Leading education and social research

Institute of Education
University of London

Research at the Institute of Education 2010

Contents

"The last 12 months have seen the IOE consolidate its position as the UK's leading provider of research in education and related areas of social science. In these challenging times, it is more important than ever that we have high quality research to help us find ways to improve the lives of individuals and communities."

GEOFF WHITTY, DIRECTOR

The Institute of Education (IOE) is one of the world's leading schools for education and social sciences. In addition to our postgraduate and post-experience teaching activities, we now undertake around a quarter of the education research carried out in UK universities. We are also the second highest recipient of social science research funding among UK higher education institutions.
In the 2008 Research Assessment Exercise (RAE), we were placed in the top 10 of UK research universities, with the highest proportion of world-leading research in the field of education.

Our goal for the next three years is to continue to help improve the quality of life of individuals and societies through our work in education and social research. While our taught programmes are training and developing key people to help meet this goal, our research will make the new discoveries and contribute to understanding the new processes which provide the backbone to improving people's lives in the UK and around the world.

This brochure introduces only a small proportion of the research currently being undertaken at the IOE. More information on our research is available at www.ioe.ac.uk/research

PROFESSOR MICHAEL REISS
ASSISTANT DIRECTOR,
RESEARCH, CONSULTANCY AND KNOWLEDGE TRANSFER

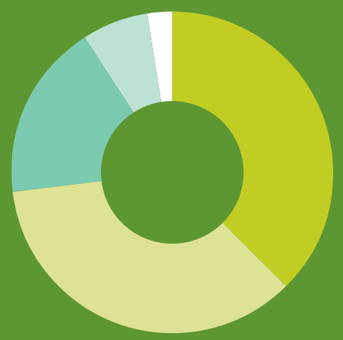
Research at the IOE in 2008–09

Our total funded research income for 2008–09 was £21.8 million, an increase of almost 20 per cent on 2007–08. Research councils now account for 38 per cent of our total research funding, reflecting the Institute's recent high success rate in winning research council funding, with many new projects starting in 2008 and early 2009. Non-UK funders provided 5 per cent of funding, with EU sources accounting for £639,437 (3 per cent) and non-EU sources providing £359,794.

There were 276 research projects in progress during 2008–09, and 103 new research contracts started. Almost 250 proposals for new research projects were submitted to funders, with 130 (53 per cent) awarded. Proposals to UK government departments and other public bodies were particularly well-received, with a 72 per cent success rate.

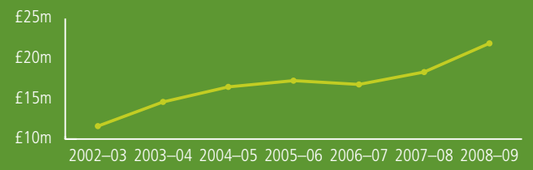
Research funding as a whole (including grants for individual projects, core research funding from HEFCE and specific capital grants) amounted to almost £32 million in 2008–09. This made up 41 per cent of the Institute's total income, an increase on the 2007–08 contribution of £28.1 million (40 per cent of total income).

Research income by source 2008–09

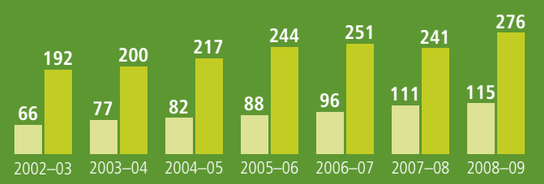


- Research councils £8,251,777
- UK central government £7,760,071
- UK based charities £3,920,798
- Other grants £1,447,878
- European government £529,754

Total funded research income

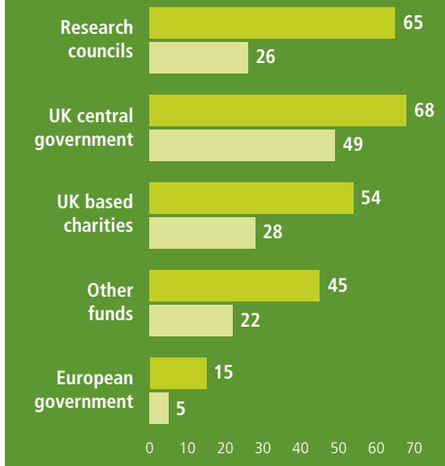


New and active research projects



- Number of externally funded projects started during the year
- Number of externally funded projects active during the year

Outcomes of research proposals 2008–09



www.ioe.ac.uk

Effective pre-school, primary and secondary education (EPPSE)

What we are finding out

The Effective Provision of Pre-school Education (EPPE) project was originally commissioned to investigate the impact of early experiences on children's cognitive and social/behavioural development. Since its inception, the project has evolved into a programme of research (EPPSE) which has explored the contribution of child, family, the home learning environment and pre-school, primary and secondary school factors to a range of child outcomes. This has included research into what makes for a good transition from primary into secondary school and what kind of pre-school and primary school processes and practices make a difference to children's achievement and progress. Over 12 years, we have provided evidence which has informed government policy on the development of services for young children and their families.

