

PROFESSIONAL KNOWLEDGE ACCORDING TO DEVELOPMENT PLANS OF FEDERAL INSTITUTES OF EDUCATION

LUCÍLIA REGINA DE SOUZA MACHADO

TRANSLATED BY ROBERT DINHAM

ABSTRACT

The article presents results of analyses of documents from institutions of professional and technological education in relation to the use of professional knowledge in its interaction with the social system. Two types of documents were analysed: a. the Institutional Development Plans (from 2009 to 2013) of five Federal Institutes of Education, Science and Technology from Minas Gerais; b. legal documents, some of which from the Ministry of Education. The aim was to know how these documents defined the use of professional knowledge for specific demands of the social system. Priority was given to solid demands of the local, regional and national socioeconomic development; social concerns of social groups and institutions; regional peculiarities; productive, social and cultural local arrangements and these that came from need for environmental protection.

KNOWLEDGE • VOCATIONAL EDUCATION • TEACHING INSTITUTIONS •
SOCIAL DEVELOPMENT

THIS text forms part of research relating to the construction of the identity of professional education and technology institutions that have become the dominant model in the federal government system for this type of education. The research was carried out within the context of the setting up of the 38 Federal Institutes of Education, Science and Technology, as provided for in law for the whole of the country (BRAZIL, 2007, 2008). It focuses only on the 5 units located in the State of Minas Gerais.

As instruments of the Educational Development Plan (*PDE*) (BRAZIL, 2001), the federal institutes are defined as compulsory, professional and higher education institutions, comprising a group of campuses located in meso-regions and that were set up to promote environmental sustainability, to strengthen production, social, cultural and educational arrangements and to support local development and the socialization of technologies, among other purposes. According to Machado & Salles:

The National Education Plan states that, of necessity, education and learning imply preparing the skills needed for practicing responsible and conscientious citizenship in line with the needs of society. Therefore, the formation and improvement of individual aptitudes for a productive life or for exercising scientific, technological, artistic, cultural, political, intellectual, corporate and trade union leadership could not ignore developing the social responsibility of students (2009, p. 43).

Also according to Machado & Salles:

Law 10,172, from 2001, which instituted the National Education Plan, also emphasizes the importance of education as a means and condition of social integration and personal achievement. Therefore, this education needs to be placed in context, with a view to developing the capacity to learn, to forming a relationship with the social and political environment and to adopting attitudes of cooperation, solidarity and responsibility. People need to become more capable of assimilating changes, more autonomous in their choices and more respectful of social differences. A contextualized education is, therefore, fundamental for the growth of the country and a reduction in regional imbalances, within the framework of a national project (2009, p. 44).

Integrated with the policy for ordering the Federal Professional, Scientific and Technological Education system, which is linked to the Ministry of Education, from the moment they were conceived Federal Institutes were called upon to internalize the supply of education, starting with the hub cities, cover the largest possible number of meso-regions and work in harmony with local production, social and cultural arrangements.

This on-going research is, therefore, seeking to analyze in what way these institutions are programming themselves and moving towards the development of contextualized professional knowledge, especially technical and technological solutions, and how they are planning to socialize this knowledge and its benefits in the communities concerned.

Lessard & Tardif (2006, p. 27-28) have recourse to Schön (1990) to state that a professional school always has both disciplinary and practical orientations, and that this dual direction carries with it certain tensions. They also state that, at present, there is a crisis of confidence in professional knowledge, in professional formation and in the capacity of professional schools to prepare for the demands of a practice that is

increasingly defined with reference to the complexity, uncertainty, singularity of situations and conflicts in values.

Among the tensions that have defined relations between educational institutions, knowledge and professional practice, Lessard & Tardif (2006, p. 57) cite the opposition that exists between general knowledge and private knowledge, knowledge considered as an end in itself and knowledge considered as a means to an end, or as a tool for social progress, fundamental science and applied science, critical distance, engagement and useful service, education of the wise citizen and of the competent worker, the morals of intelligence and of the culture of the spirit and the morals of action and of social progress.

The relationships between educational institutions, professional knowledge and professional practices are, therefore, complex and multidimensional, because they respond to various social, economic, political, cultural and educational motivations, which are at times contradictory.

According to Tanguy, “professional knowledge is the object of ever renewed conflicts, because its selection and transmission are frequently provisional because it is the product of a sharing of badly fashioned powers, established on an ambiguous commitment” (s/d, p. 4).

With standards for meeting local development demands it is important to know what the institutional development plans of federal institutes present with regard to their role as professional training institutions *vis-à-vis* contextualized professional knowledge and the demands of professional practice. Given the local contexts, which social players are mentioned when professional knowledge, educational curricula, learning and the production and use of knowledge are mentioned? Are tensions explained? What type of tension are they?

This paper reports, therefore, on the topic of professional knowledge and of educational institutions of professional training in their interaction with the social system. Caria (2006) warns of other points that are more important when it comes to rethinking the relationship between education and work and science. He says the priority:

...is not found in education, either in institutional education systems from the perspective of the one proposing the knowledge and that is directed towards learning, or within the informal

contexts of education (including the work contexts of teachers) and from the perspective of those who are in the pursuit of knowledge (2006, p. 2-3)

Caria also believes that as the school is only responsible for one of the forms of knowledge it is of utmost importance to value “the way in which social players mobilize, use and learn different types and origins of knowledge in the daily processes of interaction”, since reflection about modernity became more complex when it was reoriented towards “analysis of the system of interdependencies and of boundary/intermediation places that are developed and constructed in the social processes of the social division of knowledge” (p. 3).

