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Mathematics from teaching and mathematics teaching: fractions in primary school, second half of the 19th century

This text socializes research results that have been developed within a group of researchers around collective work projects. Such projects are interested in historically analyzing changes in the professional knowledge of teachers who teach mathematics in primary school. In particular, for this article, the specific study on fractions was privileged. Cultural studies are used as a theoretical-methodological apparatus, in particular, the concept of school culture is mobilized, considering the school as a producer of knowledge within this culture. From this theoretical positioning, the differences between «mathematics from teaching» and «teaching of mathematics» are made explicit. The guiding question that leads the article can be stated as follows: How to characterize the mathematics of teaching fractions in the second half of the 19th century? The results show the organization of a mathematics from teaching of fractions that changes due to the schooling needs of the decimal metric system.

KEY WORDS: fractions; school culture; mathematics from teaching; teaching of mathematics.

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Conceptions about the Analytic Geometry in the secondary and university Spanish textbooks during the nineteenth century

This article shows the conceptions about the Analytical Geometry held in the textbooks used in Spain during the XIX century. These conceptions are extracted from the presentation of the mathematics concepts in these books. Through the content analysis of ten works we have identified four terms to refer to it (Application of Algebra to Geometry, Analytical Geometry, Determinate Analysis and Indeterminate Analysis. And two conceptions: the first one is to consider it as a method for solving geometric problems by means of Algebra, like the method used to solve arithmetic problems, but instead of operating with quantities operating with segments, the second one as a method of solving geometric problems by means of Algebra, using coordinate systems.

KEY WORDS: Analytic Geometry; Conceptions; History of education; Textbooks

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Mathematical activities of Francisco Ferreira de Vilhena Alves in Pedagogical Journal *A Escola* (Belém/Brazil) between 1900 and 1905

This article discusses on how the elementary mathematical knowledge of primary education is addressed in the school activities proposed by Francisco Ferreira de Vilhena Alves in the Journal *A Escola: Revista Oficial de Ensino*, between 1900 and 1905, the period of its circulation. The research took as an empirical reference the digitized archives of the referred journal, which were interpreted in the light of the concepts of *disciplination* and *disciplinarization*, teachers' professional knowledge (mathematical knowledge to teach and to teach), expert and expertise. The results point out the importance of Francisco Ferreira de Vilhena Alves work as an

expert in the elaboration and publication of support activities for teachers, mainly for Primary Education and *Escola Normal do Pará* at that time.

KEY WORDS: mathematical knowledge; pedagogical journal; expert; Primary school; History of Mathematic Education; Vilhena Alves.

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Teacher knowledge in times of curricular change. The case of the Portuguese Telescola (1965-1967)

This article seeks to understand the ways in which the communication of mathematical ideas was carried out in the implementation of Telescola in Portugal during the years 1965/66 and 1966/67 which, in addition to the educational use of television, also incorporates the curricular innovation of Modern Mathematics. This article investigates the mathematical knowledge expressed in documentation associated with the initial two academic years of Telescola in Portugal (1965/66 and 1966/67). We will try to identify not only the common knowledge of the mathematical content, but especially its specialized knowledge. We will also seek to determine how this knowledge evolved as a result of the introduction of modern mathematics. The study is based on a content analysis of the scripts published in the *IMAVE Bulletin*, complemented with interviews with the teacher responsible for the televised classes.

KEY WORDS: teacher's professional knowledge; History of Mathematics Teaching; Modern Mathematics; educational television; Cultural History.

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Aditive and sustractive problems in Rubio notebooks (Spain)

Rubio arithmetic notebooks have been widely used in Spain for learning basic arithmetic operations since their appearance in 1959. In this work, six periods have been identified in the editions of these notebooks and the problems of adding and subtracting that they propose are studied. To this end, the categories formulated by G. Vergnaud for the conceptual field of additive structures are used. Problem notebooks from the 1978 edition (epoch 2) are analysed, both verbal and graphical problems, noting that they are of the first three types, among the six formulated by Vergnaud. The evolution of these notebooks is studied up to current marketed editions: there is continuity in the problems proposed and the changes, apart from those modified to adapt to euro currency, affect the design, not the content.

KEY WORDS: Rubio notebooks; addition and subtraction problems; additive situations; Gérard Vergnaud; Primary Education.

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A history of the first Latin American postgraduate program in mathematical education

The study reported here offers a version on the history of the Master's program in Mathematics Education of the Pedagogical Institute of Caracas, Venezuela (MEM-IPC), founded in 1974 and currently in force. Some of the details of the creation of said program are described in order to offer arguments that show that this was the first of the postgraduate programs in Mathematics Education created in Latin America.

KEY WORDS: History; Mathematics education; Scientific Field; Mauricio Orelana.