During the pre-school phase, the project showed the contribution to children's long-term development of:

- children's characteristics (e.g. gender, premature birth weight)
- family characteristics (e.g. socio-economic status, mothers' qualification levels)
- the quality of the early home learning environment (e.g. how many times a child is read to)
- the quality of pre-school and the qualification levels of those who work with young children
- the interaction between the quality of the pre-school and the duration effect (how long children spend in pre-school).

During the primary school phase, the project explored not only the enduring impact of the quality of pre-school but also the contribution of primary schooling and interaction with home influences on children's development. Quantitative data have shown which background factors (early years home learning environment, quality of pre-school) are still showing statistical significance at the end of primary school. The qualitative data have helped to illuminate which classroom practices (e.g. teacher positivity) can lead to better child outcomes. In-depth case studies have also shown what kind of social capital and family support helps children 'succeed against the odds', and has important messages for families from more disadvantaged backgrounds.

How the work is being undertaken

The study combines quantitative analyses with in-depth qualitative examination of what really makes a difference to children's lives. This mixed-method approach enables us to answer a broader range of research questions than would be possible through a more limited methodology.

Children have been tracked since joining the project, aged 3, and the oldest have just left compulsory education, aged 16. The project is set to follow all the children to their post-16 destinations.

Over 12 years, we have used a combination of one-to-one assessments, standardised tests and national assessments to explore cognitive outcomes. Social behaviour has been monitored regularly by those in settings and schools who know the child best. We regularly undertake questionnaires and interviews with all those associated with the project: students, pre-school and school staff and local authority personnel. In addition, the project has conducted structured observations in both pre-school and primary school settings.

The main analyses adopt a 'school effectiveness' or value added approach to data, using information from 3,000 children and their families, 141 pre-schools and over 700 primary and secondary schools. Multi-level modelling techniques have enabled us to report on the impact of background variables both singly and in combination. The project has a particular focus on issues of social equity, and much of our most recent reporting has been concerned with identifying strategies to help understand and narrow the 'achievement gap' and support young children from more disadvantaged families.

The project team is currently conducting the secondary school phase of the research, and will be reporting on this in 2013.

The project has produced a range of technical papers, research reports and briefs, academic papers and other outputs: see http://eppe.ioe.ac.uk

Funder
Department for Children, Schools and Families (ESRC/TLRP associate project)

Budget
£8,630,707

"CUREE is delighted to be able to access the EPPSE outputs. The quality of the work is outstanding, and really interesting and useful for teachers. There's something completely compelling about the mix of types of data, the rigour in the analysis, the commitment to researching over the long haul and the clarity of focus on the young people's learning and development and the work of those who support them."

PHILIPPA CORDINGLEY, CENTRE FOR THE USE OF RESEARCH AND EVIDENCE IN EDUCATION

Project team

Principal investigators
Iram Siraj-Blatchford, Brenda Taggart (IOE); Pam Sammons, Kathy Sylva (University of Oxford); Edward Melhuish (Birkbeck)

Researchers
Aziza Mayo, Katalin Toth, Wesley Welcomme (IOE)

Dates
November 1996 to December 2013

Funder
Economic and Social Research Council

Budget
£780,509

Project team

Principal investigators
David Buckingham, Andrew Burn (IOE)

Researchers
Becky Parry, Mandy Powell (IOE)

Dates
January 2009 to December 2011

"This important project is the first to explore systematically how children's media understanding develops, how their identities are shaped by their responses to media, and ways in which the formal curriculum might both validate and extend their out-of-school media knowledge. It's an invaluable opportunity to construct informed theoretical perspectives and curriculum innovation based on real evidence rigorously gathered by leading researchers, and it will make an enormous contribution to the field."

MICHAEL SIMONS, ENGLISH AND MEDIA CENTRE

What do children need to learn about the media?