This paper, however, goes back to the relationship between professional knowledge and educational institutions of professional training and does so, not to question the knowledge supply systems they provide, but rather it assumes that the school is not the place of knowledge from manuals, but of knowledge under construction, or rather, under co-construction (BARTH, 1993). This paper also, therefore, draws its inspiration from Caria (2006, p. 10) to ask: how do the institutional development plans (IDP) of professional schools see “what is known as forms of knowledge defined by their use from the point of view of the social players”?

This paper deals exclusively with replies to the question, which were inferred from reading and analyzing the IDPs of five Federal Institutes of Education, Science and Technology from Minas Gerais (IFMG), which have been approved by the Ministry of Education. An attempt was made to check from these documents in what way professional knowledge was approached in the strategies of these institutions in constructing their educational identities directed at serving the development demands of those territories in which they are located.

An attempt was especially made, following the formulations of Caria (2006, p. 6), to identify if and how the institutional intentions and motivations relative to professional knowledge, are presented: whether they are located territorially, constructed in daily social interaction and on the singularity of the context of local development, adapted to the specificity of problem situations or adapted to the people who interact in a concrete manner.

It is important to remember the distinction that Caria (p. 7) draws between the concept of knowledge and the concepts of information, competence and qualifications. The latter were not the object of analysis of the research here carried out. According to

the author, the concept of information refers to formalized statements that are independent of the daily contexts of interaction; the competence concept has to do with the individual and psychological way of selecting and organizing information, in accordance with the principles and rules of use of such information, with a view to solving problems; and the concept of qualification concerns the process that involves the classification of knowledge as determined by the demands of external organizations. Professional knowledge, on the other hand, is anchored in practical and contextual knowledge (p. 9) and presupposes a “certain level of awareness on the part of the social players as to the knowledge they use that results directly from processes of social interaction” (p. 13). With regard to this “certain level of awareness”, Perrenoud expresses himself thus:

In the strict sense of the word, knowledge is *conscious representation that intends to take into account the reality* and to describe or explain objectively objects, situations, facts, relationships, structures, processes, happenings, actions, thoughts and emotions knowing that the individual is part of the world and intends to be known (2001, p. 2, free translation).

With regard to the anchors mentioned by Caria (practice and the contexts), in the institutional development plans of the federal institutes from Minas Gerais an attempt was made to find the professional knowledge that referred to concrete professional practices and to the territorial contexts in which these institutions find themselves.

In prioritizing “knowledge under construction”, Barth (1993, p. 49) out of opposition to constructed and static knowledge, formulates the concept that knowledge is always contextualized, has a structure, evolves, is cultural and endowed with an affective dimension: each concept refers to other concepts and forms part of a system of relationships, a conceptual network that forms a complex and comprehensive structure, thus allowing the world to become understandable. As it is not fixed, it suffers the contingencies of the meanings that are conferred on the observed reality, which is therefore, in constant movement. To the extent that this evolution is modeled by personal experience, by interaction with others, by interchange and by sharing, and does not, therefore, exist in an isolated way in the individual, it becomes cultural and also affective, because the sensitivity of each individual functions as a framework that filters, selects and modifies the information received by the senses. According to Barth, it is the context that is going to allow individuals to attribute meanings to knowledge, but four

considerations have to be taken into account. The first consideration is that if knowledge is associated with contexts, this means that it is not automatically transferred and cannot be spontaneously appropriated, because people recognize new knowledge by associating it with contexts that are familiar to them, and in this way they do not recognize it if it is out of context or in contexts they are not accustomed to. Secondly, knowledge should not be confused with its context. This is why the use of examples is not enough for communicating knowledge or for establishing a definition. When taken out of its original context and used in different situations, knowledge requires permanent comparison with aspects of context in order to be confirmed. Thirdly, knowledge can be suffocated by a certain dominant aspect of its context. Finally, knowledge can be induced by its context. In this case, narrower or broader contexts exercise different influences on ways of relating to knowledge.

The questions posed converge with some of the theories of Marx (1974) on Feuerbach, in the sense that knowledge depends on the being, that his knowledge is historical and his knowledge is the knowledge of an active being.