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Arrival of the ideas of the Didactic of Mathematics in France to the official documents of the Municipality of Buenos Aires

Given the inexistence of historiographic references about the arrival of the Didactics of French Mathematics in Buenos Aires, a search is made for the actors belonging to that time space and they are contrasted with documentary sources. The results indicate that this didactic theory entered Buenos Aires through a triangulation process in France, Mexico, Buenos Aires, at the end of the 1980s, becoming research groups. The implementation of didactic situations, of the style of those used by Brousseau (Brousseau, 1986) during the investigative processes, were a consequence of the assembly of investigation teams, whose effect was the writing of official documents and the Curriculum Design of the City of Buenos Aires. Methodologies corresponding to Present History are used for the analysis, following the methodological recommendations of Arostegui (2004) and Valente (2007) with respect to the History of the Teaching of Mathematics.

KEY WORDS: history; teaching; mathematics; French Didactics; Buenos Aires.

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Multilingualism and plurilingualism: language use and education, teaching and proficiency as social and cultural assets in the dutch Golden Age

Plurilingualism and multilingualism are terms that are often indifferently used. Yet they reflect two distinct practices and dimensions of social and cultural life, i.e.: the individual ability to master and use several languages at the same time, and the coexistence of different languages at a variety of levels and in various settings in a given society. Both reflect different forms of elasticity of the social fabric, and flourish in times of economic prosperity, mass migration and global cultural contacts, whereas they decline in times of contraction and nationalism. As a period of growth, mass migration and cultural flourishing, and of expansion of the educational institutions and opportunities, the Dutch Golden Age (c. 1580-1750) is an excellent observatory for these phenomena, of which I shall sketch a picture, insisting in particular on the cultural aspects of language, such as language acquisition and teaching, language use, and the social meanings of language.

KEY WORDS: plurilingualism; multilingualism; language teaching; language hegemony; universal language.

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Educational Revolution and Italian Humanism: *De ingenuis moribus et liberalibus adolescentiae studiis* of Pier Paolo Vergerio

At the beginning of the fifteenth century the first pedagogical treatises aimed at drawing the basic educational lines for the younger generation began to be published in Italy. The quality and quantity of such treatises is due to the global change occurred at the end of the Middle Ages into Italian society: no longer men look to the afterlife but to the *vita activa* and the concrete life of the cities, ruled by *élites* and middle-class merchants. This change of perspective requires that those who rule are educated and trained in accordance with the moral values expressed in the works of Greek and Latin classics.

The first educational treatise is *De ingenuis moribus et liberalibus adolescentiae studiis* written by Pier Paolo Vergerius, a distinguished Italian humanist lived between 1370 and 1444. The work highlights the roles both of the family and the tutor to form the character of teenagers and at the same draws a modern and effective educational curriculum that will be taken up by all humanists of the later era, becoming a model to imitate and to follow.

KEY WORDS: Humanism; treatise; education; Pier Paolo Vergerio; curriculum.

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Moral education in the first ages through the Spanish theatre of the eighteenth century and first half of the nineteenth

In Spain in the eighteenth century and much of the nineteenth century there was an extraordinary interest in the education of the youngest, one of the groups in which the enlightened placed their hopes of the long-awaited renaissance of the homeland. In this sense, the theatre, due to its wide effect and didactic power, became a platform of unequalled value for the transmission and inculcation of new

ideas and pedagogical currents in vogue at that time. Although this aspect has already been studied by literary criticism, it has generally been done in relation to brilliant theatrical works of that time, such as *El sí de las niñas*, by Moratín. It is necessary, therefore, to examine other perhaps less well-known theatrical texts but which also clearly show how the theatre contributed to promote a moral reform of the Spanish youth.

KEY WORDS: teatro; literatura; educación moral; jóvenes; siglos XVIII y XIX.

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Italian Catholic pedagogy: between positivism and neo-idealism. Notes on his presence in Spain (1870-1968)

En este artículo los autores revisan la evolución de la pedagogía italiana desde la perspectiva de la tradición católica, desde los tiempos del *Risorgimento* en el siglo XIX hasta 1968. Con este objetivo, se dibujan las grandes líneas del pensamiento pedagógico italiano sobre el peso de la herencia católica que se sitúa en un término medio entre el positivismo que se desarrolló en el tránsito del siglo XIX al XX y el neoidealismo de Giovanni Gentile que marcó el rumbo de la filosofía transalpina durante las primeras décadas del siglo pasado, con importantes resonancias en la reforma educativa fascista. Después de dibujar este mapa conceptual e intelectual, el artículo fija su atención en tres referentes de la pedagogía católica para España como son la educación salesiana de san Juan Bosco, presente en nuestro país desde fines del siglo XIX; la influencia de la neoescolástica que a través de la orientación psicopedagógica de Angelo Gemelli caló en la Universidad Católica del Sagrado Corazón de Milán, fundada en 1920 e inaugurada el año siguiente, y, por último, y después de la caída del fascismo, en el neoespiritualismo que a través de autores como Michele Federico Sciacca puede entenderse como la evolución natural del neoidealismo hacia posiciones más creyentes y confesionales.

