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CUBAN TECHNICAL AND PROFESSIONAL EDUCATION IN AGRICULTURE AND CATTLE RAISING: THE WORK AS CENTRAL ELEMENT

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ABSTRACT

We analyzed the Cuban technical and professional education in agriculture and cattle raising, mainly by the experience of the offering of technical and higher education teaching courses of Education in the specialties of agriculture and cattle raising, an educational model that counts with a long tradition in the field. The objective of this research was to revisit the historical trajectory of technical and professional education in agriculture and cattle raising and the transformations after the 1959 revolution. We describe the implementation of the Cuban socialist proposal, the agrarian reform and the transformations of the educational system. Also, the contributions of José Martí's ideals on the restructuring of the educational proposals among the pedagogical principles of integral formation and to labor life, patriotism, citizenship, moral and the values relating education with productive work, the influence of Russian education and Marxist-Leninist principles on building a unique educational system centralized on work, with a massive and gratuitous character.

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INTRODUCTION

In Cuba, Technical and Professional Education (ETP) in Agriculture and Cattle Raising has been deeply transformed since 1959. In this context, it was created an Educational System which had, among others, the assignment of forming technicians in the fields of agriculture and cattle raising and teachers with a degree of Education for teaching professionalization on the field. The education degree, in the specialty of agriculture and cattle raising, offered by the Higher Pedagogical Institutes for Technical and Professional Education (in Spanish: *Instituto Superior Pedagógico para la Educación Técnica y Profesional* - ISPETP) and Cuban Universities of Pedagogical Sciences (in Spanish: *Universidades de Ciências Pedagógicas* - UCPs) was created,

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primarily, for the formation of teachers of the specific subjects of the technical and professional education in agriculture and cattle raising, offered by the Polytechnic Institutes of Agriculture and Cattle Raising and by the university itself. Until the year of 2015, the *Universidade de Ciências Pedagógicas "Hector Alfredo Pineda Zaldívar"* (UCP "HAPZ") offered teaching degree in education courses in the specialties of: Mechanical, Electricity, Construction, Economics, Agriculture and Cattle Raising and Mechanization (Cuba, 2016). It is important to highlight that these teaching degree courses are all destined to the preparation of teachers to act in the technical and professional education courses. The Polytechnic Institutes of Agriculture and Cattle Raising and the Cuban Universities of Pedagogical Sciences (UCPs) articulated in favor of the technical and professional education in order to plan, elaborate and offer the teaching degree in Education in the specialty of agriculture and cattle raising. In this process, the integration and verticalization ended up happening in both theory and practice.

UCPs used the structures of the polytechnic institutes as educational laboratory, to develop the activities of research, teaching, work and production and also to elaborate the teaching degree courses *curricula*. Regarding to verticalization, the trend is that students of technical courses would follow the higher education careers in the same field, as well as the students of teaching degree courses would become teachers of their own institutes. Teachers of the Cuban polytechnic institutes have the opportunity to go back to the UCPs for graduate courses (*stricto sensu*) and develop research in the levels of Master's and doctorates degrees. It is important to highlight that after the conclusion of the teaching degree in education, in the specialty of agriculture and cattle raising course, the students would get a document which allows them the right of acting as a teacher in the polytechnic institutes of agriculture and cattle raising. The teaching degree in education, in the specialty of agriculture and cattle raising courses have been integrated and verticalized with other secondary education technical courses since the decade of 1960, throughout an integrated educational and researching system aimed towards debating the main problems of ETP courses offered by the polytechnic institutes and the teaching degree courses offered by the UCPs, making interventions on them. These researches are usually developed by teaching degree in education, master's and doctorate students and also by UCPs teachers.

Theoretical and Methodological pathway: In this research, we analyzed official documents that presented relations with the professional education in agricultural and cattle raising, as laws and decrees. We also performed free and semi-structured interviews with Cuban institutions' teachers and administrators. In light of the reality "as seen from inside", we aim to understand how teachers witness, review and rebuild the trajectory of this course and build the present in its dialectical movement with the past. Recurring to Magalhães (2007, p. 103), we would say "[...] here the memory appears as an important source of connection between the past and the present, that is, of temporalized rationalization of experiences". We will be able to say that teachers compose these institutions, support themselves on values, rules and conditions (social frameworks) that consign these institutions, so we support on Halbwachs (2006) conception, when he affirms that each group is imbricated with those with which it relates, interacts and builds the collective representations on a lived phenomenon.