What we are finding out

Today's children are growing up in a world that is saturated with media. On average, they spend more time watching television than they spend in school; and if we add to this the time they spend with film and video, pop music and magazines, the internet, computer games and mobile communications, there can be little doubt that the media are an enormously significant aspect of their lives.

The media play a key role in shaping attitudes and defining identities, in providing opportunities for learning and in creating the conditions for public life. If children are to respond to the many challenges and possibilities that the media provide, they need new skills, knowledge and understanding – new forms of contemporary literacy.

Schools have a crucial role to play here. Teachers have been developing media literacy in schools for many years, both by means of specialised media studies courses with older students, and through incorporating elements of media education in a range of other curriculum areas.

This project is the first large-scale systematic research study of the practice of media education in schools. The specific aim is to develop a model of learning progression in media education. This model will specify what children of different ages might be expected to understand about media; and how their learning could develop over time, and in the course of a sequence of learning activities. The research began with a working definition of media literacy, and aims to test and further develop this in the light of classroom experiences.

Bringing popular media into the classroom is far from straightforward. On one level, it can help to overcome the divide between school culture and the culture of the home and the peer group, and hence make the curriculum more relevant to students' interests and experiences. Yet media education also raises complex questions about what counts as legitimate knowledge and about the power-relationships between teachers and students. While the research aims to provide a secure evidence base for future practice, it also seeks to explore some of the contradictions and complexities at stake.

How the work is being undertaken

We are working with teachers of children aged six to sixteen from a range of socio-economic backgrounds, exploring the development of media literacy by following parallel groups of students over a two-year period. We are collaborating closely with teachers in two of the UK's leading specialist schools for media arts and their feeder primary schools to develop teaching strategies and materials, to implement these and to study the outcomes.

We have devised classroom activities on key media education themes – such as narrative, representation and 'media language' – covering a range of media, including advertising, film and television, news media and computer games. We are now exploring how students engage with these activities, using surveys, interviews and classroom observations; and analysing how these students learn in the light of broader psychological and socio-cultural theories of learning.

The analysis will focus on two key themes. First, it will explore how media education relates to – and potentially builds upon – what students already know about media. This means looking at the different types of informal knowledge about media that students acquire outside school, and how this relates to the formal knowledge they encounter in the classroom. Secondly, it will look at the relationships between different communicative 'modes' in media education – for example, looking at how students move between verbal language and other forms of communication such as visual images. In doing so, we will explore the relationship between the two key dimensions of media education: critical media analysis and creative media production.

The findings of the project will be disseminated nationally and internationally through academic publications, professional development and teaching materials, and national and international conferences in association with the Media Education Association.

Fitting food into the lives of working families with younger children

What we are finding out

Good nutrition is crucial for younger children, as it is likely to affect their health over the long term. Recent research suggests that healthy eating policies should take into account changing patterns of contemporary family life. Women remain disproportionately responsible for food work, and therefore the continued rise in mothers being employed – and in fathers working at the same time as mothers – may be especially important.

This study aims to find concrete evidence behind the suggested link between parental employment and children's weight and diets. We are examining children's diets and food practices in working families, but also taking into account that younger children actively make food choices and that they do so in a range of contexts including the home, childcare settings and school.

Our key questions are: is there evidence for a relationship between parental employment and children's diets? How do the demands of 'work' and 'home' shape and influence family food practices? What foods do the children of working parents eat in different contexts – home, childcare settings and school? How do children negotiate food practices? We also aim to develop a methodology by which qualitative research is linked to an existing large-scale survey.

The study will inform advice on healthy eating by presenting to policy-makers and practitioners evidence which enables them to re-evaluate the appropriateness of existing campaigns to the experiences of employed families.

How the work is being undertaken

We are drawing on a mix of disciplines (anthropology, sociology and social statistics) and research fields (including the 'new social studies of childhood', family studies, childcare research and the study of food practices) to achieve our objectives and complement the Food Standards Agency's existing work in nutrition, dietetics and physiology.

Exploiting the knowledge and capacities of the research team, the study has a mixed methods design. In order to examine the associations found in other studies between overweight children, diet and parental employment, we are analysing three large-scale datasets: the 2009 National Diet and Nutrition Survey (NDNS), the Health Survey for England (HSE) and the Avon Longitudinal Study of Parents and Children (ALSPAC).

To seek understandings of the meanings and uses of food in working families, the embodiment of food practices and how they are embedded in different social contexts, we are also drawing a sample of 48 employed families who have children aged between 18 months and 10 years from the NDNS (and from other sources, if sufficient numbers cannot be accessed through NDNS).

