

Quantitative sources for the history of education

Vincent Carpentier

Institute of Education, University of London

This paper proposes a critical reflection on the use of quantitative sources for the historian of education. It identifies and discusses key promises and challenges related to the construction and interpretation of historical statistics in education, drawing on a number of British and some French historiographical examples. Ultimately, the article encourages, where possible and appropriate, a combination of quantitative and qualitative methods in order to identify trends and patterns in education and facilitate their contextualisation in terms of processes and meanings.

Introduction

This article on challenges and opportunities for the use of quantitative sources in history of education is divided into six sections. Following a brief introduction the second section presents some key historical statistics on education and considers both possibilities and limitations associated with their construction, selection and processing and their use by historians of education. Section three argues that the use of quantitative data may lead to interesting developments in the historical understanding of education by permitting a contextualisation through the identification of patterns and structure, while the following section shows that comparisons with other data may promote dialogue with other historical fields, for example those of demography, economics and political history. The fifth section focuses on how quantitative data may be used with reference to theoretical and policy developments. In conclusion the value of a combination of methods, rather than a complete integration, is discussed.

Key resources in education

“Historical sources encompass every kind of evidence which human beings have left of their past activities”.¹ Quantitative data provide one important source of evidence of those past activities. Although it is important to keep in mind the specific nature of quantitative sources, the promises and problems associated with their use are not too dissimilar from those of qualitative sources such as oral and written testimonies, paintings and photographs.

This article is mainly set within a British context with reference to quantitative sources for the funding and development of the public education system in the nineteenth and twentieth centuries. While some of the issues addressed below may well be specific to these particular data, it is arguable that others will be of wider significance in respect of consensus and controversies associated with the use of quantitative data in general.

Some examples of the development of official statistics on education

One of the most significant characteristics of the development of quantitative resources in British education is its connection with the State. Although statistics on education preceded government intervention, the latter encouraged a more formal and systematic collection of quantitative data in order to identify need and subsequently to monitor the construction of a national system of education. This led to a great improvement of the statistical data available to historians but raises important issues about their interpretation.

Statistics from the inspection report: Evaluation and control

In 1833 the parliamentary vote of an annual grant for education paid by the Treasury announced a gradual shift from the episodic release of data by appointed commissions to the production of regular statistics. The real impulse followed the creation of the Committee of the Privy Council on Education in 1839. The Committee supervised the use of public resources and initiated a formal process of inspection of schools run by the British and Foreign School Society (non conformist) and the National Society for Promoting the Education of the Poor in the Principles of the Established Church (Anglican). The process of monitoring the use of the grant and the number of inspectors would then be extended to the societies associated to the Roman Catholic

¹I am most grateful to Richard Aldrich, Peter Cunningham and Jane Martin for their comments on earlier versions of this paper.

Tosh, J. *The Pursuit of History*. London: Pearson, 2006: 30

Schools, Wesleyan Schools and later Board Schools following the 1870 Elementary Education Act.²

Gordon and Lawton noted that although the national societies had inspection mechanisms already in place the systematisation of an inspection system emerged in the 1840s.³ This new system was structured around three principal goals: checking the use of public funds (accountability), providing information on the success or otherwise of the educational system, and advising those responsible for the running of establishments.⁴ The grant therefore conditioned the nature of the inspection process and led to a strong reliance on quantitative data. This was made explicit in the titles of these reports: *Statistics of Inspection of Annual Grant Schools* which were presented to the Privy Council on Education and published by Parliament under the category *Accounts and Papers*.⁵

The grant shaped the rationale behind the inspection reports which are structured around financial questions. Where do school resources come from? How are they spent? With what results? As a result, these reports offer valuable primary sources on the origins of the schools' financial resources (fees, local and central government, endowment and voluntary contributions) and their destinations (salaries, books and apparatus etc.). The reports also include data on the evaluation of the effectiveness of grants with regard to pupil enrolment, attendance and attainment. They also include data about staffing levels and structures. All these data were disaggregated according to the types of schools, both denominational and board.

Statistics from the Royal Commissions: investigation, persuasion and recommendation

The reports of Royal Commissions provide another important source of quantitative data. Royal Commissions were used as a way of setting scenes, evaluating the state of education and demonstrating the need for reforms.⁶ They can be seen as complementary to the annual reports

² The first legislation for compulsory elementary education in Britain and the establishment of local School Boards. Also known after its originator, W.E. Forster, as the Forster Act.

³ Lawton, D. and P. Gordon. *HMI*. London: Routledge, 1987: 5.

⁴ *Ibid.*, 9.

⁵ British Parliamentary Papers, Accounts and Papers, *Statistics of Inspection of Annual Grant Schools in England & Wales (1875-1902)*. London: Her Majesty's Stationery Office.; British Parliamentary Papers, Accounts and Papers, *Statistics of Inspection of Annual Grant Schools in Scotland (1875-1902)*. London: Her Majesty's Stationery Office. See Cockton, P. *Subject Catalogue of the House of Commons Parliamentary Papers 1801-1900, Vol 3*. Cambridge: Chadwyck-Healey, 1988.

⁶ McCord, N. *British History 1815-1906*. Oxford: Oxford University Press, 1991: 196-200; Morton, A. *Education and the State from 1833*. Richmond: Public Record Office, 1997: 47-48.

but had a different mission. They were not conceived as parts of a continuous process of evaluation like the inspection reports but rather as specific investigations of a particular level, area or aspect of education. Examples include the Newcastle Commission of 1858-61 on elementary schools, the Clarendon Commission of 1861-4 on public schools, the Taunton Commission of 1864-7 on endowed schools and the Samuelson Commission of 1881-4 on technical instruction.⁷ These Royal Commission Reports contain more precise statistics that are used to demonstrate their findings and their propositions, statistics that were subsequently employed by governments and others to justify educational policies, including major reforms.

For example, the whole of Part VI of the first volume of the 1861 Newcastle Commission report (six volumes in all) is devoted to statistical tables (pp.553-693). The statistics derive from annual inspection reports but also include original data collected by assistant commissioners from private schools which were not funded by the State and therefore not inspected. Other data about gender and social class which were not collected regularly by inspectors are also made available in the report.

Secondary sources: integration, independence and information

The inclusion of educational statistics in secondary sources has been marked by two characteristics. The first is a closer integration of educational data with other socio-economic statistics through their inclusion in statistical abstracts. The second is a trend towards an autonomisation of statistical data in education in independent volumes from the 1960s onwards.

Interestingly, from the 1840s onwards, statistics from annual education reports were included in official statistical abstracts designed to offer a global quantitative picture of schooling in the UK. The inclusion in the mid nineteenth century of a section dedicated to education in the *Statistical Abstract for the UK* suggests a growing recognition of the socio-economic role of education. It may also suggest that educational data were not only used as tools of inspection but also as data for policy makers, educational researchers and presumably for a wider audience.⁸ Alongside the traditional economic statistics (imports and exports, colonies, prices and wages, employment etc.) and vital statistics (such as births, marriages and deaths), new data on human development were

⁷ Royal Commissions came to be known by the name of their leading commissioner, public figures who espoused a particular interest in the field of enquiry.

⁸ Central Statistical Office, (1849-1938) *Statistical Abstract for the United Kingdom*. London: Her Majesty's Stationery Office.

progressively included (like education, health, poverty, social security). This trend was confirmed and indeed accentuated with the release in 1945 of the *Annual Abstract of Statistics for the United Kingdom* which replaced the *Statistical Abstract for the UK*.⁹ This new publication coincided with the rise of the welfare state and placed even greater emphasis than its predecessor on data regarding social activities, especially education. This statistical integration may be attributed to a growing appreciation of connections between the educational system and the socio-economic sphere.