FEDERAL INSTITUTES AND PARADIGM CHANGE IN THE USE OF PROFESSIONAL KNOWLEDGE: CONCEPTIONS AND GUIDELINES FROM THE MINISTRY OF EDUCATION

In its 2008 document *Conception and guidelines: Federal Institute of Education, Science and Technology*, the Ministry of Education expresses its expectations with regard to the role of Federal Institutes as far as concerns the change in paradigm of the use of professional knowledge in the Federal Professional, Scientific and Technological Education System. With the intention of “bringing to light identity aspects of this new institutionality” (p. 39), the document understands this change to be an “inversion of the logic hitherto present” (p. 17) in this system, which is characterized by a “conception of a narrow and restricted functionalist character, merely for meeting the objectives determined by capital, with respect to its interest in a qualified labor force” (p. 23). In explaining what this change would be like, the document says that:

This is a progressive project that understands education as a commitment to the transformation and enrichment of objective knowledge that is capable of modifying social life and providing it with greater meaning and reach in the overall human experience, which is a proposal that is

incompatible with a conservative view of society. This is, therefore, a strategy of political action and social transformation. The intention is to overcome the Althusserian view of the education institution as a mere ideological apparatus of the State and the reproducer of the values of the ruling class and reflect internally the contradictory interests of a class society. For the protagonists in the educational process, in addition to their unquestionable role of dealing with scientific and technological knowledge, Federal Institutes reserve a praxis that reveals the places occupied by each individual in the social fabric, which brings to the surface different ideological conceptions and ensures that individuals are able to interpret this society and exercise their citizenship in the perspective of a country founded on justice, equity and solidarity (BRAZIL, 2008, p. 21)

Ministerial arguments are centered on changes in the conception of the use of professional knowledge, thereby justifying “the need for a new insitutionality” because of the “new action possibilities”, “in which the social character is preponderant” (p.17). The creation of federal institutes represents “the materialization of this new project”, which seeks to give “greater prominence to professional and technological education within society”, by means of “an integrated and referenced action in the occupation and development of the territory, understood as being a place of life” (p.17). This new project arises from an internal tension that has been persisting in the Federal Professional, Scientific and Technological Education System:

...within it [system] a correlation of strength was established between sectors that always took it as an arm in favor of capitalist accumulation and an internal movement that saw in educational work an important instrument of social policy, assumed as being that directed at creating opportunities for the redistribution of social benefits, with the aim of reducing inequality (BRAZIL, 2008, p. 23).

Based on this conception the document, in proposing new uses for professional knowledge, did so on the understanding that also:

the territory, in the perspective of social analysis, only becomes a concept when it is used, i.e., when it is thought about along with the players that use it. These are the players that permanently hold dialogue with the territory used; this dialogue includes natural, social and cultural things, social inheritance and society in its current movement (BRAZIL, 2008, p. 25).

This dialogue develops in the constitution of a network of knowledge, in the intertwining of culture, work, science and technology in favor of society, in a chain of

intercultural solidarity founded on the pursuit of equality in diversity, on the increase in new knowledge and on the incorporation of social sectors that were historically ousted from Brazil's development and modernization processes.

The meaning of the use of professional knowledge, therefore, comes from the contribution it makes to the construction of a more democratic, inclusive and socially and environmentally balanced society; the triumph of sustainable local and regional development and the building up of a more sovereign and autonomous country in the production of science and technology.

With this document, MEC's point of view considers professional knowledge in federal institutes as knowledge oriented by universal human values, by the construction and rescue of citizenship, by the search for social transformation in favor of social inclusion and by the improvement in the living standards of the population of the territories in which these institutions are located.

This is knowledge for supporting public policies and local production arrangements that are capable of empowering human beings to develop an interactive social practice, to understand reality and to think and act with the prospect of overcoming the obstacles to the necessary political, economic, cultural and social transformations.

The ministerial document, therefore, emphasizes the importance of overcoming the shared view of knowledge and disciplines and the dichotomies that fragment knowledge, such as the separation between theory and practice and between science and technology.

Founded on the educational principle of work and research, stimulated by the attitude of curiosity vis-à-vis the world, linked to the world of production and work, based on a critical feeling about place and history, strengthened by disciplinary integration, dialogue with the world of territories provides, therefore, a deeper appropriation of professional knowledge, in view of the materialization of the project of society that it is intended to make a reality.

Therefore, with the 2008 document *Concepção e diretrizes: Instituto Federal de Educação, Ciência e Tecnologia*, the Ministry of Education deals with professional knowledge in these institutions as forms of knowledge defined by their use, from the point of view of the social players. The document relates professional knowledge to the strategies of federal institutes for meeting the development demands of the territories in which they are located. It considers the need to contemplate the points of view of other

social players in the local contexts with regard to professional knowledge and not exclusively, or predominantly, the views and economic interests of companies. The explanation takes into account the history of the tensions inside federal institutions of professional education and technology that involve their identity and the commitments of the professional knowledge they produce, apply and socialize.

Law 11.892, dated December 29, 2008, which instituted the Federal Professional, Scientific and Technological Education Network, which is linked to the Ministry of Education, within the realm of the federal education system and created federal institutes, made it clear in Article 1 that the supply of education in these institutions “at all levels and modalities”, must lay “emphasis on local, regional and national social and economic development” (Item I); that the “educational and investigational process for generating and adapting technical and technological solutions” must “meet regional social demands and peculiarities” (Item II), “in benefit of the consolidation and strengthening of local production, social and cultural arrangements, identified from the mapping out of the social, economic and cultural development potential within the sphere of action” of each federal institute (Item IV); promoting “the production, development and transfer of social technologies, notably those directed at preserving the environment” (Item IX):

Below are the syntheses of the content of the institutional development plans of the five Federal Institutes from Minas Gerais, as prepared for the 2009 to 2013 period, and referring to the purposes defined by law and of interest to this research. The document research sought to identify: (a) what each of these institutions indicated about the targets and strategies with regard to the use of professional knowledge; (b) to what each one gives priority, with regard to service and to local, regional and national social and economic development;(c) what specific social interests were indicated as preferential or as a priority; (d) which regional peculiarities they intend to consider; (e) which local production, social and cultural arrangements were identified and should be strengthened; (f) and referring to preservation of the environment, which needs are pressing in this service.

