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Thomas, SM, *et al* (2011) Improving Educational Evaluation and Quality in China
ESRC End of Award Report, RES-167-25-0353. Swindon: ESRC

ECONOMIC AND SOCIAL RESEARCH COUNCIL END OF AWARD REPORT



For awards ending on or after 1 November 2009

This End of Award Report should be completed and submitted using the **grant reference** as the email subject, to **reportsofficer@esrc.ac.uk** on or before the due date.

The final instalment of the grant will not be paid until an End of Award Report is completed in full and accepted by ESRC.

Grant holders whose End of Award Report is overdue or incomplete will not be eligible for further ESRC funding until the Report is accepted. ESRC reserves the right to recover a sum of the expenditure incurred on the grant if the End of Award Report is overdue. (Please see Section 5 of the ESRC Research Funding Guide for details.)

Please refer to the Guidance notes when completing this End of Award Report.

Grant Reference	RES-167-25-0353		
Grant Title	Improving Educational Evaluating and Quality in China		
Grant Start Date	1 May 2008	Total Amount	£245666.49
Grant End Date	31 Jan 2011	Expended:	
Grant holding Institution	Graduate School of Education University of Bristol		
Grant Holder	Prof Sally M. Thomas		
Grant Holder's Contact Details	Address	Email	
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Co-Investigators (as per project application):		Institution	
Dr Wen Jung Peng		Graduate School of Education University of Bristol	

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1. NON-TECHNICAL SUMMARY

Please provide below a project summary written in non-technical language. The summary may be used by ESRC to publicise your work and should explain the aims and findings of the project. *[Max 250 words]*

Improving education quality is a major concern worldwide given the links between better student outcomes, poverty reduction and economic growth. The Improving Educational Evaluation and Quality in China (IEEQC) project thus aimed to examine school effectiveness (using innovative quantitative methodology - multilevel modelling) and the role of local context and priorities in determining definitions of educational quality in China, thereby addressing a gap in previous research. The methodology comprised a systematic literature review and two linked studies, involving the analysis of examination and other data from 90,000+ students as well as interviews with key stakeholders. Findings indicate:

- Relevant predictors of students examination performance exist, some unique to China (e.g. residential status). Adjusting for these variables, statistically significant differences in “value added” measures of school effectiveness were identified. Differential effects were also found within schools for different curriculum subjects and student groups suggesting that a range of measures are required to reflect the complexity of school performance in China.
- Regional differences in relevant measures and findings suggest that in China regional “value added” systems may be more appropriate than a national system.
- New “value added” approaches to school self-evaluation and improvement would be welcomed by stakeholders, if adapted to Chinese/local priorities for educational quality such as promoting students all round development. However, systematic longitudinal data collection procedures are needed to ensure quality data in the required format.
- Customised training and dissemination is needed for policy makers, practitioners and public to improve understanding of the “value added” concept and evaluation methods.

2. PROJECT OVERVIEW

a) Objectives

Please state the aims and objectives of your project as outlined in your proposal to the ESRC. *[Max 200 words]*

The study aimed to investigate the effectiveness and contextual features of schools in China and the local application of innovative school evaluation methods to educational policy and practice in rural and urban secondary schools. The 8 objectives can be summarised as follows:

- To collect and analyse quantitative and qualitative data via two linked studies, and a systematic literature review, to provide new insights and extend current theories about (i) the impact of student characteristics, school and contextual factors on students attainment and progress at school, (ii) the dimensions, range and extent of school effectiveness in China (iii) how “value added” approaches and innovative methods to evaluate educational quality may be adapted and developed to take account of local contexts and priorities. (objectives 1, 2, 4)
- To inform and develop professional knowledge and contribute to educational policy development (and capacity building) in an area where empirical data is lacking, thereby addressing the issue of how educational quality is understood in different contexts and how measures of school effectiveness may be contextualised and operationalised within a school

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evaluation framework in the China (objectives 3, 5)

- To connect with MDG goals and broadly disseminate research findings to key stakeholders to inform and develop innovation in school evaluation and guidance for Ministry of Education on the evaluation, inspection and monitoring of educational quality and improvement in China that takes into account local priorities and context (objectives 6,7,8).