Paradoxically, another significant evolution in the production of secondary resources was a movement of partial autonomisation of educational statistics in the early 1960s illustrated by the release of statistical publications entirely devoted to education. Initially, these new volumes were specific to England and Wales, Scotland and Northern Ireland¹⁰ but became aggregated in a single UK volume in 1967.¹¹ These volumes offer a comprehensive and consolidated quantitative picture of the educational system as a whole. Their structure is organised around key themes of the educational system: expenditure, enrolment, qualifications and destinations of leavers, at the aggregated level and ready for use. At the practical level, such figures present a highly usable set of statistics.

Similar evolutions are to be found with respect to higher education statistics. This began with data concerning the public grant distributed from 1919 by the University Grants Committee. Higher education statistics were also integrated in statistical abstracts cited above. Nevertheless, transitions from the University Grants Committee through the University Funding Council to the Higher Education Funding Council for England also saw the development and autonomy of higher education statistics¹² and the creation of the Higher Education Statistical Agency. In the

⁹ Central Statistical Office, (1938-1968) *Annual Abstract of Statistics*, London: Her Majesty's Stationery Office.

¹⁰ Ministry of Education (1961-1995) *Statistics of Education*. London: H.M.S.O.; Government of Northern Ireland (1965) *Public Education in Northern Ireland*. Belfast: Her Majesty's Stationery Office; Ministry of Education, (1965-1995) *Statistics in Education in Wales*. Cardiff: H.M.S.O.; Scottish Educational Department (1980-1988) *Scottish Education Statistics*, Edinburgh: H.M.S.O.

¹¹ Government Statistical Service (1967-1998) *Education Statistics for the United Kingdom*. London: H.M.S.O.; Government Statistical Service (1999-2000) *Education and Training Statistics for the United Kingdom*. London: H.M.S.O.

¹² University Grants Committee (1920-1965) *Returns from Universities and University Colleges in Receipt of the Treasury Grants*. London: Her Majesty's Stationery Office; University Grants Committee (1966-1979) *Statistics of Education, Vol. 6, University statistics*. London: Universities' Statistical Records; University Grants Committee (1980-1988) *University statistics*. London: Universities' Statistical Records; University Funding Council (1989-1994) *University statistics*. London: Universities' Statistical Records; Higher Education Statistics Agency (1995-current) *Resources for Higher Education Institutions*. Cheltenham: Higher Education Statistics Agency Limited;

1960s separate volumes of higher education statistics were produced. Some volumes focused on students and staff enrolment, others on funding issues. Devolution led to separate volumes for Scotland and Wales.

This overview shows both change and continuity in official educational statistics. Accountability and value for money have been constant, as have the evolving relationships between the financial dependence of the educational system and its functional autonomy.

Over time inspectors' reports, statistics and bureaucratic expertise began to play a strategic role not only in the development and monitoring of the expanding public educational system but also as an instrument in the exercise of state power.¹³ Quantitative data should therefore be considered not only as the illustration or evidence of the construction of the education system, but also as active instruments of planning, control and monitoring of such construction: therefore they are informative but not neutral.

Issues of construction, omission and reliability: a test of confidence

Quantitative data are social constructs and their use as historical sources necessitates the formulation of a series of questions about their origin and destination that highlights their strengths and limitations. Where do these statistics come from? Who produced them and for what purpose(s)? Which methodologies were used? What do they tell us -- or don't tell us? Can they be trusted?

Availability: the semi public system

It should be noted that the availability of quantitative data remains a serious constraint. Historical statistics mostly focus on State education and as a result tend to neglect other drivers of education. Although data on voluntary schools receiving grant are available, there are only episodic statistics on private schools which were independent from the State (Dame Schools, Charity Schools, Sunday schools...). Apart from Bamford's estimation of British 'public school' enrolment,¹⁴ there is no centralized and formal system of statistical information on independent

Higher Education Statistics Agency (1995-current) *Students in Higher Education Institutions*. Cheltenham: Higher Education Statistics Agency Limited.

¹³ Miller, P. "Historiography of Compulsory Schooling: What Is the Problem?." *History of Education* 18, no. 2 (1988): 136.

¹⁴ Bamford, T.W. *Public School Data. A Compilation of Data on Public and Related Schools (boys) mainly from 1866*. Hull: Institute of Education, University of Hull, 1974.

schools until the creation of the I.S.I.S. in the early 1980s.¹⁵ It is clear that the exclusion of such schools omits a substantial proportion of total school enrolment and as a result prevents accurate evaluation of the real extent of the evolution of the educational sphere. Laqueur regrets that most research and data relate to the supply of education and not demand from families that led to the creation of small private schools.¹⁶ Another important concern is that existing quantitative data may offer a sufficient picture of formal schooling (at least in the State sector), but far less information on the significant and undoubtedly widespread availability (let alone the quality) of informal education.

Despite these important reservations, there are still good reasons to see the glass half full rather than half empty. Available quantitative sources offer a satisfactory representation of the construction of the semi-public system of education which includes state schools as well as grant-aided voluntary schools and universities. The structure of the reports offers a frame of representation that corresponds to their use as instruments of inspection in relation to the grant. The statistical materials offer a quantitative picture that illustrates some of the main areas of educational policies like funding, access and attempts to define to a certain extent the output. Statistics on finance include the amount of funding distributed according to its origins (funder and provider institutions), its location (school, regional and national), its destination (by level from nursery to higher education) and its economic nature (wages, capital etc.). Other crucial data include the level and characteristics of enrolment (age, gender, social class) and staff (pupil-teachers, uncertificated and certificated teachers). Data on achievement are also available (school leavers, truancy, diplomas). These data have the great advantage of allowing the construction of synthetic indicators (spending per pupil, pupils per teacher etc.).

Accuracy and reliability

Educational statistics are social constructs whose collection may be dependent on a various number of factors, for example political agendas, practical reasons and specific methodologies. These factors, together with potential omissions, approximations or delusions should lead users of statistics to question their reliability and validity.

¹⁵ Independent Schools Information Service, (1980-1995) *Annual Census, Statistical Survey of Independent Schools*. London: I.S.I.S..

¹⁶ Laqueur, T.W. "Working Class Demand and the Growth of English Elementary Education, 1750-1850." In *Schooling and Society, Studies in the History of Education*, edited by L. Stone. London: The Johns Hopkins University Press, 1976: 193-203.

For example, Maclure emphasises how the Newcastle commissioners recognised that the report includes statistics based on enquiries and on estimates of doubtful value.¹⁷ Some of the factors indicating a need for caution are listed in Marcham's reflections on the report: some societies did not wish to, or could not respond to the survey for practical reasons (for example where outdated information from the census of 1851 had been used as the basis for distributing questionnaires); the six month period was too short for such a task; teachers were not keen on responding to a lengthy questionnaire; some cities were excluded.¹⁸ One can also add the fact that the number of inspectors was very low compared to their task and that some schools may have hidden some information. The Commissioners admitted that their data on private education were not exhaustive but added that they furnished proportions and averages representative of the rest of the country.¹⁹

Statistical categories and their meanings

The historical overview points at substantial and significant changes in the way quantitative data on education were collected and processed. Statistical tables included in documents or reports should be seen as parts of an evolving frame rather than a stable structure. Lindblad's claim that "statistical reports and statistical data can be regarded as a way to perspectivise education – conditions and processes, as well as outcomes"²⁰ should therefore be a crucial concern for any historical or comparative study. This raises important questions about the consistency of the data and whether indicators measure the same thing over time. Changes in statistical categories or methodologies may not only reflect changes in convention but also real changes on the ground in the activities they are supposed to measure.

