Baruta and El Hatillo Municipalities, State of Miranda.”</td>
<td>“Identification with nationalist values.”</td>
</tr>
</tbody>
</table>
Annex G
Examples of community service projects (2007) (Continued)

<table>
<thead>
<tr>
<th>LUZ</th>
<th>USB</th>
<th>UBV</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Reconstruction of cultural and historic identities through the cultural mission and the Communal Councils.”</td>
<td>“Project for bringing children with academic deficiencies in reading-writing and calculation up to level.”</td>
<td>“The organization of rural councils.”</td>
</tr>
<tr>
<td>“Psycho-educational programs for promoting health in the older adult.”</td>
<td>“Project for designing a system for collection, classification and final disposal of solid wastes inside the Simon Bolivar University.”</td>
<td>“Theory and practice of communication and language.”</td>
</tr>
</tbody>
</table>

Source: Director’s Office for Community Service at LUZ, USB and UBV WEB pages.
Is the university attending the last call? In academic spaces—and those that are not—there is a generalized sensation that points to a conclusive crisis for the university. In the face of this despair, underdeveloped countries confront a vital crossroads, because knowledge produced in universities continues to be the principle resource for overcoming the backwardness and poverty that define them.

Concerned about this disjuncture, the International Development Research Centre (IDRC), a public Canadian corporation, whose premise is that the gap between developed and developing countries as well as the cycle of excluding the poorest sectors from science and technology are not inevitable or irreversible processes, called on researchers from countries in the underdeveloped South to participate in a competition titled, “Developmental Universities: A Changing Role for Universities in the South.”

This book presents the results of one project with a national scope selected to receive a grant in the aforementioned convocation. The objective of this Project was to analyze an emerging university model generated in Venezuela and useful for Latin America or the underdeveloped South, due to its potential for conjugating knowledge production with surmounting underdevelopment.
María Cristina Parra Sandoval is a Sociologist and Doctor in Development Studies, graduated from the Centro de Estudios del Desarrollo-CENDES (Center for Development Studies) at the Universidad Central de Venezuela-UCV in 2003. She is a tenured Professor-Researcher at the Universidad del Zulia-LUZ, Coordinator of the Research Line for Systems, Policies and Actors in Higher Education in the Doctoral Program.

Ana Julia Bozo de Carmona is Lawyer, Doctor of Law, and Expert in Public Policies Management (Area: Higher Education). She is a tenured Professor-Researcher at the Universidad del Zulia, Venezuela, and works in the area of University Knowledge Production Management. She coordinates the Program “University Though on the Higher Education Reform” (FUNDADESARROLLO).

Alicia Inciarte González is an Educator and Doctor of Education in Planning. She is a tenured Professor-Researcher at the Universidad del Zulia. She works in the area of Curriculum, Culture and Society in Doctoral and Post-Doctoral Studies in Human Sciences.

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