b) Project Changes

Please describe any changes made to the original aims and objectives, and confirm that these were agreed with the ESRC. Please also detail any changes to the grant holder's institutional affiliation, project staffing or funding. *[Max 200 words]*

No changes were made to the original aims and objectives or to the grant holder's institutional affiliation, project staffing or overall funding. A 9 month no-cost extension was agreed by ESRC due to unavoidable delays to data collection and analysis. The delays were related to the decision to collect more extensive and detailed survey data from students and schools than originally anticipated as well as the additional time and capacity building needed by Chinese local education authority staff and researchers to collect data in the required format (typically undertaking this kind of task for the first time).

c) Methodology

Please describe the methodology that you employed in the project. Please also note any ethical issues that arose during the course of the work, the effects of this and any action taken. *[Max. 500 words]*

Study 1: Examining the nature, size and extent of school effectiveness in China using value added measures.

Data Collection: Examination, prior attainment and other pupil, class and school background data were collected and matched for the 2009 cohort of 90,000+ students in 124 senior secondary schools across three city/district education authorities (LEAs) using new student and school survey instruments and secondary data sources. The LEAs were selected to reflect a range of socio-economic and geographical contexts in China (located in two eastern and one western province). **Methods:** Multilevel modelling statistical analysis using MLwin software (Rasbash et al, 2005) was employed to address the Study 1 research questions. A variety of two and three level models were explored and 'optimal' models were identified (using standard statistical criteria) to investigate the impact of a variety of student characteristics and school input, context and process factors (such as students gender and socio-economic status, teachers qualifications and experience, school funding and rural/urban location) on student attainment and progress and to estimate effects associated with the level of the county, school, and the individual student. Four different academic outcomes (total score, Chinese, English, mathematics) and differential school effects for different groups of students (eg by gender, prior ability) were investigated. As highlighted in the original bid and given valid regional examination equivalencies could not be established, the LEA datasets were analysed separately and the findings compared to identify national patterns of the similarities and differences in school effectiveness measures across regions.

Study 2: Exploring issues of sustainable research capacity, local context and priorities in relation to educational quality and evaluation in China

Data Collection: New qualitative data was collected (autumn 2008) via customised interviews and focus groups with 90+ head teachers, teachers, students in 2 urban and 2 rural case study

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schools in Baoding City (where a Chinese Ministry of Education funded project exploring the potential of value added measures for school evaluation had previously been conducted 2006-2008). Data was also collected from 4 additional case study schools in two other LEAs and with local and national policy makers (eg LEA and national school inspectors) in order to get a broader spread of perspectives. **Methods:** Participants were asked their views on (i) the nature of education quality, values and priorities and the impact of local context on educational outcomes; (ii) current methods of evaluating school and student performance and educational quality; (iii) the usefulness and limitations of “value added” measures for the purpose of evaluating school performance at primary and secondary levels; and (iv) how innovative evaluation methods and value added approaches could be or have been applied and adapted to take account of local contexts and priorities. Qualitative data was recorded, transcribed and systematically analysed in Chinese using established techniques to identify key themes and illustrative quotes. Summary data was translated into English and re-analysed to cross validate key themes that emerged in relation to each aspect of the study 2 research questions.

Ethical issues were reviewed and addressed using UOB standard procedures.

d) Project Findings

Please summarise the findings of the project, referring where appropriate to outputs recorded on *ESRC Society Today*. Any future research plans should also be identified. [Max 500 words]