Statistics must be consulted with a clear view of what these categories meant at the time and to which kind of education they refer. Comparing historical data from different time periods involves a clear perception of their meanings within the context of their production. For example, it is necessary to keep in mind the differences between elementary and primary levels of

¹⁷ Maclure, S. *Educational Documents: England and Wales 1816 to the Present Day*. 5th ed. London: Methuen, 1986: 71.

¹⁸ Marcham, A. J. "Lies and Statistics: Note on the Newcastle Commission." *History of Education* 9, no. 3 (1980): 229-231.

¹⁹ British Parliamentary Papers. *Newcastle Commission. Report of the Commissioners Appointed to Inquire into the State of Popular Education in England, Volume 1*. 1861: 667.

²⁰ Lindblad, S. (2001) "Education by the Numbers: on International Statistics and Policy-Making." Unpublished paper presented at the conference "Travelling policy / Local spaces: Globalisation, Identities and Education Policy in Europe". Keele, UK, 27-29 June.

education, the moving borders between further and higher education as well as the distinctions between the institutions of higher education (universities, colleges, polytechnics etc.). Such caution is also crucial for trans-national analyses.²¹

Changes in statistical categories and their meanings are a legitimate source of anxiety for historians. At the same time, historians are well equipped to deal with this issue because they understand the context in which these data were produced. This may lead them successfully to differentiate those changes which are due to the way statistics are produced, from those which reflect real transformations on the ground. Szreter *et al.* present the task of contextualising categories in relation to population studies.²²

This reminds us once again that statistical data are constructs and must be handled with care. The expertise of the qualitative historian is crucial here as a collector but also a selector of data. The understanding of statistical data implies an exploration of the context of their construction and their destination. Are they primary or secondary data? Who produced them? Who commissioned them and why? What was their impact at the time? This need for contextualisation of data production implies a strong reliance on qualitative history which would typically strengthen confidence in the data but may in certain cases lead to identification of errors, approximations or in the worst case manipulations.

Basic use of a quantitative history of education: patterns and structure

In spite of these constraints, the use of quantitative sources has the potential to refine the study of historical changes and continuities in education. The analysis of quantitative data may contribute to the identification of patterns and structures which could reinforce or sometimes challenge traditional interpretations of the historical expansion and democratisation of education.

Looking for patterns

Aydelotte argued that “the principal value of quantification for the study of history, stated in the simplest terms, is that it provides a means of verifying general statements”.²³ Such a goal should

²¹ Waldow, F. “The Suggestive Power of Numbers. Some Remarks on the Problem of the Accuracy of Quantitative Indicators in Comparative Historical Research.” *Historical Social Research* 26, no. 4 (2001): 125-140.

²² Szreter, S.; Sholkamy, H., and A. Dharmalingam. *Categories and Contexts: Anthropological and Historical Studies in Critical Demography*. Oxford: Oxford University Press, 2004.

²³ Aydelotte, W. O. *Quantification in History*. London: Addison-Wesley, 1971: 39.

not be seen as a systematic and hostile search for quantitative data in order to put history to the test but rather as an opportunity to offer additional evidence in order to complement existing historical interpretations. Indeed, the problems associated with the construction of statistics show that quantitativists need qualitative sources in order to assess their data. Therefore the effort of verification works both ways and there should be a search for synergy rather than competition between words and numbers.

Quantitative sources offer an opportunity for historians of education to identify trends and patterns, and so complement their historical account of a particular event. In some cases, this could produce a challenge to a traditional Whiggish²⁴ political history of education based on institutional and legislative landmarks. Comparing and contrasting qualitative and quantitative sources has the potential to refine historical analysis of the formation and implementation of educational policies. What was the impact on the ground of any given piece of legislation? Did the announced policies impact on funding and enrolment and funding per pupil, for example? Did the implementation of payment by results following the 1862 Revised Code lead to cuts in funding? What was the impact of the Forster Act²⁵ on enrolment and budgets after 1870?

For example, Brian Simon suggests that the most important period of transformation in education was 1850-1870. Carpentier's recent study has shown that fluctuations of public expenditure on education were influenced by long economic cycles, suggesting that educational progress was not as linear as traditionally stated by political and legislative interpretations of educational history.²⁶ A closer look at the figures suggests that the greater increase in funding took place during the 1870s-1890s. This period corresponds to the first great depression where public educational resources were deployed as an attempt to use overaccumulated capital to restore the condition of economic growth. Simon is right to argue that the preparation for political change was crucial during the 1850s and 1860s but its implementation through additional public funding was later.

There has been much interesting quantitative analysis of specific areas, institutions and policies. For example a valuable combination of quantitative and qualitative data was mobilised around the debates on the 1862 Revised Code's traditional representation as a way of reducing

²⁴ Ozga, J. *Policy Research in Educational Settings*. London: Open University Press, 2000: 116.

²⁵ See Footnote 2

²⁶ Carpentier, V. "Public Expenditure on Education and Economic Growth in the UK, 1833-2000." *History of Education* 32, no. 1 (2003): 1-15.

expenditure. In a financial study of public spending on education in the 1860s, Morris concluded that the reduction of public resources in fact *preceded* the introduction of the Revised Code.²⁷ This was contested by Marcham who showed that Lowe's introduction of payment by results was also about saving on the grant.²⁸ Fletcher's criticisms of Marcham were interesting, as the debate is organised both around actual figures of funding and around questions of Lowe's motive and intentions.²⁹ For an earlier period, Mason's analysis of the expenditure of the Committee of Council on Education during the 1840s told a story of increasing resources under Kay-Shuttleworth's direction,³⁰ and for the following century Garner's financial examination of school meals from the 1944 to 1980 offered a perfect illustration of the need to establish the whole picture of education to include the link between declining expenditure and the nexus of central and local government.³¹

An analysis of particular levels of enrolment and funding according to its destination (wages, investment) and origins (public/private, central/local) may be a way for contextualisation of policies or eras. This could also lead to comparisons between different levels of education. Does a study of special schools, for example, take place in a time of increasing funding towards education in general? What were the differences in spending between the various levels of education? Do they substitute for one another or evolve all together?

Expansion and democratisation: structure and voices

Quantitative sources contribute not only to the identification of patterns of educational expansion but also to reveal its structure and the characteristics of its actors. This is an important response to overcome criticisms of the traditional history of education's heavy focus on the elite rather than on the masses. The 2005 History of Education Society Conference in Birmingham acknowledged a need to intensify examination of the historical process of inclusion and to encourage "historians

²⁷ Morris, N. "Public Expenditure on Education in the 1860's." *Oxford Review of Education* 3, no. 1 (1977): 3-19.

²⁸ Robert Lowe was Vice President of the Committee of Council on Education 1859-64.

Marcham, A. J. "The Revised Code of Education, 1862: Reinterpretations and Misinterpretations." *History of Education* 10, no. 2 (1981): 81-89.

²⁹ Fletcher, L. "A Further Comment on Recent Interpretations of the Revised Code, 1862." *History of Education* 10, no. 1 (1981): 21-31.

³⁰ James Kay Shuttleworth was Secretary to the Committee of Council on Education 1839-49.

Mason, D. M. "The Expenditure of the Committee of Council on Education." *Journal of Educational Administration and History* 17, no. 1 (1985): 28-41.

³¹ Garner, D. "Education and the Welfare State: The School Meals and Milk Service, 1944-1980." *Journal of Educational Administration and History* 17, no. 2 (1985): 63-68.

of education to consider and explore the impact of class, race, gender and disability on education policy, practice and life experience”.³² Quantitative sources may be useful in identifying what separates the processes of expansion and democratisation and in engaging with the various research programmes that seek to retrieve lost voices from the past.