KEY WORDS: theatre; literature; moral education; youth; 18th and 19th centuries.

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The Montessori method in the Spanish early childhood education: lights and shadows

This article analyses the introduction, dissemination and application of Montessori pedagogy in Spain in three stages. It was during the first period (1914-1936) when many of her works were published in Spanish, the first experiences took place and Montessori herself spent years here. In the second stage (1936-1975), after two decades of frontal rejection of the entire New School, Montessori found her place. And finally, in the third stage, coinciding with democracy in Spain, a certain diversity and even confusion regarding the application of its methods can be identified. Montessori's life and works have been hidden by hagiographic writings. It is necessary to approach her taking into account her context, education, beliefs and interests. Only by doing so will it be possible to distinguish those who apply her theories from those who are just trying to sell something different on her name.

KEY WORDS: Montessori Method; Educational History; Early Childhood Education; Educational Practices; Spain.

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Milani's pedagogy in Spain and Latin America

A survey is conducted here on pedagogy –rather than didactics– as practised in Barbiana School. *Lettera a una professoressa* (1967) has been translated into more than 60 languages, the finest English versions in Penguin and Random House: *Letter To A Teacher*. Two are the main insights of the *Letter*: compulsory school should make up for the lacks of the deprived, those bereft of the word that sets us equal. As for now, school harms the winners, for they won't look into the better parts of humankind. Such a radical criticism scares away those promoting the competitive, liberal school. Many academics ignore Barbiana to reject it, or just come to read in the School a remedy for dropouts or schooling failure. A list of university lecturers and professors, printing houses and journals is provided collecting those inspired by Barbiana and setting Lorenzo Milani on top of the contemporary pedagogy scene. Luckily enough, those grassroots schools moved by the Letter are in larger numbers.

KEY WORDS: Barbiana pedagogy; didactics; to give the floor to the mute; compensatory education; competition-driven education.

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School musical education in Portugal: the subject of Choral Singing in the First Republic (1910 1926)

This research has the aim of analyzing the way of which the subject of Choral Singing was configured on the curriculum of the Portuguese school, during the First Republic. It is a bibliographic research endorsed on the theoretical premise of Scholar Culture. It was through the Decree No. 4650, of 14 July 1918, that the subject of Choral Singing started to be a part of the Lyceum. The goal was to contribute to the education of the voice, the aesthetic feeling and, mainly, the development of nationalism. The same Decree that originated the subject of Choral Singing also established the creation of an Orfeão in the educational institutes. The Orfeões became ways of diffusion of republican ideas. Its purpose was not to attribute an educative role to the subject of Choral Singing on the shaping of the mentees, but to spread the ideology of the current government.

KEY WORDS: school subject; pedagogical manual; Choral Singing; First Republic; Portugal.

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A survey paralyzed in time: the lesson preparation notebook

In 1932, the journal *Escuelas de España* published the answers of twenty teachers to a survey about the «cuaderno de preparación de lecciones». It reported that they would later share the analysis and conclusions of the study. The temporary disappearance of the journal meant that this data was not analysed. In this proposal, being aware of the evolution that the preparation notebooks underwent, we give continuity to the research. The results show the value that the teachers surveyed gave to the notebooks as a resource that favoured the autonomy and empowerment of teachers. At the same time, almost predictably, they feared that they would be used as an instrument to control the teacher's activity.

KEY WORD: lesson preparation notebook; *Escuelas de España*; pedagogical press; educational planning; teaching programme.

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Adult schools in the early twentieth century: legislation, curriculum and justification. Particular case of its scope in the province of Orense

The educational politics of beginnings of 20th century in Spain concerned for eradicating the problems of the illiteracy and extend the education to the population. The schools of adults and adults were a necessary solution for which did not attend to the primary school. For the women was a big opportunity since had a scarce training. Now well, they could the schools of adults allow them the way to the emancipation? To know it reviews the legislation, the curriculum and analyze the opinions of the period on the need of his implantation to deduce if the schools of adults supposed an opportunity to change the status of the women or, simply, involved the permanence of his social condition.

KEY WORDS: women; schools adults; legislation; curriculum; Ourense.

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The Technical Office of School Construction. Documents in the centenary of its creation (1920)

This year marks the centenary of the creation of this public body, framed within the Ministerio de Instrucción Pública y Bellas Artes. His work is highly significant and enduring. Significant, because from his architecture studio a large number of school buildings would be illuminated, which represented a drastic and necessary change in the space in which public primary education was located in Spain, and lasting, since many of his works still remain today standing, enjoying the admiration and consideration of citizens, still housing within its walls schools or other educational institutions. Here essential documents are rescued to know and understand the history of school buildings in Spain.

KEY WORDS: Spain; School Buildings; Technical Office; Ministry of Public Instruction.