Study 1: Measuring school effectiveness

The optimal “value added” model for estimating Chinese senior secondary school effects (identified using standard statistical criteria) adjusted for factors outside the control of schools including student’s prior attainment, individual background characteristics and school context. Some explanatory variables found to be statistically significant may be unique to China (eg family residence status) and some unexpected results were found (eg mobile phone ownership indicated a negative relationship and parents agricultural employment indicated a positive relationship with students examination performance) highlighting regional differences in China and in comparison to developed countries. Across the three local education authorities (LEAs) investigated these models explained 43%-57% of the total variance in students Higher Education (HE) entrance examination total scores. Of the remaining unexplained variance 5-15% was attributable to differences between schools, slightly higher than equivalent UK findings, and statistically significant differences within LEAs in terms of schools’ “value added” measures were found. However the impact of school context varied considerably between LEAs (explaining 7%-33% of school variance), as did the impact of additional school input/process variables, indicating a greater influence of these factors on school performance in some regions. Evidence of differential within school effects for different curriculum subjects and student groups (eg by prior attainment) were also found, although the strength of evidence varied across LEAs suggesting that local policies and practices may play an important role, and that a range of “value added” measures are required to fully evaluate school effectiveness in China. Further research is planned to extend and clarify these findings over four student cohorts and in relation to improving teacher development and quality (see ESRC award RES-167-25-0428).

Study 2: Definitions of educational quality and approaches to school evaluation

Stakeholder perceptions of educational quality can be understood in terms of outcomes, context, inputs and processes, reflecting typical western school effectiveness models, but also emphasise the particular importance of equity especially with regard to reducing east/west and

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rural/urban differences. Moreover, valued student outcomes seem relatively broader than elsewhere due to the recent national education policy reform to promote students all-round development and the enduring influence of Confucius philosophy promoting scholarship. Nevertheless, many stakeholders recognise that in practice raw examination achievement remains the critical indicator of educational quality, which subsequently influences teaching practices and this is unlikely to change without Higher Education entrance and examination system reform. School and teacher evaluation methods in China are typically seen by some stakeholders as unscientific, locally and variably regulated and also not sufficiently focused on school improvement. A few examples of schools adapting and using “value added” approaches informally were identified although it was recognised that further guidance and training is needed for policy makers, practitioners and public to understand the “value added” concept and statistical methods. It was widely acknowledged that “Value Added” measures would provide an important and welcome addition to current school evaluation and self-evaluation systems in China, although there is a need to adapt methods to local priorities (students’ all-round development) and be aware of methodological limitations.

e) Contributions to wider ESRC initiatives (eg Research Programmes or Networks)

If your project was part of a wider ESRC initiative, please describe your contributions to the initiative’s objectives and activities and note any effect on your project resulting from participation. *[Max. 200 words]*

The IEEQC project funded as part of the DFID/ESRC research programme has contributed to the initiative’s objectives and activities and connected with the Millennium Development Goals via its focus on improving educational evaluation and quality in both rural and urban areas in China: improvements to school evaluation methods will stimulate, inform and enhance processes and initiatives aiming to raise student access, outcomes and educational quality - key factors in the drive towards poverty alleviation.

Effects on the IEEQC project resulting from participation in this programme have been noted in terms of PI and project researchers developing closer academic links with other researchers funded by DFID or similar research programmes and also in terms of gaining additional opportunities to contribute to networking and dissemination events.

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3. EARLY AND ANTICIPATED IMPACTS

a) Summary of Impacts to date

Please summarise any impacts of the project to date, referring where appropriate to associated outputs recorded on *ESRC Society Today*. This should include both scientific impacts (relevant to the academic community) and economic and societal impacts (relevant to broader society). The impact can be relevant to any organisation, community or individual. [Max. 400 words]

Scientific Impact: Significant advances in empirical understanding, theory and application are demonstrated via the project findings, particularly with regard to rigorous new evidence on school effectiveness, associated explanatory factors and the relevance of value added methods to evaluate school performance in China. Building new research capacity, contribution to networks and regular dissemination is also demonstrated, for example:

- 2008-present UOB China Educational Research Network (CERN) convened to disseminate cutting edge research among Bristol/UK/China academics and students. Project aims and findings have also been introduced in GSOE Masters and Doctoral level teaching in Bristol and Hong Kong (Thomas).
- “Methods to Evaluate Educational Quality and Improvement in China” - an invited book chapter will be published 2011 by Routledge and Beijing Normal University Press.
- A keynote (Thomas) and two additional papers (Wu, Ren, Peng, Li) outlining the IEEQC project findings were presented at the 3rd International Conference on School Effectiveness and Improvement in China, Shenyang (2010). IEEQC project findings have also been disseminated at international conferences including: AEA-Europe (2009), EARLI (2010), ICSEI (2011).