This intensive study employs a range of qualitative methods, including interviews with parents and drawing and photo elicitation with their children. Photo elicitation is an interview method which involves using photographs to encourage interviewees to talk. It is increasingly employed in sociological and related research, particularly with children and other marginalised groups. It reduces the need for linguistic competence, and enables participants to take a lead in the interview.

Using these methods, the study will elucidate the social processes which influence healthier and less healthy diets of children within and outside the home. In addition, the qualitative part of the study seeks to provide explanations for statistical associations found (or not found) in the survey data.

Funders
Economic and Social Research Council and the Food Standards Agency

Budget
£367,115

Project team

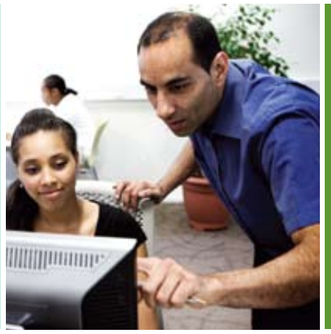
Principal investigator
Rebecca O'Connell (IOE)

Researchers
Julia Brannen, Abigail Knight, Ann Mooney, Charlie Owen, Antonia Simon (IOE)

Dates
October 2009 to September 2011

"This study will be of enormous value to early years practitioners and to those who work on food and nutrition issues. Currently there is a lot of policy activity around healthy eating guidelines for children in nursery settings, and a study like this will be able to inform this work with robust evidence."

SUE OWEN, NATIONAL CHILDREN'S BUREAU



Funder
European Commission

Budget
£1,882,483

Project team (IOE)

Principal investigator
Candia Morgan (IOE)

Researchers
Niall Winters,
Ken Kahn,
Jehad Alshwaikh,
Dusanka Nicolic (IOE)

International project coordinator
Chronis Kynigos, National and Kapodistrian University of Athens

Dates
December 2005 to May 2009

"A particular strength of the innovative ReMath project lay in the common conceptual framework that was built to support effective cooperation between these teams, recognising that they were working within different theoretical traditions and educational cultures."

KENNETH RUTHVEN, UNIVERSITY OF CAMBRIDGE

ReMath – representing mathematics with digital technologies

What we found out

This international project, consisting of seven teams from four European countries, has contributed to understanding how the design of technological tools for mathematics teaching is related to the ways these tools are actually used. It has provided detailed insights into student interactions and learning with a range of tools. We found that the local curriculum, prevailing beliefs and approaches to teaching, and other cultural and institutional factors affect the ways in which novel representations of mathematical concepts can be incorporated into pedagogical planning and classroom practice.

The IOE team used a digital dynamic artefact (DDA) called MoPiX, which enables students to build and animate models using equations, with a group of UK A level mathematics students. At the same time, a team in Athens used MoPiX with a group of vocational students.

MoPiX enabled both groups to use mathematical notations effectively to control their animations. The different ways in which students engaged with the software were related to their previous mathematical experience, to the expectations of the UK and Greek curricula and to the relationships between the researchers and teachers in the colleges.

Our project makes sense of the proliferation and variation in results of (usually small-scale) studies of technological innovation around the world. The outcomes also explain why there is often a gap between the benefits to learning which these studies demonstrate, and the general lack of success in translating these results into widespread use and positive effects in schools.

The international project team developed a theoretical and methodological framework. This allowed research into the design and use of technological tools for mathematics education to be understood and disseminated more effectively even when it is undertaken from different theoretical perspectives and in different cultural contexts.

We also produced a web-based pedagogical planning tool, which makes explicit the theoretical and practical principles underpinning the design of sequences of lessons. The plans produced using this tool have been adapted for teachers and translated into five languages.

How the work was undertaken

The seven research teams brought to the project a range of different theoretical perspectives on mathematics learning and the role of technology, as well as different cultural contexts and research traditions. Four of the teams also brought with them dynamic digital artefacts (DDAs) for learning mathematics, which were further developed during the project. The IOE's DDA, MoPiX, was newly developed for the project.

Classroom experiments were made with each of the DDAs using a methodology of 'cross-experimentation', initially developed during a previous project involving the same teams. Each DDA was used by the 'familiar' team – the team involved in its development – and by an 'alien' team – one of the other project teams from a different country.