PROFESSIONAL KNOWLEDGE IN THE INSTITUTIONAL DEVELOPMENT PLAN OF *IFMG* (2009-2013)

The Federal Institute of Education, Science and Technology of Minas Gerais (*IFMG*) covers the following meso-regions in the state of Minas Gerais: West (the campuses of

the municipalities of Bambuí and Formiga), Metropolitan (the campuses of Congonhas and Ouro Preto) and Vale do Rio Doce (the campuses of Governador Valadares and São João Evangelista). Its headquarters are in the capital, Belo Horizonte. The *IFMG* states in its Institutional Development Plan for the 2009 to 2013 period that:

The teaching principle of contextualization allows the institution to think about teaching projects in a flexible way, with an ample network of meanings, and not just as a place for transmitting knowledge. It perceives the practice of an education that enables the learning of values and attitudes for living in a democracy and that, in mastering knowledge, gives the student body the skills to discuss issues that are of interest to all, leading to an improvement in the quality of life, awakening awareness as to issues concerning the environmental issue and sustainable social and economic development (BRAZIL, 2009, p. 15).

For this reason, it proposes:

The inclusion of social elements in teaching in order to bring about significant learning that will mobilize the student body and establish between it and the object of knowledge a reciprocity relationship, with the aim of contributing to the formation of the student vis-à-vis social demands, so that he or she becomes a transforming agent in the community, based on the knowledge acquired (BRAZIL, 2009, p. 15)

However, the document restricts itself basically to explaining its very general principles and guidelines. Most of its targets have to do with the creation of teaching, research, extra-curricular course and management infrastructures. This concern is understandable, since such conditions are considered essential for carrying out the institutional purposes provided for by law, but they were not objectively detailed. Not even the use experiences accumulated by institutions that joined together to constitute *IFMG* were mentioned. There are, however, parts of the document, like the one reproduced below, that are based on a conception of professional knowledge that focuses only on the labor market bias and on professional advice criteria, without considering other points of view or the needs of other social players, as suggested by the normative and legal documents for the creation of federal institutes:

Content for the courses offered by the institution, in addition to respecting the standards established by the appropriate agencies of the Ministry of Education and by the Professional Councils, is selected in accordance with the specific needs of each course, with the objective of

preparing a professional who meets the needs of the labor market in which he/she will work in an efficient and suitable manner. In order for this objective to be achieved this selection needs to be carried out in accordance with the teaching proposal of the courses, thereby ensuring articulation between content and teaching method (BRAZIL, 2009, p. 39).

This conception, which is far from what the new paradigm proposes, is repeated when the document refers to the policy for the student body, in particular those who are graduating:

IFMG's proposal is to develop a Graduate Monitoring Program, the objective of which is to accompany and evaluate aspects relating to the inclusion of former students in the labor market, with the intention of providing information to the agencies responsible for teaching in *IFMG* in their didactic-pedagogical reorganization of the courses, in such a way as to adjust them to professional needs and new demands, in addition to proposing actions directed at continuous training and the establishment of a closer relationship between those graduating and the Institution (BRAZIL, 2009, p. 52-53).

In other words, the criteria regarding content selection and the monitoring of those graduating are referred to within the concept of adjusting professional knowledge to its use by the labor market or by professional councils. It is important to say that in other passages the document makes reference to meeting the demands of local, regional and national social and economic development, but without specifying which demands and without defining the strategies for such. It is also noted that it is in the part that deals with the social responsibility or extension services policies that such issues receive greater attention, without however reaching a more concrete definition level, as one sees in this extract:

IFMG will expand and improve its extension services by adopting articulation mechanisms with public and private institutions (educational or otherwise), with segments of society, with families and with production sectors. In this way, in developing permanent joint work, which materializes in the achievement of common and priority objectives, the target of sustained development will become feasible (BRAZIL, 2009, p. 16-17).

As for the social interests to be met, the document mentions in a very generic way the “demands of society and the labor market” (p. 1), but later mentions that:

...the institution intends reviewing its role as an arena for thinking in which ideological and cultural differences circulate, the role of the teacher as an agent of social transformation and the theoretical and methodological fundamentals as instruments of awareness-building and politicization (BRAZIL, 2009, p. 17).

It also informs that its purpose is to “discuss internally and externally the teaching projects introduced, with the aim of establishing a continuous assessment of teaching practices and their true harmony with life and the world of work” (p. 18).

The document makes no mention of the use of professional knowledge vis-à-vis the regional peculiarities identified. In the introduction the text recalls that “countless questions are raised with the objective of offering technical, graduate and post-graduate courses that meet the needs of the regional realities in which the campuses are located”. Although it does not go on to say what these questions are the document takes pains to say that:

Given these questions, the managers of the institute and the formulators of public education policies are required to pay constant attention to the pursuit of a balance between professional and academic education, between basic education and multidisciplinary education and the development of extra-curricular activities (p. 18).