Economic and societal impact: engagement with potential users and beneficiaries of the research and evidence of impact on policy and practice to improve approaches to evaluate educational quality in China is demonstrated, for example:

- The IEEQC project website (<http://ieeqc.bristol.ac.uk>) provides details of the project aims, participants and activities.
- Meetings have been held with influential national policy makers in China to discuss the project aims and findings including: Prof Xiaoman Zhu, Director UNESCO International Research and Training Center for Rural Education, Beijing; Prof Tao Xiao, Co-director MOE National Assessment Centre, Beijing Normal University; Prof Yuan, President CNIER and National Inspector.
- Five IEEQC dissemination conferences have been organised (2 Beijing, 3 provincial; 500+ participants). Additional IEEQC seminars have been organised by Yuxi Municipal Education Bureau, Yunnan Province and Beijing Academy of Educational Sciences (200+ participants).
- CNIER collaborators (Tian, Li, Wu) have discussed project findings at various educational forums including: DFID workshop Beijing (2010); 6th Jiangsu International Forum for School Principals, Jiangsu (2010); Conference on Educational Evaluation, Qing Yang district, Sichuan province (2010).
- CNIER collaborators (Tian and Ma), as members of the MOE national educational reform working groups in China, have been able to inform new policy developments directly regarding IEEQC project findings. The format of a new national student database in China is currently being discussed.

See outputs listed on *ESRC Society Today*.

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b) Anticipated/Potential Future Impacts

Please outline any anticipated or potential impacts (scientific or economic and societal) that you believe your project might have in future. *[Max. 200 words]*

It is anticipated that scientific and economic and societal impacts will continue to be demonstrated in line with evidence presented above, for example via:

- Conference papers submitted for publication in academic journals such as BERJ, SESI and Educational Research (China) or as invited chapters in books (eg Chapman et al (Eds.) (2012) Challenging the orthodoxy? Perspectives on school effectiveness and improvement research policy and practice, NL: Springer.)
- Invited seminar at China Ministry of Education hosted by National Inspection team.
- PI, Co-I and CNIER collaborators (Tian and Ma, as members of the MOE national educational reform working groups in China), will continue to disseminate project findings widely and inform new policy developments directly regarding IEEQC project findings especially in terms of providing relevant evidence of lessons learned and the data requirements for a new national/regional student database in China that could be employed to create a “value added” system of school performance indicators.
- Enhanced research capacity of CNIER and LEA researchers in terms of understanding and adapting value added approaches for school evaluation purposes in China.

You will be asked to complete an ESRC Impact Report 12 months after the end date of your award. The Impact Report will ask for details of any impacts that have arisen since the completion of the End of Award Report.

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4. DECLARATIONS

Please ensure that sections A, B and C below are completed and signed by the appropriate individuals. The End of Award Report will not be accepted unless all sections are signed.

Please note hard copies are NOT required; electronic signatures are accepted and should be used.

A: To be completed by Grant Holder

Please read the following statements. Tick ONE statement under ii) and iii), then sign with an electronic signature at the end of the section.

i) The Project

This Report is an accurate overview of the project, its findings and impacts. All co-investigators named in the proposal to ESRC or appointed subsequently have seen and approved the Report.	<input checked="" type="checkbox"/>
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ii) Submissions to *ESRC Society Today*

Output and impact information has been submitted to <i>ESRC Society Today</i> . Details of any future outputs and impacts will be submitted as soon as they become available.	<input checked="" type="checkbox"/>
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OR

This grant has not yet produced any outputs or impacts. Details of any future outputs and impacts will be submitted to <i>ESRC Society Today</i> as soon as they become available.	<input type="checkbox"/>
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OR

This grant is not listed on <i>ESRC Society Today</i> .	<input type="checkbox"/>
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iii) Submission of Datasets

Datasets arising from this grant have been offered for deposit with the Economic and Social Data Service.	<input type="checkbox"/>
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OR

Datasets that were anticipated in the grant proposal have not been produced and the Economic and Social Data Service has been notified.	<input checked="" type="checkbox"/>
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OR

No datasets were proposed or produced from this grant.	<input type="checkbox"/>
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