All of the experiments addressed the same research question: 'How can the representations identifiable in the DDAs be related to the achievement of specific educational goals?' However, this question was interpreted and elaborated differently by each team, reflecting their theoretical orientation, their local research practices and the educational goals of their experiment. The project rigorously gathered information about the specific methods, assumptions and priorities of each of the teams and their experiments. This information allowed the results of each pair of cross-experiments to be compared and analysed jointly, illuminating the sources of commonality and difference in the outcomes.

In the case of the IOE team's work with MoPiX, A-level mathematics students created moving objects on the computer screen and controlled them using equations. As they did this, they learned about vectors, velocity and acceleration.

The 'alien' team from Athens used MoPiX with vocational students in a college of further education. These students were given a partially programmed model simulating 'juggling' a ball; they adapted this model to make it work and designed enhancements. Through this activity they developed deeper understanding of the equations they had to use, as well as developing their design skills.

Single-sex and co-educational schooling: lifecourse consequences?

What the project found out

Throughout the 20th and early 21st centuries, opinion has been divided in Britain about whether it is better to have mixed or single-sex schooling at secondary level. Supporters on both sides of the argument hold passionate views and make many assertions about the consequences of different experiences.

This project found that at age 16, girls in girls' schools were more likely to gain maths and science A-levels, and boys in boys' schools more likely to gain A-levels in English and modern languages than their peers in co-educational schools. Girls and boys in single-sex schools also had more confidence in their ability to do well in these subjects.

We found that this pattern carried through to university, with women from girls' schools more likely than co-educated women to gain qualifications in subjects typically dominated by men.

While girls at girls' schools were more likely than girls in mixed schools to gain five or more O-levels at grades A to C, this advantage did not carry through to further and higher education. Single-sex schooling did not increase the likelihood of getting a university degree, or of entering high-status occupations, but it did lead to higher salaries among women.

Our other findings showed that boys in boys' schools were more likely to dislike school than boys in co-ed schools, but both sexes were less likely to truant in single-sex schools.

Single-sex schooling appeared to have no impact on the likelihood of marriage or childbearing, or on the quality of partnerships formed. Neither did it appear to affect the division of labour in the home, nor attitudes to women's work outside the home. However, men who had attended single-sex schools were more likely to be divorced by age 42.

How the work was undertaken

Much of the previous evidence for and against mixed schooling has been based on personal experiences and small-scale studies conducted over short time periods. Even bigger surveys have rarely had sufficiently large and representative samples to control for differences in the social class backgrounds of pupils and their academic abilities, nor have they distinguished adequately between the possibly different effects of mixed and single-sex schooling on boys and on girls.

By contrast, this study was able to investigate both the short- and long-term consequences of single-sex schooling using longitudinal birth cohort data. The National Child Development Study (NCDS) is a continuing, multi-disciplinary longitudinal study which takes as its subjects all the people born in one week (more than 17,000) in Britain in 1958. We have rich information on the schooling and social background of these individuals, who have been followed into middle age.

We were able to control for a range of factors, including the cohort members' early test scores, social class backgrounds, parental education, and so on, in order to isolate the effects of single-sex schooling for girls and boys. About a quarter of our sample attended single-sex schools, which were common in both the private and state sectors during the 1970s, when our cohort attended secondary school. Our findings concerning the differences in outcomes between single-sex and co-educational schooling emerged in regression analyses controlling for both home background and the cohort members' own characteristics prior to age 11.

Completed in summer 2006, this project has generated articles in a number of academic journals, and continues to attract interest among teachers and parents and to gain substantial media attention. A number of articles appeared in the national press in late 2009, including "Girls alone 'are saved from the teen jungle'... but boys alone 'pay the price later in life'" (*Daily Mail*, 2 December 2009) and "Are single-sex lessons best?" (*Guardian G2*, 2 December 2009).

Funder
Economic and Social Research Council

Budget
£45,415

"This is perhaps the most comprehensive study ever conducted into the consequences of single-sex schooling, dealing as it does not just with academic outcomes, but also with a range of other social, psychological and economic outcomes. The team have provided vital evidence to practitioners, policy-makers and parents."