On the one hand, statistics may be part of the problem as the lack of quantitative data may reflect low consideration for gender, social class, disabilities or race issues at the time. On the other hand, it may also be part of the solution as inspection reports and other statistical documents include various data on enrolments and expenditures which are distributed according to gender, social class, race and religion. Some sociologists, in particular from the political arithmetic tradition, have already taken the opportunity to use historical data to support their ambition to develop a social accountability.³³ However, they have been criticised for thinking rather about structure and neglecting processes and identities, and, according to Ball, for “exclusively focusing upon the inputs and outputs of education and neglecting and, indeed, methodologically unable to access, the processes of educating”.³⁴ There may be here important synergies with historians of education to bridge structure and processes. Below are some examples of how a reasoned use of quantitative historical sources may contribute to explore the historical process of enrolment expansion in relation to social class, gender, disabilities and ethnic minorities.

Social class

Problems of defining social class mirror problems of their quantitative evaluation. That is true now and was true in the past. Simon’s interpretation of history of education and social change led him to consider social structure and to have a strong reliance on statistics about enrolment and funding amongst others using substantial statistical appendices which convincingly support his argument about social class.³⁵ Sanderson claimed that “among the most insightful of the more quantitative approaches is that of social mobility”.³⁶ An illuminating example is Dyhouse’s

³² Myers, K., Grosvenor, I., and R. Watts. “Education for All: Papers from the 2005 Conference of the History of Education Society (UK).” *History of Education* 35, no. 6 (2006): 613-617

³³ Lauder, H., Brown, P., and A. H. Halsey. “Sociology and Political Arithmetic: Some Principles of a New Policy Science.” *The British Journal of Sociology*, 55, no.1 (2004): 3-22.

³⁴ Ball, S. *The RoutledgeFalmer Reader in Sociology of Education*. London: RoutledgeFalmer, 2004: 3.

³⁵ Simon, B. *The Politics of Educational reform 1920-1940*. London: Lawrence & Wishart, 1974; Simon, B. *Education and the Social Order 1940-1990*. London: Lawrence & Wishart, London, 1991.

³⁶ Sanderson, M. (2005) *The History of Education and Economic History*, ESRC Seminar Series: Social Change in the History of Education, University of Exeter, 4 March.

quantitative examination of university enrolment during the inter war years which has shown that social democratisation was higher than previously thought. Interestingly, Dyhouse created her own primary sources by sending a questionnaire to people who were students at the time and were asked retrospectively to evaluate their social origins according to their parents' occupations.³⁷ Despite the lack of explicit reference to a category called social class, there is the possibility of using a proxy for the socio-economic background of pupil and students. Until the 1944 Act, attendance at elementary schools mainly relates to working class pupils since enrolment was defined in the 1870 Act as those living in housing below a certain value. This could provide a historical lens to sociologists' work on class strategy in education, funding mechanisms and equity.³⁸

Gender

The place of women has also been gradually recognised by quantitative data. Gender statistics really began to be collected seriously in the early twentieth century and have strong potential to contribute to historical work on gender and education. Weiner called for a widening of possibilities regarding research methods and information sources.³⁹ This prospect has recently been confirmed by Dyhouse's quantitative analysis of women in universities.⁴⁰

Inclusion

The progressive inclusion of pupils with disabilities is also an important aspect of education policy that is illustrated by available historical statistics. Quantitative analysis may be helpful to examine Armstrong's interesting account of the formal façade of historical development of special education.⁴¹ Statistics on "special education" are available from the early twentieth century.

Ethnic minorities

³⁷ Dyhouse, C. "Going to University in England between the Wars." *History of Education* 31, no. 1 (2002): 1-14.

³⁸ Ball, S. *Class Strategies and the Education Market: the Middle Class and Social Advantage*. London: RoutledgeFalmer, 2003: 26.

Whitty, G., Power, S. and D. Halpin. *Devolution and Choice: The School, the State and the Market*. Buckingham, Open University Press, 1998.

³⁹ Weiner, G. "Harriet Martineau and Her Contemporaries: Past Studies and Methodological Questions on Historical Surveys of Women." *History of Education* 29, no. 5 (2000): 389-404.

⁴⁰ Dyhouse, C. "Gaining Places: Stagnation and Growth in the Proportion of Women in Universities", ESRC Research Project, RES-000-22-0139

⁴¹ Armstrong, F. "The Historical Development of Special Education: Humanitarian Rationality or 'Wild Profusion Of Entangled Events'?" *History of Education* 31, no. 5 (2002): 455.

The construction of nation states has been identified as a crucial factor in the development of educational systems.⁴² A recent quantitative research on the financing of education in the USA and the UK has shown that levels of immigration and the need to promote citizenship explain the pattern of more stable and regular US educational expenditure especially during the “long nineteenth century”.⁴³ Historical research on how funding interacts with the process of inclusion of minority ethnic groups could inform current debates. The historical overview shows that no systematic statistics were collected on these specific groups before 1981 but there is much scope for an analysis of relevant quantitative data. For example, Gillborn’s quantitative analysis of attainment over the last decade concludes that “All have improved, but not equally”.⁴⁴ The comparison of quantitative histories of the above four categories could significantly enhance the analysis of the education process. Do these categories share a common history? Do they benefit from each other? Are they in competition? What is the historical relationship between funding, expansion and democratization of education?

Quantitative data should also be linked with the pedagogic process. For example, Lowe underlines the link between funding and pedagogic issues. He stresses that the introduction of payment by results through the Revised Code of 1862 made teachers’ salaries dependent on schools inspection and contributed to a narrowing of the curriculum to reading, writing and arithmetic and an increasing control from government.⁴⁵ There is an opportunity to use available statistics on teachers. The voice of the teacher is being gradually retrieved.⁴⁶ Quantitative data like wages, training and qualifications levels, and proportions of teachers and pupil-teachers can help to promote a better understanding of the teaching workforce. Alongside life and histories and biographies of the teachers and their teaching and learning experience, there is scope for investigating their numbers, their characteristics and origins as well as their condition of material living.

Datasets

⁴² Green, A. *Education and State Formation, The Rise of Educational System in England, France and USA*. London: Macmillan, 1990.

⁴³ Carpentier, V. “Public Expenditure on Education and Economic Growth in the USA in the Nineteenth and Twentieth Centuries in Comparative Perspective.” *Paedagogica Historica*. 46, no. 6 (2006): 683-706.

⁴⁴ Gillborn, D. *Racism and Education: Coincidence or Conspiracy?*. London: Routledge: 57.

⁴⁵ Lowe, R. *The Death of Progressive Education*. London : Routledge, 2007 : 8.

⁴⁶ Cunningham, P., and P. Gardner (Eds) *Becoming Teachers Texts and Testimonies, 1907-1950*. London: Routledge, 2004.

Efforts to adopt and benefit from a quantitative lens depend on the availability of datasets. There are already datasets that have been generated and ready for use like the pioneering works from Vaizey and Halsey.⁴⁷ More recently, Carpentier constructed a dataset on public expenditure and enrolment in UK education since 1833 and on the funding of universities since 1920.⁴⁸ Datasets also offer opportunities for cross countries comparisons. The datasets generated by Fontvieille's international research programme on quantitative history of education are worth mentioning.⁴⁹ While these authors offered their own interpretation of their figures, their datasets remain autonomous and ready for other historians to use in order to supply a quantitative context to their own studies. Finally, it is clear that increased use of statistical data may lead historians of education to create new historical resources and datasets.

Engaging with key resources in related historical fields: contextualisation and new interpretations

The comparison of education statistics with other quantitative historical series represents an opportunity for historians of education to connect and engage with issues and controversies from parent historical fields (social history, demographic history, political and economic history) and to integrate some of their research questions and interpretations.

Putting education into a wider context

The use of quantitative resources has the potential to facilitate connections with other fields of history and thus further contextualise the historical development of education.