In other words, the concept is passed on that those oriented to regional peculiarities need to be guided by a certain equilibrium, whose criterion has not been defined. Concrete actions for establishing dialogue with the territory, such as “holding workshops for discussing regional production arrangements” or “encouraging permanent diagnosis and discussion of the regional reality with communities”, were mentioned as extension services (p.5), but no information was provided as to how these initiatives are linked to teaching, research and management policies. The document merely informs of the intention of “carrying out studies that indicate alternatives for creating new courses directed at the technical, scientific and social development of the regions covered by the institute” (p. 17).

Professional knowledge in the Institutional Development Plan of IFNMG (2009-2013)

The Federal Institute of Education, Science and technology of the North of Minas (IFNMG) resulted from the integration of the Federal Center for Technological Education of Januária and the Federal Agricultural Technical School of Salinas. It comprises seven campuses: Januária, Salinas, Montes Claros, Pirapora, Almenara, Arinos and Araçuaí. The dean's office is in Montes Claros and it covers 126 municipalities that belong to three meso-regions in the state (North of Minas, part of the Northwest and part of Jequitinhonha). In the Development Plan for the 2009-2013 period, the *IFNMG* seeks to express in different ways its commitment to the demands of society and “to the praxis of academic knowledge”, conceived as being:

...the knowledge produced at the *IFNMG*/community interface enables social transformations to take place and feedback to be provided for the teaching-learning process, making it essential, therefore, that students are educated, teachers up-dated and citizenship exercised. The increase in the complexity of social relations arising from a globalized social, economic and cultural context that is in permanent transformation and that creates tension and exclusion, characterizes the reality of the country and demands that public institutions be more committed to the well-being of society (BRAZIL, 2009a, p. 47).

Among the goals are found the following: to define guidelines for the up-dating and curricular redimensioning of courses, in harmony with the dynamic of local, regional and national needs; to promote the expansion of courses, in accordance with social demands; to define priority lines of research, applied on the basis of the potential and of social demands; to encourage partnerships with federal, state and municipal government and non-governmental entities. As an instrument of social and internal dialogue, it indicated that it will introduce the IFNMG Ombudsman and create an area on its website for collecting suggestions from the academic and external community for improving its activities.

With regard to the benefits for local, regional and national social and economic development, IFNMG adopts the position of using professional knowledge in a way that “favors the creation of work, improvements in employability conditions and the increase of income for rural and urban workers and their families” (p. 43) and to “strengthen the incubation work of companies or projects to encourage entrepreneurship

and cooperativism” (p. 50). According to page 52 of the document, it wishes to sign agreements with the Development Company of the São Francisco and Parnaíba Valleys (*Codevasf*), *MEC*, the Ministry of Science and Technology (*MCT*), the State Forest Institute (*IEF*), the Minas Gerais Power Company (*Cemig*), the Agriculture and Livestock Research Company of Minas Gerais (*Epamig*), the Brazilian Agriculture and Livestock Research Company (*Embrapa*), higher education institutions (HEIs) and public and private companies.

IFNMG assumes “that the formation of its students cannot be based on a reductionist view of the labor market” (p. 47) and that it is necessary “to articulate the existing knowledge with the needs of individuals and of society, since science and technology are *human productions marked by political and cultural choices*” (p. 48).

The use of professional knowledge by graduating students is based on the proposal of IFNMG that is characterized by humanistic education, a global view, an understanding of the social, political, economic and cultural environment in which it is finds itself and the need to take decisions in a diversified and interdependent world. The professional problems to which it must respond are extensive, going beyond the development of technical and scientific activities to include entrepreneurial action, criticism of organizations, the identification of opportunities, the anticipation and promotion of transformations, interdisciplinary team work, the “effective action of each individual to interfere in the destiny of the community”, the articulation of “knowledge in various areas for the significant construction of knowledge” and the “joint preparation of knowledge that results from the synthesis between theory and practice” (p. 93-94).

To make such intentions feasible IFNMG understands it needs to take as its point of reference the democratization of knowledge, since “life in society is part of the collective production of knowledge, so knowledge and the opportunity to learn are shared in an arena of equality”, the need for continuous education, because “learning is based on a view of education as a permanent process and on the self-development purpose”; and on the global and integrated view of the social dynamic, since “the student is considered to be a participant in the development process of the society where he/she acts, with committed inclusion” (p. 93-94).

In planning its academic activities for the 2009 -2013 period IFNMG shows itself to be interested in the development of “actions that enable the insertion of marginalized and minority segments” (p. 42) and in “welcoming in a substantial way

people who have historically been fallen outside work training policies” (p. 44). The proposal, therefore, is to develop:

projects that add a set of transforming actions, techniques and methodologies, developed and/or applied in the interaction with the population and appropriate to it, which represent solutions for social inclusion, the creation of opportunities and improvements in living conditions. Such projects aim, for example, to strengthen social inclusion and citizenship formation by articulation between the Institution, the community and the company, to expand access to professional education for students from public systems and to consolidate the participation of graduate students in professional qualification projects at the basic level (BRAZIL, 2009a, p. 57-58).