Work as Central Element in Technical and Professional Education Courses: In Cuba, there is a uniformization of curricular procedures and integration of the various educational stages. In Carnoy's interpretation (2009, p. 92; 116), "[...] the Cuban state believes in a system hierarchically driven in order to achieve its goals [and] the Cuban social context (collective social capital) differs significantly of the context of the rest of Latin America". We also point out that this theorist's studies about students' development in the earliest grades of elementary school point to a supremacy in Cuban students' learning.

"[...] Cuban students overcome in academic development students of the other countries [Argentina, Bolivia, Brazil, Chile, Colombia, Mexico] with more than one standard deviation in the exam of language and with a standard deviation between 1 and 1.5, approximately, in the exam of Mathematics. The difference of the standard deviation

equivalente to 1 means that, when the students of the other countries answer correctly 50% of the exam questions, Cuban students answer correctly, in average, more than 84%. [...] among the Latin American countries, Cuban students have highly instructed parents, who probably read to their children and expect that their children stand out in school [...] and Cuban students' teachers usually have a higher level of initial formation" (Carnoy, 2009, p. 101). Carnoy's research (2009) reveals important elements for the comprehension of Cuban education and its distinguished position in quality when compared to the many Latin American countries. This way, we highlight that the society of that country has prioritized education since the Cuban Literacy Campaign, abolishing illiteracy and preparing a number of well capacitated teachers, which contributes to a quality education diffusion. Moreover, according to the studies of Carnoy (2009, p. 117), "[...] a candidate to a college of education in Brazil and Chile knows less Mathematics than the average high school senior student in Cuba. This way, a primary teacher graduated from a Cuban pedagogical institute is better prepared in Mathematics than primary school teachers of other Latin American countries". All of this leads us to believe that Cuban educational system has made one of the greatest achievements in the process of educational revolution and, consequently, integration of the educational system since initial grades until teacher formation courses in a gratuitous and with quality way. Cuba's pretension was to build an educational model which is different of the ones practiced among the capitalist countries, a model of revolutionary education well closed to the proposal of the "education of the future" idealized by Marx (2013). Accordingly to this author, the "education of the future" would have to "[...] in the case of every child over a given age, combine productive labour with instruction and gymnastics, not only as one of the methods of adding to the efficiency of production, but as the only method of producing fully developed human beings" (Marx, 2013, p. 554).

In a certain way, Cuban education prioritized human and worker formation aligned with the socialist principles. In Cuba, as Carnoy points out, even "[...] students of primary school in the countryside seem to learn more than students of urban areas of the rest of Latin America. This mark is even more noticeable because Cuba is very poor in resources, presenting low levels of material consumption. Even so, it has systems of school and social support that help a very high percentage of students to reach high levels of academic development" (Carnoy, 2009, p. 19). It is good to remember that the transformations in Cuban educational system counted on the contributions of USSR through technical and pedagogical support and teachers' formation, even in levels of master's and doctorates. Cuban governors believed in the power of school to resolve the economic and social problems and built a new society in marxist-leninist principles, destroying, there, the capitalist ideals. In this way, the Technical and Professional Education also became a strategy, not only for formation of the socialist collective consciousness, but, also, formation for the work. One of the assumptions of the educational system of that country is the articulation of all educational stages of teaching, since kindergarten until postgraduate, in the integral formation of the student, which main aim is the work. Through primary and middle school, students are submitted to technical and practical knowledges fundamental to work and have the first contacts with production. In the Polytechnic Institutes of Agriculture and Cattle Raising, students of secondary education technical

courses and teaching degree in education courses of this specialty are inserted since the first year directly in contact with work, in agricultural and cattle raising production units. In this educational model, theory and practice become integrated elements in a unique, public and free school of formation to intellectual and manual work. This new worker is inserted in a class free society, of full employment. In Cuba, students not only work to help in the country's production and economy, but also to know the process of production, the work inside the principles of personality development and of actions integrated with the society. A well prepared labor force as the principles of collective work in favor of the common well in the construction of the collective spirit and productive work. The governors established educational politics aimed to the integration between production/education/work in all educational levels and modalities.

Conditions of life in work with the land were also created, as well as investments in the health system, feeding and, especially in the building of an educational system suitable to the reality of the countryside and for the countryside, in accordance with the socialist conceptions. A new society was built inside the principles of collective and solidary work. In the Polytechnic Institutes of Agriculture and Cattle Raising, both high school and teaching degree in education, in the specialty of agriculture and cattle raising students have direct contact with the production, work, academic knowledges and researches. That is, once these institutions are equipped with laboratories, agricultural experimental areas and various production fields, most of the technicians' and teachers' formation take place in direct contact with production, work and experimental researches. In the socialist society idealized by the Cubans, work is the main column of sustentation and ampliation of the policy of equality, improvement of life quality, economy fortification and articulation of knowledges. This way, technical courses are associated with education, work and production in the creation of the worker, a labor force well prepared in the principles of collective work, in favor of the common well. Moreover, theory and practice became integrating elements of the knowledges in the formation for intellectual and manual work. About this topic, Bermúdez Morris et al. (2014) argues that Cuban ETP teacher must adapt the participation in the work collective to which they incorporate, in which they will have to interfere, bring knowledge, learn the contributions of their colleagues and comprehend the constant transformations that happen in the labor world, learning to subordinate personal interests to labor collective interests, goals and aspirations with joint actions.