⁴⁷ Vaizey, J. *The Costs of Education*. London: Georges Allen and Unwin Limited, 1958; Halsey, A. H., Webb, J. *Twentieth Century: British Social Trends*. London: Macmillan Press Ltd, 2000

⁴⁸ Carpentier, V. *Système éducatif et performances économiques au Royaume-Uni: 19^{ème} et 20^{ème} siècles*. Paris: L'Harmattan, 2001; Carpentier, V. (2004) *Historical Statistics on the Funding and Development of the UK University System, 1920-2002*, UK Data Archive, www.data-archive.ac.uk.

⁴⁹ Bouslimani, A. "La régulation systémique à l'épreuve de la problématique éducation-développement: vers l'élaboration de la notion de système social d'accumulation." *Economies et Sociétés, Série F, Développement, Croissance et Progrès* 40, (2002): 475-500; Carry, A. "Le compte satellite rétrospectif de l'éducation en France: 1820-1996." *Economies et Sociétés, Série AF, Histoire quantitative de l'économie française* 25 (1999); Diebolt, Claude. "L'évolution de longue période du système éducatif Allemand XIX^{ème} et XX^{ème} siècles." *Economies et Sociétés, Cahiers de l'I.S.M.E.A.* 2-3 (1997); Diebolt, C. *Dépenses d'éducation et cycles économiques en Espagne aux 19^{ème} et 20^{ème} siècles*. Paris: L'Harmattan, 2000; Fontvieille, L. "Education, Growth and Long Cycles: The Case of France in the 19th and 20th Centuries." In *Education and Economic Development since the Industrial Revolution*, edited by G. Tortella. Valencia: Generalitat Valenciana, 1990.

Official statistical abstracts include historical data on a wide range of areas reflecting the changing priorities of the time of their creation. Originally, these volumes included population and vital statistics as well as the main economic data (employment, labour market, production classified by sectors, prices and interest rates, government's and households' finance). Data on justice, immigration, poverty and education were included from an early stage; they were gradually joined by other social activities, for example health, social protection and leisure.

Most of these statistics have been compiled into major historical databases.⁵⁰ These represent important tools for further engagement with the political, social, economic and demographic environments of the history of education. They offer opportunities to reflect on the multiple dimensions of education and to refine the contextualisation of educational events, and possibly to unpack new historical research questions. Does any given educational event take place during economic prosperity or crisis? Is there a relationship between this new education initiative and the level of unemployment? Could the demographic context of the time explain evolutions of enrolment? How does education funding compare to global public spending at the time? Are the political (votes) and social (police arrests and convictions) contexts of the time connected to this educational reform?

The comparison of education statistics with other data creates synergies by looking at an issue from different perspectives. For example, Gordon and Szreter identified some common ground for economic historians and historians of education. These included the 1862 Revised Code, the relationship between education and the industrial revolution and the cultural thesis developed by Wiener on culture and economic decline.⁵¹ The agenda of bridging with economic history has been taken forward recently in special issues from *History of Education*⁵² and *Paedagogica Historica*,⁵³ and recently reaffirmed by Sanderson.⁵⁴

⁵⁰ Halsey, A. H., and J. Webb. *Twentieth Century: British Social Trends*. London: Macmillan Press Ltd, 2000; Feinstein, C. H. *Statistical Tables of National Income, Expenditures and Output of the U.K. 1855-1965*. Cambridge: Cambridge University Press, 1976; Mitchell, B. R. *British Historical Statistics*. Cambridge: Cambridge University Press, 1988; Maddison, A. *The World Economy: A Millennial Perspective*. Paris: O.E.C.D., 2000.

⁵¹ Gordon, P., and R. Szreter (Eds) *History of Education: the Making of a Discipline*. London: The Woburn Press, 1989: 11.

⁵² McCulloch, G. "Education and Economic Performance." *History of Education* 27, no. 3 (1998): 202-206.

⁵³ Núñez, C. E. "Literacy, Schooling and Economic Modernization: An Historian's Approach." *Paedagogica Historica - International Journal of the History of Education* 39, no. 5 (2003): 535-558.

⁵⁴ Sanderson, M. "Educational and Economic History: The Good Neighbours." *History of Education* 36, no. 4 & 5 (2007): 429-445.

These dialogues between economic history and history of education have often been driven by the search for data for contextualisation from both sides. Economic historians researching education look for testimonies, discourse, minutes and other evidence that could explain trends, patterns or fluctuations of education funding and enrolment and the impact of educational development on economic performances. Similarly, historians of education were using figures for a financial and economic contextualisation of their research. Such convergences are encouraging but collaboration must take place with due attention to the limits of quantification, as wonderfully shown by Hobsbawm in his description of the “uneasy coexistence” between economists and historians.⁵⁵

Here I shall focus on three main issues and debates in economic history that involve discussion about the collection and interpretation of statistics related to history of education: these are economic growth and literacy, child labour and the role of the State in education.

Economic growth and literacy

Debates about long-term economic growth are a good example of data and interpretation that can be connected to the historical development of education. This is well illustrated by debates on the level of economic growth before and since the industrial revolution which produced opposing views as to the revolutionary or gradualist nature of the changes from 1780 to 1820.⁵⁶ Such debates on the economic take-off mirror controversies about the existence or not of the climacteric or the relative decline of the British economy following the second industrial revolution of the end of the nineteenth century. A first interesting point about these debates is the disagreement of economic historians about data.

The second point is a connection with education as these controversies were structured around the extent to which the creation of British hegemony and its loss were the result of a quantitative or qualitative development of factors of production. Put another way, to what extent were the quantity and quality of skills and education a driving force of the hegemony and responsible for its demise. According to McCloskey,⁵⁷ the decline was due to an irremediable exhaustion of

⁵⁵ Hobsbawm, E. J. *On History*. London: Abacus, 1997: 127.

⁵⁶ Deane, P. “Contemporary Estimates of National Income in the First Half of the Nineteenth Century.” *Economic History Review* 8, no. 3 (1956): 338-354; Crafts, N.F.R. *British Economic Growth during the Industrial Revolution*. Oxford: Clarendon Press, 1985: 81.

⁵⁷ McCloskey, D. N. “Did Victorian Britain Fail?” *Economic History Review* 23, no. 3 (1970): 446-459.

available labour and capital. Aldcroft saw it as the result of lower productivity or qualitative decline of factors of production.⁵⁸ These debates about growth connect with education and literacy.

Aldrich has shown both the merits and limits of the use of the literacy indicators. One of the main problems is the alternative conceptions of literacy according to space and time and the impact on current debates.⁵⁹ There is a consensus about a strong increase of literacy rates in the first part of the seventeenth century and the 40% literacy threshold designed by Bowman and Anderson as necessary to the take-off of an economy.⁶⁰ However, there are diverging answers on whether there was a direct connection between literacy and the industrial revolution.⁶¹ More importantly, some authors argued that literacy declined during the second part of the eighteenth century, especially in industrial regions.⁶² This was rejected by others.⁶³ Most of these debates were also methodological, focusing on the data obtained from signatures on marriage registers which were used as proxies for literacy but also on the correlation and link between indicators, and the substantial time lag. The reliability of signing ability was questioned by Vincent who mobilised other data associated with the printed word and functional literacies.⁶⁴ These debates question the extent to which the rise of schooling drives literacy and suggest the need for more collaboration between data on the formal system of education and other driving forces of literacy.

Child labour

The historical relationship between children, schooling and factory systems is another example of use of quantitative data. The study of child labour is at the interface of economic history, labour history, history of the family and childhood and history of education. The evolution of technology and demography, the changes in legislation on school and child labour all relate to the

⁵⁸ Aldcroft, D. H. "McCloskey on Victorian Growth: A Comment." *Economic History Review* 27, no. 2 (1974): 271-274.