In its planning, however, IFNMG does not detail which regional peculiarities will be the preferential objects of consideration of each of its campuses. There is a general determination to adopt the content of the courses on “relations with the local, regional, national and international reality, within an historical and contextualized perspective” (p. 94).

The document mentions the existence of local production, social and cultural arrangements in the social and economic study it carries out of the regions in which its campuses are located. However, it does not explain which arrangements should be strengthened and the professional knowledge that would be necessary for doing so. The document simply expresses the need to “expand partnerships with companies (public and private) with the aim of better identifying the LPAs [local production arrangements] and regional and potential vocations” (p. 52). A similar position can be found with regard to definitions as to the use of professional knowledge for preserving the environment. Beyond the general intentions the document restricted itself to stating the target for creating and strengthening research groups and networks directed at environmental preservation (p. 18).

It is important to emphasize the purpose of IFNMG in promoting what it calls the “transcampus” extension. This means the joint actions of the various campuses and “making room for dialogue with public Institutions, S system bodies, non-governmental organizations, private companies and volunteers from the external community...” (p. 62-63), thus showing the institutional willingness to include the various points of view on the use of professional knowledge in the dynamic of academic activities.

PROFESSIONAL KNOWLEDGE IN THE INSTITUTIONAL DEVELOPMENT PLAN OF IFSUDESTE (2009-2013)

The Federal Institute of Education, Science and Technology of South-eastern Minas Gerais (IFSUDESTE) covers two meso-regions in the State of Minas Gerais, the Zona da Mata and Campo das Vertentes. It was constituted following the merger of the Federal Agritechnical School of Barbacena, the University Technical College, which had previously merged with the Federal University of Juiz de Fora, and the Federal Professional and Technological Education School of Rio Pomba. The Muriaé Campus was added to these units as part of expansion plan II, of the Professional and Technological Education System and the Advanced Nucleus of São João del Rei.

The Institutional Development Plan of IFSUDESTE is succinct and gives no details of its strategic objectives, especially as far as concerns the purposes defined in law and of interest to this research. The institution says it is motivated to “strengthen relations with local and regional society, in harmony with the LPAs” (p. 14). Although it does not mention with which organizations of this type it will strengthen its ties, it proposes “adjusting the new courses and matrices of the already existing ones to meet social demands and those of the LPAs” and “including in course projects articulation activities of teaching with the LPAs and the demands identified” (p. 16). There is, therefore, an interest in incorporating other points of view on the use of professional knowledge and its teaching-learning, research, extracurricular courses and management processes.

IFSUDESTE is also interested in using professional knowledge for “developing the Institution’s entrepreneurial culture, associated with innovation” (p. 14). In this sense, its experiences with company incubators (p. 24) and junior companies are likely to be expanded and reinforced (p. 30). It is also its intention “to promote basic and applied research, with a focus on innovation and local and regional development” (p. 23), “on the environment and on social responsibility” (14). IFSUDESTE is proposing “to expand the supply of quality public education, responding quickly to the demands of individuals, society and the world of work” (p. 13). It understands, therefore, that:

...institutional change should be realistically based on internal change, through the search for a new efficiency standard, by the supply of a new standard of relationships and by a new approach to the external environment in which, by means of new courses, a new extra-curricular course

program and a new research program the Institute effectively comes into line with modern times and in conditions of fruitful partnerships with its congeners and the local, regional and national business environment (BRAZIL, 2009b, p.13).

In this sense it considers it important to strengthen, improve and perfect its institutional communication instruments and to do so it advised that it intends setting up an educational TV and radio station.

PROFESSIONAL KNOWLEDGE IN THE INSTITUTIONAL DEVELOPMENT PLAN OF IFSULDEMINAS (2009-2013)

The Federal Agritechnical Schools of Inconfidentes, Machado and Muzambinho merged to constitute the Sul de Minas Federal Institute (IFSULDEMINAS), the dean's office of which is located in Pouso Alegre (MG). The three institutions come from important experiences in the use of agrarian professional knowledge and in responding to the invitation to merge into a new professional and technological institute of education model are doing it with the prospect of significant expansion and diversification in their dialogue with others.

The very preparation of its Institutional Development Plan for the 2009 - 2013 period has the stamp of different approaches, since "it was the fruit of participative work that demanded time and the efforts of different sectors to express the needs that regional society should be the major beneficiary in teaching, research and extra-curricular course activities" (p.150). The document contains a large amount of information and is an important source for consultation relating to the use of academic practice and the processes of institutional evaluation. Its interpretation is that the creation of institutes means a qualitative leap in the prospects for the institutionalization of professional and technological education in the country. It makes it clear that the role of professional and technological institutions of education, with the creation of these institutes, underwent a significant flexion, with the incorporation of dialogue between research, extra-curricular courses, teaching and management from the perspective of a commitment to local development. The research programs in the IF of Southern Minas, for example:

...must be presented with a strategic function and must pervade all levels of education. The objects of these programs also include meeting social demands and serving the world of work and production, with an impact on the local production arrangements and a contribution to local, regional and national development and stimulating research that is committed to technological innovation and the transfer of technology to society (BRASIL, 2009c, p. 102)