JACQUELINE SCOTT, UNIVERSITY OF CAMBRIDGE

Project team

Principal investigator
Diana Leonard (IOE)

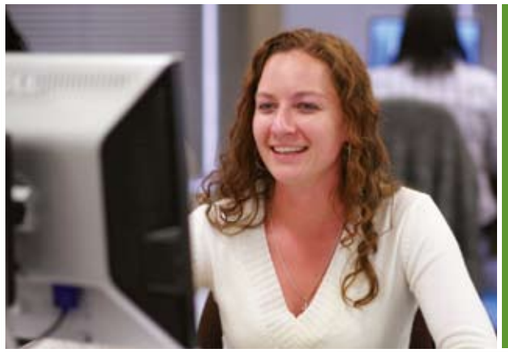
Researchers
Heather Joshi, Alice Sullivan (IOE)

Dates
March 2005 to July 2006

"This is important research that needs to be in the public domain. It provides clear evidence based on rigorous analysis of high quality data."

ANGELA DALE, UNIVERSITY OF MANCHESTER

Funders
Economic and Social Research Council and the Jacobs Foundation



"Bringing together psychologists and sociologists to think about this very important transition phase has created the opportunity to do truly interdisciplinary work."

JACQUELYNNE ECCLES, UNIVERSITY OF MICHIGAN

Budget
£1,305,009

Project team

Principal investigator
Ingrid Schoon (IOE)

Researchers
Julie Ashby, Helen Cheng, Kathryn Duckworth (IOE)

Dates
January 2008 to December 2011

"The project has contributed to a better understanding of youth transitions in a changing socio-historical context, and has been instrumental in rethinking current policy conceptions about the transition to adulthood."

PRIME MINISTER'S STRATEGY UNIT, CABINET OFFICE

Becoming adult in a changing world

What we found out

The transition to adulthood should no longer be conceptualised as a predetermined passage from school to work, or singlehood to marriage. What we need are new perspectives to look more deeply into the variations in transition experiences among young people who have to navigate transitions across multiple contexts. Focusing on combinations of multiple social roles occupied by individuals at different points of their life course – involving, for example, education, work and family commitments – will bring a better understanding of the competing demands shaping these individuals' lives.

Our comparison of the experiences of three British Birth Cohorts born in 1958, 1970, and 1989–90 showed a polarisation between two groups. Those who can afford to invest in further study usually take a slower route to adulthood involving longer education and the delayed assumption of adult roles; and those who follow the traditional fast-track transitions leave school at the minimum age, followed by an early entry into the labour market and family formation. Each pathway requires different strategies to successfully meet the ensuring demands and can lead to different, yet equally positive, outcomes as measured in terms of life satisfaction, feelings of being in control, and mental health.

The findings highlight the need to consider differences in transition experiences, the need for more flexible and diversified life course models, and the need for broader definitions of 'successful' transitions, taking into account variation in resources among different subgroups of the population.

The project will continue until 2011 in the first instance. A number of articles have already been published in academic journals, as well as the book *Transitions from School to Work: Globalisation, individualisation, and patterns of diversity*.

How the work is being undertaken

The project is based within the ESRC-funded LLAKES Centre (Centre for Learning and Life Chances in Knowledge Economies and Societies), focusing in particular on education to work transitions and the role of individual agency in shaping life course transitions. For more information, see www.llakes.org

The work is based on comparative secondary analysis of large-scale longitudinal studies, on both a national and international level. It involved careful preparation of the data to yield comparative measures and indicators, and use of state-of-the art methodology to map patterns in the timing and sequencing of education, employment and family transitions (including, for example, structural equation modelling, latent class analysis, and sequence analysis).

A particular focus of the work is on the role of individual motivation and aspirations for the future, which were assessed during adolescence and then linked to outcomes in adulthood. Indicators of individual agency during adolescence include school motivation, education and occupational aspirations, as well as the values and importance young people attach to their plans for the future. Adult outcomes include aspects of educational and occupational attainment, health and well-being, as well as civic participation and social attitudes.

We received co-funding for the project from the Jacobs Foundation, which enabled us to expand the research to an international collaborative network with colleagues from the Universities of Michigan, Stockholm, Helsinki, Berlin, Tuebingen and Jena. For more information, see www.pathwaystoadulthood.org

Research funders include:

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Academy of Medical Educators

Holocaust Educational Trust

Esmee Fairbairn Foundation

JACOBS FOUNDATION

Every Child a Chance Trust

Medical Research Council

BBC

Department of Health

RNIB
ROYAL NATIONAL INSTITUTE FOR BLIND PEOPLE

Ford Foundation

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Department for Business, Innovation and Skills

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ECONOMIC AND SOCIAL RESEARCH COUNCIL

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EUROPEAN COMMISSION

Arts and Humanities Research Council

Ministry of Education Mexico

BUPA Foundation

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