⁵⁹ Aldrich, R. "Literacy, Illiteracy, Semi-Literacy and Marriage Registers." *History of Education Society Bulletin* 22 (1978): 4.

⁶⁰ Anderson, C. A., and J. M. Bowman (Eds) *Education and Economic Development*. London: Frank Cass & Co. Ltd, 1966.

⁶¹ Stone, L. "Literacy and Education in England, 1640-1900." *Past and Present* 42 (1969): 69-139.

⁶² Sanderson, M. "Literacy and Social Mobility in the Industrial Revolution in England." *Past and Present* 56 (1972): 75-104; Stephens, W. B. *Education, Literacy and Society 1830-1870, The Geography of Diversity in Provincial England*. Manchester: Manchester University Press, 1987.

⁶³ West, E. G. "Literacy & the Industrial Revolution." *Economic History Review* 31, no. 3 (1978): 369-383.

⁶⁴ Vincent, D. *Literacy and Popular Culture: England 1750-1914*. Cambridge, Cambridge University Press, 1989.

central issue of the transition from school to factory. Hopkins argues “the transformation of working class childhood during the 19th century was not the consequence of any profound change in attitudes to children. It was rather the product of philanthropic and compassionate motives together with a concern of social control at a time of unprecedented change: a swelling population, industrialization, urbanization.”⁶⁵ Quantitative data were at the centre of debates around child labour. For example, Cunningham’s analysis of Census led him to conclude that child labour was declining from the early modern period to the mid nineteenth century and questioning the impact of industrialization on child labour. While Peacock’s quantitative study of prosecutions for child labour tends to show enforcement following the 1833 factory act was more efficient than thought,⁶⁶ Nardinelli focuses on economic factors suggesting that the decline of child labour was the result of newly adopted technology and the rise of family income and a replacement of children by women rather than the new legislation.⁶⁷ There are some debates about the causes: more at the micro-economic level, at the interface of the economy of the family and school’s finance. Mitch’s econometric analysis suggested that subsidies to elementary education lowered fees and contributed to increased enrolment.⁶⁸

Role of the state

Research on the links between the cost of education (fees and subsidies) and its returns (for individuals and the economy) are directly connected to another important encounter between historians of education and economic historians which is the question of the role of the State in education. This public/private controversy will be covered in the next section.

Education and other social policies

Quantitative data may facilitate the examination of the interconnections between those activities that contribute to the development of men and women such as education, health, housing and social security.

⁶⁵ Hopkins, E. *Childhood Transformed: Working-Class Children in Nineteenth-Century England*. Manchester: Manchester University Press, 1994: 6.

⁶⁶ Peacock, A. E. “The Successful Prosecution of the Factory Acts, 1833-1855.” *Economic History Review* 37, no. 3 (1984): 197-210.

⁶⁷ Nardinelli, C. “Child Labour and the Factory Acts.” *Journal of Economic History* 40, no. 4 (1980): 730-746

⁶⁸ Mitch, D. F. “The Impact of Subsidies to Elementary Schooling on Enrolment Rates in Nineteenth Century England.” *Economic History Review* 39, no. 3 (1986): 371-391.

The creation by the UN in 1990 of the Human Development Index was an interesting example of how to use data to connect social and economic developments. This index which aggregates economic (GDP), health (life expectancy) and education (literacy and gross enrolment) indicators was criticised by Amartya Sen as vulgar but clearly represented a shift from a concern with narrow economic growth to an evaluation of wider human development.⁶⁹ Interestingly, the hierarchy between countries according to this index is different from the traditional GDP classification. Crafts' historical reconstruction of the Human Development Index for different countries shows interesting findings across time and space.⁷⁰

Without moving towards a complete aggregation through the construction of a composite index, historical quantitative data may be used to compare and contrast the trajectories of the different activities of the social sphere. In some countries, a range of statistics on social activities was developed in the nineteenth century. They are available in major historical abstracts already mentioned in this paper and their construction is marked by similar constraints of accuracy and reliability as their education counterparts.

The interpretation of such statistics may inform education historians' interpretation of the evolution of educational policies and help to make connections with similar policy and research debates about their weight on taxation and their impact on individuals and society. Can we consider past and contemporary educational policies as specific or dependent on all welfare state policies? How do historical trajectories of education compare to other social activities attached to human development like health, housing? Such questions are at the centre of a research programme developed around the theory of systemic regulation which examines the long term relationship in France between the state, the development of capitalist economy and social activities. This programme was based on quantitative historical studies about education, health, and pensions which have highlighted important specificities but also significant commonalities.⁷¹

⁶⁹ Sen, A. *Development as Freedom*. Oxford: Oxford University Press, 1999.

⁷⁰ Crafts, N. F. R. *The Human Development Index and Changes in Standards of Living: Some Historical Comparisons*, *European Review of Economic History* 1 (1997): 299-322.

⁷¹ Domin, J. P. (2000) "Evolution et croissance de longue période du système hospitalier français: 1803-1993." *Economies et Sociétés, Série AF* 26 (2000): 71-133 ; Fontvieille, L. "Evolution et croissance de l'Etat français 1815-1969." *Economies et Sociétés, Série AF* 13 (1976): 1657-2149; Reimat, A. "Histoire quantitative de la prise en charge de la vieillesse en France, XIXème-XXème siècles: assistance et prévoyance." *Economies et Sociétés, Série AF* 27 (2000) : 7-114.

One interesting use of quantitative historical resources could be to draw some comparison and contrast with health policies.⁷² There are already outstanding quantitative descriptions of the historical growth of the National Health Service in Britain,⁷³ however data prior to the Second World War are more difficult to find. Some quantitative historical studies have already started to address problems of availability and reliability of long-term data on voluntary hospitals.⁷⁴

Historical statistics, theory and policy making

A single set of figures can be considered as statistical fact by policy makers, as empirical data by theorists and as historical evidence by historians. There are no problems in principle with such different uses of quantitative sources in different environments as this can be source of a fruitful dialogue as long as some potential tensions are considered.

‘Lies, damned lies and statistics’: controversies over statistics and contemporary use to promote certain policies

Statistics are closely connected to the conception of policies and their implementation. They are also mobilised to evaluate existing policies. Quantitative data tend to carry much weight with the media and with policy makers. Statistical headlines, comments in the press or in policy documents include persuasive statements like “statistics show...” or “data demonstrate ...”. Most of the time, such assertions are not accompanied with information about the methods that were used in order to collect or interpret those statistics. Data are instantly transformed into facts in order to legitimate or discredit policies.

This is not a new issue. In the past, statistics were used not only as information but also as instruments of persuasion for legislators in parliamentary debates and other political arenas. For example Aldrich notes that the purpose of Pakington, the originator of the Newcastle Commission, was to secure a report that would “arm the government with the authority of facts and the support of public opinion”.⁷⁵ There is a case for historians to inform current policy

⁷² Berridge, V. *Health and Society in Britain since 1939*. Cambridge: Cambridge University Press, 1989.

⁷³ Webster, C. *The Health Services Since the War*. London: The Stationery Office, 1996.

⁷⁴ Cherry, S. *Medical Services and the Hospital in Britain, 1860-1939*. Cambridge: Cambridge University Press, 1999; Gorsky, M., Mohan, J., and M. Powell. “The Financial Health of Voluntary Hospitals in interwar Britain.” *Economic History Review* 4, no. 3 (2003): 533-557.