The document shows that the academic community understands the importance of the concept of “territory” as a unit of reference for defining the responsibilities of each Federal Institute. It is in this sense that it states: “after institutionalization, we started being responsible for cultivating our commitment to social issues and to a new development perspective in a more emphatic way” (p. 64). This commitment takes “into consideration the principles of sustainability and solidarity” and the basic work needed, so that each citizen “is aware that the well-being of his or her political community and territory depends on collective responsibility” (p. 65). Hence, the use of professional knowledge that makes it possible to involve the community and to know the structure, dynamic and potential of the organization of society (p. 65). The document, therefore, deals with integration processes between school and community that would play “a fundamental role in defining the modalities and priorities in the supply of education, the identification of research problems and the carrying out of extra-curricular activities”. (p. 64). Professional knowledge, therefore would have a relationship with local and regional identity as the key to the “construction of interests, values and social and educational projects” (p. 59).

The Institutional Development Plan of the Federal Institute of the South of Minas, therefore, expresses its interest in developing and deepening social dialogue and professional knowledge, which is to be developed and nurtured by “a forum of debates on local development in the south of Minas” (p. 23), by “periodic meetings with businesspeople, workers, industrialists and rural producers” (p. 24), by “partnerships with associations, cooperatives, companies, NGOs, class entities, municipal, state and federal public administration bodies, research and extra-curricular course institutions and other public and/or private institutions”(p. 23).

In dealing with the importance of “adopting approaches that include differences, i.e., that value different experiences and local cultures, various epistemologies and spiritualities” (p. 62), the document recognizes the need to incorporate different points of view on professional knowledge and its uses. But it adopts a critical stance with

regard to the traditional conception of the use of professional knowledge exclusively for the market logic, as can be seen in this passage:

In addition to technological development, therefore, it is intended to offer help for developing government programs that have a social inclusion proposal and perspectives that are more inclusive of the development process, to seek to expand the freedoms of individuals through attending to their basic rights and to the conquest of public spaces by the action of civil society, to reduce inequality in opportunities and to create conditions for the autonomy and empowerment of those who are marginalized; in short to free the view of development from liberal, market-induced concepts (BRAZIL, 2009c, p. 65).

In this sense, the document presents an extensive program for the 2009 – 2013 period, to be developed in the south of Minas Gerais, which includes qualification and professional training, support for the organization of civil society, support and incentives for initiatives for generating work and income, the dissemination of science and technology, the setting up of an educational radio and TV station, talks for the community, company and cooperative incubators, technical assistance by means of junior company, events, the provision of technical services and consultancy for the community, the launch of an extracurricular course magazine, a social integration extra-curricular course program drawing on the experiences of students in the community, the introduction of the National World of Work Observatory, etc. It is interesting to highlight the proposal for constructing an agenda for local regional development by 2022, called “Development as freedom: 200 years of Independence”, as a way of celebrating the bicentenary of Brazil’s independence. It is worth also mentioning the following projects that the Institute is proposing to support and develop: the Margarida Alves Integrated Action Center for Women, aimed at promoting public gender equality policies, the partnership with the Baixa Mogiana Micro-region Municipalities’ Association in the education area and the Incubator for Technology-based Companies (*Incetec*), a support structure for generating and consolidating companies of excellence in the technological area.

PROFESSIONAL KNOWLEDGE IN THE INSTITUTIONAL DEVELOPMENT PLAN OF IFTRIÂNGULO (2009-2013)

The Federal Institute of Education, Science and Technology of the Triângulo Mineiro (IFTRIÂNGULO) the dean’s office of which is in Uberaba, covers the whole of the

meso-region of Triângulo Mineiro and Alto Paranaíba and part of the meso-region of Northwestern Minas Gerais. This federal institute was formed by the merger of the Federal Center of Technological Education of Uberaba, the Federal Agritechnical School of Uberlândia and the Decentralized Education Units of Paracatu and Ituiutaba, each one giving rise to a campus. In its Development Plan, the assumption of IFTriângulo is that the new institutionality of professional and technological education that originated with the creation of the federal institutes represents a break with the use of professional knowledge under the hegemony of economic logic. Counterbalancing the tradition of this educational field it considers that:

In organizing itself as an Institution IFTRIÂNGULO consolidates its social role by choosing the basic principle of social good as the guide for education, constructing a network of knowledge that binds together culture, work, science and technology in favor of society (BRAZIL, 2009d, p. 21)

IFTriângulo takes as its reference point the notion of “flow, which establishes an exchange of systematized, academic and popular knowledge”, in the expectation of promoting the democratization of academic knowledge and the effective participation of the community in its activities (p. 48). It justifies this option by considering that:

...overcoming social inequalities and meeting the needs of the population demand the democratization of knowledge and the formation of professional citizens capable of placing the scientific and technological knowledge so acquired at the service of the political, economic and social development of the space in which they live (BRAZIL, 2009d, p. 51)

It therefore proposes among other targets to develop professional and technological education as an investigative process for generating and adapting technical and technological solutions to meet social demands and regional peculiarities, to improve the supply system of new courses and to adjust existing curriculums in line with local and regional production, social and cultural arrangements. Among the extra-curricular course programs, reference is made to the work in agricultural villages and family farming, agro-industrial and artisanal communities and the need to establish partnerships with federal, state and municipal government entities and with non-governmental entities in order to optimize their being in tune with society.