This theorist emphasizes that technical and professional education needs teachers with a technic-professional integral culture and with deep domain of their specialties and pedagogy that allows them a certain direction of the technical and professional education (Bermúdez Morris et al., 2014, p. 63). Moreover, Cuban ETP promotes the articulation between the labor world, community, family, school, students and teachers. In what refers to work, students have direct contact with agricultural production, both in practical classes in the various laboratories and in the experimental fields in the same school and also with companies during technical visitations and mandatory supervised internships. These integrated actions between educational institutions and corporations are related "[...] not only with the development of knowledges, basic and technological abilities, but also with rules of social relations, patriotic and moral values, especially love to the country, work and profession, among others." (Abreu Rigueiro and Cuevas

Casas, 2012, p. 2). One of the principles of Cuban education is the integration of technological education, capacitation and training on the conjugation of study and work, theory and practice and relationship between student and profession on the worker's formation.

Cuban technical and professional education (ETP) has already taken its first steps on the integration process by adopting a unique, public, free National Educational System, articulated on the various educational stages. The main integrating category of ETP curriculum is work, which begins to be inserted on the educational process since the first school years and keeps strengthening itself until its consolidation by the technical courses offered by the polytechnic institutes of agriculture and cattle raising. In these courses, students are submitted to an integrating relation between teaching, work and production; in the teaching degree in education, in the specialty of agriculture and cattle raising courses, this action is added and integrated with research and extension. It is important to remember that the teaching degree in education, in the specialty of agriculture and cattle raising course has the objective of preparing teachers to the function of: teaching, researching and guiding, in an educational process that articulates theory and practice and integrates the academic, labor and investigative questions. The subject of investigative labor formation has the objective of integrating the academic, labor and investigative in the professional and humanistic formation. Accordingly to the collective of teachers (E16, fev. 2015), one of the most important achievements was the advance on the interdisciplinary process, which allows them to work in a coherent way, so, when one of the pedagogical formation teachers is teaching a class, even though he is not the titular of the subject, the other also dominates the topic, which means that any teacher is prepared and knows all that is worked in the course. Therefore, there is a conducting thread in this work. There is no island, there a guiding nucleus that orientates, which makes work easy and integrated. In what refers to the Cuban teaching degree in education, in the specialty of agriculture and cattle raising for technical and professional education course, it was said by the teachers: "[...] despite the specific assignments of agriculture and cattle raising have a technical character, professionalizing education doesn't neglect the pedagogical part on the pursuit of the most qualified formation as possible and also on the inverse way of professionalizing, the titular teachers of Mathematics, Physics and others work towards the formation for the careers related to the offered courses" (E17, fev. 2015).

This way, the teacher of professional education not only demands the technical knowledges of the forming specialty, but also the pedagogical knowledges that are needed in order to develop the teacher profession and propaedeutical knowledges. Accordingly to Abreu (2014), Cuban technical and professional education is needed for the insertion of the man in society and integration with labor and also to prepare the future worker in their integration with the productive process. As defended by Martí (2002), work doesn't have the same attributions in all times, and learning the techniques is to put the man in his time's level, and that's an attribution of the educational system. This way, work is seen as integrating element of knowledges in school curriculum. In short, integration and verticalization of technical and professional education in Cuba are done with different institutions, but it doesn't make the process fragmented, once it was foreseen in the pedagogical proposal of all institutions' courses an

progressively higher specialization in the field of agriculture and cattle raising and the work methodology establishes an integrated *praxis* between the University of Pedagogical Sciences and the Polytechnic Institutes of Agriculture and Cattle Raising. In other words, all students of the teaching degree courses necessarily have to develop theoretical and practical activities in direct contact with students, work and agriculture and cattle raising production, in the institutes' context. It is important to highlight that technical and professional education in agriculture and cattle raising also faces difficulties. First, by materials demands and difficulties in the moving process of teachers and students from the university to the institute.