⁷⁵ Aldrich, R. *Lessons from History of Education: The Selected Works of Richard Aldrich*. Abingdon: Routledge, 2006: 55.

debates and practices and their use and misuse of statistics to describe the past, present and future. Historians must engage with statistics in order to offer a critical historical perspective on their use by policy makers to portray or disguise reality. Gillborn argues that “apparently technical matters of measurement are actually political decisions because different methods produce diametrically opposed conclusions from identical data”.⁷⁶ Historians of education can contribute to revealing such processes by providing information about the evolution of statistical materials or indicators that may change the perception of reality but not reality itself. For example, on the eve of the French presidential elections in 2007, statisticians of the national institute for economic statistics (INSEE) went on strike to protest against the utilization of a new measure of employment data by the national agency of employment (ANPE). The new statistical definition of who is considered as unemployed led to a strong underestimation of the unemployment rate. Some researchers and statisticians felt their work was distorted and exploited for political purposes as the government claimed its policy was responsible for the lower unemployment rate.⁷⁷

These tensions reveal the complex nature of statistics within the process of creation, implementation and evaluation of policy. The useful role of statistics in policy making should not lead us to ignore the danger that the goal may become the quantitative target in itself without any other considerations. In this case statistics are not the means to inform or implement a policy, but its end. The historical perspective may help in evaluating data that are used to justify policies or to evaluate the results of an existing policy. For example, it is important to know what the much acclaimed British target of fifty percent participation in higher education by the year 2010 really means. This indicator is the Initial Entry Rate for higher education which sums the percentages of the age group who enter higher and further education colleges for the first time in each year of age between 18 and 30.⁷⁸ This indicator therefore focuses on participation but does not include retention, raising important issues in terms of widening participation.

Bridge building between methods is particularly important in a context where policy makers increasingly use statistics to justify their current policies and future reforms. Historians of education must engage with the instrumental use of statistics that might lead to interpretations of

⁷⁶ Gillborn, D. *Racism and Education: Coincidence or Conspiracy?*. London: Routledge, 2008: 69.

⁷⁷ *Le Monde*, April 26, 2007.

⁷⁸ Ramsden, B. (2003) *Review of the Initial Entry Rate into Higher Education*, National Statistics Quality Review Series, Department for Education and Skills.

the past presented as truth where in fact they may be highly debatable. It may be the case that constant contemporary reference to statistics and targets is one source of antipathy or defiance towards quantitative data by many historians. Current policies should be informed and on occasion challenged by an assessment of past policies relying on both quantitative and qualitative approaches.

Engaging with theory

There is space for a socio-economic history of education examining the link between education, social change and the funding, expansion, contents and pedagogic practices of education. Simon's work on education provided a basis for collaboration with theory concerning the questions of education and social change.⁷⁹ Such collaboration offers great opportunities but must also be treated cautiously. Silver remarks that it is important to keep in mind "how dangerous theory disguised as history can be".⁸⁰ Part of this collaboration with theories is linked to quantitative data as many historical statistics become empirical data used for theoretical research.

Historians should obviously be concerned with the collection of empirical data in terms of accuracy and reliability. They should also be concerned by the interpretation of these data within the considered theoretical framework. Historical data which are used to inform or confirm theories and models can be misinterpreted or taken out of historical context. For example, some events or factors that may affect a specific relationship between two variables may have been overestimated, underestimated or ignored. Such tensions partly explain the crucial difference between correlation and causality. In the absence of any unified theory that would explain the whole process of educational development, theoretical findings and conclusions might offer new or refined interpretations of historical events which should not be confused with a broader attempt to rewrite history. The caution works both ways as many historians have the tendency to consider historical interpretation as objective and independent of theories while most of the time it is not. Historians should also engage with the important issue of the use of theory and its capacity of prediction. Models are not exempt from historical contingencies. This is an important matter considering the growing use of quantitative models in offering prescriptions for policy making.

⁷⁹ McCulloch, G., Goodman, J., and W. Richardson. "Editors' Introduction: Social Change in the History of Education." *History of Education* 36, no. 4 (2007): 403 – 408.

⁸⁰ Silver, H. *Education as History*. London: Methuen, 1983: 82.

An interesting example of dialogue between the historian of education and theory concerns the evaluation of social mobility. The work of Brian Simon was heavily based on the unequal development of education according to social class. He was critical of the pessimistic view of historical process developed by the theory of social reproduction, and he argued for the existence of unexpected outcomes from the historical expansion of education that according to him was overlooked by Bourdieu.⁸¹ A combination of quantitative and qualitative methods could contribute to an examination of the interactions between the dynamic of social reproduction and those unexpected outcomes.

Aldrich interpreted the resurgence in the 1970s of debates on literacy not only as the result of a new dynamism in education history but also as the consequence of a demand for statistical materials from economists of education.⁸² Human capital theorists used historical statistics to highlight correlations between education and economic performance,⁸³ and their conclusion was that there was correlation and indeed a positive causality between the two. This quantitative result was historically important as the framework of human capital theories which acknowledged private and public costs and benefits led to the justification of massive public investment in education. At the same time, within such a framework depending mainly on quantitative evidence, education tended to be dominated by economic perspectives and the political, social, and cultural dynamics of education were overlooked. This had important consequences when the economic situation deteriorated in the 1970s, and education was directly hit by cuts on the grounds of an economic rationale based on low taxation, while the idea that expenditure on education could be maintained in relation to other rationales was overlooked. It would be important for historians of education to reactivate some common grounds in order to engage with theories and discuss a more global approach to the relationship between education and the economy.⁸⁴ This would require examining the historical connections between economic and extra-economic driving forces of education and would necessarily imply a combination of quantitative and qualitative methods.

⁸¹ Simon, B. *Does Education Matter?*. London: Lawrence and Wishart, 1985

⁸² Aldrich, R. "Literacy, Illiteracy, Semi-Literacy and Marriage Registers." *History of Education Society Bulletin* 22 (1978): 4.

⁸³ Denison E. F. *The Sources of Economic Growth in the United States and the Alternatives Before Us*. New York: Committee for Economic Development, 1962.

⁸⁴ Carpentier, V. "Educational Policymaking: Economic and Historical Perspectives." In *History, Politics and Policy Making in Education*, edited by Crook, D. and G. McCulloch. London: Bedford Way Papers, 2007: 30-48.

While beyond the scope of this paper, it is important to stress that quantitative historical approaches are also useful instruments for making comparisons across space. There are however many issues that are raised about their limitations in offering a truly comparative analysis, reservations that are mainly the same as those associated with comparisons across time and involve cultural and political specificities. Nevertheless, a combination of quantitative and qualitative approaches could help to reveal both structures and processes behind comparative statistics and ensure that they are employed in a constructive manner to inform historical interpretations, theoretical validation and political purposes.

Example: The historical controversy about education and the State; economic history, educational history and contemporary politics.

Debates on the links between education, the State and the economy in the nineteenth century perfectly illustrate many of the tensions around quantitative sources highlighted in this paper. Those controversies are associated with the quality of data, their historical meanings and theoretical interpretations as well as their contemporary political resonance in relation the public/private debate.

These debates followed West's thesis that State intervention was harmful to educational development.⁸⁵ West's analysis of enrolment data extracted from the 1833 Kerry Report and the 1861 Newcastle Commission led him to claim that private schools were in sufficient number and efficient enough to respond to England's educational needs and working class demands at that time. Parties involved in this debate have constructed their arguments upon the reliability of the data available at the time. For example, Hurt challenged this thesis by claiming that "West's faith in the accuracy of the educational statistics of the nineteenth centuries was neither shared by those by whom they were compiled nor by those for whom they were produced".⁸⁶ Hurt listed a series of problems that should have been considered before any interpretation of such data: the individuals who were collecting the data were not trained and not paid; the Anglican National Society and the non-conformist British and Foreign School Society were engaged in a battle of statistics and exaggerated their enrolment; the meaning of school was broader than in the

⁸⁵ West, E. G. "Resource Allocation and Growth in Early Nineteenth Century Education." *Economic History Review* 24, no. 4 (1970): 633-642.