With regard to social inclusion, it is proposed to place professional education in the service of discriminated-against or under-represented social groups; those that defend the environment, are for the development of research and for the socialization of their results; those in favor of the preservation of cultural memory, artistic production and cultural heritage, and those for encouraging entrepreneurship and the scientific and technological development of social responsibility. It also proposes supporting social movements that act in solving the demands of local and regional society (p. 50).

With regard to the communication strategies that aim to exchange knowledge with different social players IFTriângulo mentions carrying out and participating in events and programs organized by media vehicles, the publishing of an institutional newspaper and the creation of its own ombudsman.

CONCLUSIONS

The proposal to create Federal Institutes of Education, Science and Technology can be interpreted as a paradigmatic innovation for the Brazilian professional and technological education agenda and the way of constructing it, the character of these institutions, the way professional knowledge is used in responding to social demands and the dialogue between the teaching-learning, research, extra-curricular and management processes.

The new institutional model for professional and technological education is based on the hybridism of the context from which the demands for professional knowledge and knowledge that can be applied emerge, which includes but goes further than the traditional requirements of the so-called production sectors. The need to serve other social interests and take care of interdisciplinary, intersector and intercultural relationships requires of these new institutions greater sensitivity with regard to the values, aspirations, needs and preferences of different individuals and social groups.

In building their institutional identities Federal Institutes are now being challenged to identify strategic partnerships, mobilize local assets, explore potentials and opportunities and incorporate all the physical, territorial, ethnic, cultural, social, economic, political and institutional aspects of the meso-regions in which they are located.

Local development means altering the concentration conditions of knowledge, power and wealth; promoting educational, cultural, social, political and economic changes; expanding the public sphere and transforming relations between state, market

and society, because it presupposes mobilization, participation and social management based on recognition and the valuing of local assets.

Institutional inclusion in the territory presupposes articulation between the educational and productive praxes in their different manifestations, comprising popular initiatives, the pursuit of productive efficiency in economic projects of a social nature, and orientation and support for sustainable production from the economic, environmental and social viewpoints.

This analysis of the institutional development plans did not dwell on detailing the commitments of the five institutes from Minas Gerais or the ways in which they participate in local and regional educational arrangements through cooperation with the tasks of the states and municipalities for developing public education.

It is known that documents, like institutional development plans, have their limitations because they often fulfill bureaucratic functions and are not always taken as the reference point for management. However, they are the windows through which the institutions reveal themselves. In their implementation it is necessary to extract the program consequences of the studies carried out into their action contexts; to guarantee environments that are suitable for the materialization of the proposals and targets presented; to provide information about the different fields of academic experience; to effectively assume the new challenges proposed by the legislation; to motivate all participants; to favor the interaction of different types; to invest in qualifications for technical and teaching personnel, and to systematize experiences, showing coherence between principles, purposes and results.

It is not enough merely to recognize the greater heterogeneity of the social players involved in constructing this new institutional model. It is necessary to discover their motivation and interests and to know the implications for the political economics and anthropology of the production and use of professional knowledge. Within federal institutes the proposal implies greater diversity in the academic community because of its pluri-curricular and multi-campus design and because of the verticalization of educational supply, conceived with a view to obtaining benefits provided by the economy within its reach. Outside, in their relationships with the social surroundings there emerges a greater differentiation of players and interests to be served (social, cultural, educational, political and economic) in addition to those that were considered traditionally as being a priority.

For the new institutions, greater and closer interaction between the various social players involved with the production and use of professional knowledge represents the prospect of a wide range of possible cooperation agreements and strategic alliances, for which skill in conducting negotiations is required. It also obliges these institutions to organize themselves in a more horizontal way in order to open up to different points of view on production and the use of professional knowledge, to human creativity as a social and collective phenomenon and to greater social responsibility with regard to definition of the priorities and implications of the decisions taken. A more open and less centralized structure from the political and administrative points of view and innovations in the institutional communication strategies are fundamental so that these institutions become more permeable to the demands of those around them and to interactions with different interests, motivations, experiences and cultures.

All this has consequences for institutional evaluation, which becomes more socially distributed when considering the diversity that exists in the social points of view and interests. Therefore, other dimensions and other evaluation criteria that are involved in the use of educational knowledge may make quality control more dependent on local and regional contexts.

The assumption of the government proposal is that the new production ethics and use of professional knowledge may come from previously existing educational structures (federal centers of professional and technological education; agritechnical schools; schools linked to universities) and that they can be transformed by external mechanisms of induction, by the formal integration processes of institutions and by a change in the law. Possibly the new ethic for producing and using professional knowledge in interacting with the previously existing ethic may not go as far as superseding it, but may settle in its interstices without reaching a position of hegemony. It may not even be introduced, in fact, but remain limited to an intention registered in institutional documents.

The elements found in the institutional development plans reflect the initial phase of the introduction of federal institutes, characterized by a certain fluidity and possibly by latent or manifest tensions that have not been recorded in the documents consulted.

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