Second, by the transformation of the teaching degree in education, in the specialty of agriculture and cattle raising into one. This is seen by UCP "HAPZ" and IPA - *Villeña-Revolución* teachers as a mistake that causes overcharge in the professional formation of future teachers, once students often have to compensate this during their time in practical courses and internship, performed in the polytechnic institutes. This way, teachers and schools' administrations (E19, fev. 2015; E17, fev. 2015) of Cuban technical and professional education will request the general courses committee a curricular review and the separation of the teaching degree in education, in the specialty of agriculture and cattle raising. On the verticalization between technical and teaching degree courses process in Cuba, these courses are offered by different institutions and, currently, in distant locations. They manage to integrate mainly by the obligation of future teachers in the teaching degree in education, in the specialty of agriculture and cattle raising, courses having to spend part of their formation in practical activities inside the polytechnic institutes. As we can see, individual-collective memory of teachers and schools' administrators support itself in a social framework different of that in the first phase of implementation of Cuban revolution, which counted with financial support of socialist governments of USSR and other countries in Europe, when the revolution was considered successful, including the transformations of educational system.

Conclusion

As observed *in loco*, revolutionary movement, transformation of educational system and comparisons between the before and after 1959 moments are systematically recovered each day by mass communication media (TV, radio, newspapers e *outdoors*), monuments, celebrations and in the educational institutions. Professional education in the field of agriculture and cattle raising is acknowledged as a social patrimony, needed for the assurance of the country's economic and social development. This line of thought inspires not only the building of a society that considers itself agricultural and that needs professional education, but, above all, dialectically feeds the need of keeping Cuban society insisting on the youth formation for work. During the interviews and also in the analyzed documents, one of the most common recurrences is the exaltation of Cuban revolution, establishing a comparison between how it was before, with the dictatorial regime of *Fulgêncio Batista*, and what changed after the revolution: the joys, victories and current concrete situations. This way, memory of a revolution, conquered as a socialist fight, opposite to an exploratory capitalist reality, is passed from one generation to another in the official speeches, in schools, in

social environment, in celebration, monuments and mass communication media. What lasts in this society is a social memory of national identification and belonging to a reality that, although is not the same as before, is still present. One of the important marks of national identity are the revolutionary acts for literacy of Cuban population, once, accordingly to Pérez-García (2014), in the occasion there were over a million illiterates. Interviewed teachers (15) and school administrators (4) of IPA Villeña-Revolución and ISPETP/UCP "HAPZ" remember the taskforce created with the proposal of literating all population. They testify about the Cuban National Literacy Campaign proudly, as we can verify in the following speech of a UCP "HAPZ" teacher, who was a teenager back then: "[...] I was only 12 years-old and I went to Eastern Cuba to take part of the literacy campaign. Everyone, all the people. It was a quite large movement, current teachers, students, older people who, even though were not teachers, all were there available to teach, using the nook created for that end" (E18, fev. 2015).

The movement, in addition to literating over one million people in the year of 1961, by the National Literacy Campaign (PÉRES-GARCÍA, 2014), built a collective memory of fundamental importance for the strengthening of revolutionary, nationalist spirit with socialist principles. A social memory that is based on a historical reality has constituted as a necessary condition for the freedom of Cuban people from illiteracy, both cognitive and political. A society that incorporates in its memory the real socialist principles and values, strongly marked by the presence of José Martí as a national "Apostle" as remembers the Cuban Education minister "[...] to José Martí we owe a deep ideary, which left us ethics, a humanistic conception, as well as an essential key to the comprehension of our Cuban identity [...]. Not by casualty, the historical leader of the Revolution, our Fidel, said that Martí was the intellectual author of the libertarian acts of July 26th of 1953" (Velázquez Cobiella, 2015, p. 15).

At all moments, both in documents as in interviews, there is always a comeback to the thoughts of José Martí. We can observe that the reading of this author's texts are mandatory, in all grades of Cuban education, and constitute into one of the mais bibliographic references for most academic works in the field of Education. The fact is that the social memories of Cuba are anchored in social frameworks that oscillate between the period before the revolution of 1959 and the one after that which, by its turn, show up associated to the educational patrimony, including the technical and professional education in agriculture and cattle raising institutions and the framework of most recent events, delimited by the Russian communism decline in the year of 1989. In this perspective, the formation of teachers for technical and professional education in agriculture and cattle raising and the teaching degree courses that began to be offered in the Pedagogical Institutes for Technical and Professional Education (IPETP) and are currently offered in the Higher Pedagogical Institutes for Technical and Professional Education/Universities of Pedagogical Sciences, are always referred to as one of the essential alternatives for improvement of Cuban economic and social development. In summary, after the 1959 revolution, Cuban educational system has passed by deep transformations, having implemented educational *curricula* that has centrality on the work in all educational stages and built a successful experience in technical and professional education in agriculture and cattle raising, a reference in Latin America and the Caribbean.

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