⁸⁶ Hurt, J. S. "Professor West on Early Nineteenth-Century Education." *Economic History Review* 24, no 4 (1971): 624.

mid twentieth century. West's immediate response was to defend his sources and the interpretation behind them. According to him, Hurt used three contradictory strategies to refute his data: the nihilistic position that all statistics are unreliable; the "my statistics are better than yours" and the "I agree with the sources but offer a different interpretation".⁸⁷

A decade later, Kiesling expressed similar doubts about a supposed efficiency of pre 1870 private education claiming that "the quality of data for nineteenth century English education is inadequate to support any hypothesis with the degree of confidence exhibited by West".⁸⁸ His view that "none of the major surveys taken during this period escaped serious criticism"⁸⁹ was criticised in a response from West claiming "As Kiesling reduces confidence in the nineteenth century data, he undermines the value of his alternative hypothesis because as he acknowledges, he is appealing to the same data sources as mine".⁹⁰ Similar debates took place around the Scottish case between Anderson and Mason.⁹¹

The debates were also based on interpretations of what exactly constituted education or schooling at the time and its output. These data included enrolment, inspection and average attendance but also the process of schooling and its results on the ground. Were dame schools really providing education or were they merely carers? Silver claimed that West uses insecure and selected nineteenth century statistics without exploring the controversies to which they were subjected at the time, their nineteenth century meanings.⁹² Such arguments about the efficiency of education system are also connected to quantitative data debates on literacy and its relationship with the State and industrialisation.

West's use of the theory of bureaucracy as well as Friedman's theory of the free market in education has important implications.⁹³ These include issues of predictability and whether an emerging private market would have maintained a steady progression. Private education may

⁸⁷ West, E. G. "The Interpretation of Early Nineteenth Century Education." *Economic History Review* 24, no 4 (1971): 633-642.

⁸⁸ Kiesling, H. J. "Nineteenth Century Education According to West: a Comment." *Economic History Review* 36, no. 3 (1983): 416.

⁸⁹ *Ibid.*, 423.

⁹⁰ West, E. G. "Nineteenth Century Educational History: The Kiesling Critique." *Economic History Review* 36, no. 3 (1983): 433.

⁹¹ Anderson, R. D. "Education and the State in Nineteenth-Century Scotland." *Economic History Review* 36, no. 4: (1983) 518-534; Anderson, R. D. "School Attendance in Nineteenth-Century Scotland: a Reply." *Economic History Review* 38, no. 2 (1983): 282-286; Mason, D. M. "School Attendance in Nineteenth-Century Scotland." *Economic History Review* 38, no. 2 (1983): 276-281.

⁹² Silver, H. *Education as History*. London: Methuen, 1983: 28.

have been sufficient for the rudimentary first industrial revolution but not enough to sustain the second industrial revolution and its more sophisticated technology. Would the market have adapted itself and driven knowledge? What if?

Carpentier's use of another framework seeking to establish a link between public expenditure and long economic cycles led him to consider State intervention as the consequence rather than the cause of relative British economic decline.⁹⁴ Mitch's analysis of literacy rates and wages produced rates of returns from education suggesting that government educational policy was positive for economic growth even if it was not the primary objective of its intervention, which was more about social stability or control.⁹⁵

Such quantitative historical analyses are caught in a debate with highly political resonance as noted by Simon's reference to a "highly polemical intervention relating to state education in the wake of the Black Papers".⁹⁶ The debates emerged in a specific context of declining resources for education and bitter controversies around the public and private funding of education. West's interpretation led him to claim that the State repressed an emerging market in popular education and to add that private education could have done the job. Not surprisingly, the translation of those historical findings into the contemporary context led to intense political debates.

Assessing the quality of statistics is a crucial aspect of the work of the researcher. This debate led various scholars to use traditional history and political, social and cultural developments in order to support or contest the reliability of the statistics behind their arguments. Those debates were clearly at the intersection of quantitative and qualitative histories: between trends and variations observed and their meanings.

Conclusion

⁹³ West, E. G. "Nineteenth Century Educational History: The Kiesling Critique." *Economic History Review* 36, no. 3 (1983): 432.

⁹⁴ Carpentier, V. "Public Expenditure on Education and Economic Growth in the UK, 1833-2000." *History of Education* 32, no. 1 (2003): 1-15.

⁹⁵ Mitch, D. "Underinvestment in Literacy? The Potential Contribution of Government Involvement in Elementary Education to Economic Growth in Nineteenth-Century England." *Journal of Economic History* 44, no. 2 (1984): 557-566.

⁹⁶ Simon, B. "The History of Education in the 1980s." *British Journal of Educational Studies* 30, no. 1 (1982): 91.

While the quest for perfect data may be an illusion, a careful examination of their origin and construction by combining research methods may contribute to refine the interpretation of some historical events.

Unfortunately, there is still a lack of dialogue between quantitative and qualitative approaches. This is not restricted to history and may be explained by the belief that quantitative and qualitative methods are exclusive or that one is superior to the other. A distrust of numbers by some mirrors a tendency by others to consider them as the ultimate source of an objective observation of reality. The idea that what cannot be measured is not relevant or does not exist is as dangerous as a refusal to engage with figures. Haskins and Jeffrey's claim that "readers need to be able to critique historical writings that use quantitative analysis even if they don't intend to use quantitative methods in their own work"⁹⁷ may be correct but does not take into consideration a legitimate reluctance from historians to engage in quantitative debates which increasingly rely on sophisticated methods that only specialists could read.

There are therefore challenges but also clear opportunities to combine words and numbers. Combination is preferred to integration. Brannen suggests "it is inappropriate to seek to integrate research data..." and proposes that the researcher "should relate the data to each other in order to see how they complement and contradict each other."⁹⁸ This position is shared by many other historians like Hudson who pleads not for a choice between quantitative and qualitative approaches but for a mixture of the two.⁹⁹ Mixed methods have also been acknowledged by historians of education. For example, Briggs' editorial in the first ever volume of the journal *History of Education* includes quantitative history as one of the five changes he thought should be taken into consideration by historians of education.¹⁰⁰ Other examples include Lowe's view that there is "no absolute distinction which can be made between quantitative and qualitative sources"¹⁰¹ and Martin and Goodman's recent identification of quantitative history as one area for development in history of education.¹⁰²

⁹⁷ Haskins, L., and K. Jeffrey. *Understanding Quantitative History*. Cambridge, MIT Press, 1990: 7.

⁹⁸ Brannen, J. (Ed) *Mixing Methods: Qualitative and Quantitative Research*. Avebury: Aldershot, 1992: 31.

⁹⁹ Hudson, P. *History by Numbers: An Introduction to Quantitative Approaches*. London: Arnold, 2000.

¹⁰⁰ Briggs, A. "The Study of History of Education." *History of Education* 1, no. 1 (1972): 7.

¹⁰¹ Lowe, R. "Do We Still Need History of Education: Is it Central or Peripheral?." *History of Education* 31, no. 6 (2002): 500.

¹⁰² Goodman, J., and Martin, J. "Editorial: History of Education-Defining a Field." *History of Education* 33, no. 1 (2004): 7.

An alliance of research methods would be consistent with McCulloch and Richardson's methodological pluralism¹⁰³ which may partly contribute to solve dilemmas around the duties of the historian of education to record and interpret events as fully and as accurately as possible recently covered by Aldrich.¹⁰⁴ However imperfect they may be, historical statistics can offer valuable opportunities, meaning that their use is not an obligation but has the potential to offer synergies brought about by a dialogue between methodologies.

¹⁰³ McCulloch, G., and Richardson, W. (2000) *Historical Research in Educational Settings*. Buckingham: Open University Press, 2000: 119.

¹⁰⁴ Aldrich, R. 'The Three Duties of the Historian of Education.' *History of Education* 32, no. 2 (2003): 133-143.