

Research in Connection with Policy Issues

Research Projects FY2020

Research Projects are the research activities, conducted by project teams composed of researcher both inside and outside NIER, through which NIER sets its research agenda for administrative policy issues. The research period is about two to five years.

Field	Research Topic	Research period
Educational Administration and Finance	Study on educational effect	FY2018 - FY2020
	Understanding Issues in Making and Implementing Evidence-based Education Policies	FY2019 - FY2021
Elementary and Secondary Education	Empirical study on the formation of school curricula	FY2017 - FY2021
	Study on growth and learning, and the quality of the learning process from infancy	FY2017 - FY2022
	Study of educational reforms in response to developments in advanced information technology	FY2019 - FY2021
	Study on school spaces from the viewpoint of recognition of safety and security of students	FY2019 - FY2020
	Study on the development of social and emotional skills and the environmental impacts: from the perspective of the feasibility of use in education and school improvement	FY2020 - FY2023
Educational Staff	Study on verification of educational policies in the allocation of teachers and other matters	FY2016 - FY2020
Higher Education	Study on trends in higher education participation of upper secondary school students	FY2020 - FY2022

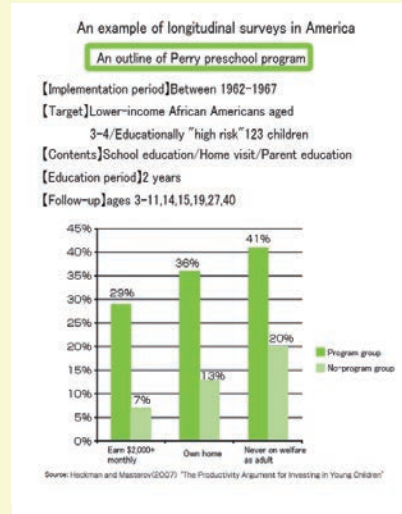
Study on educational effect (FY2018-FY2020)

Project Leader / Director of the Department of Research Planning and Development

Summary of the study

We aim to explore the feasibility of conducting a long-term longitudinal study and accumulate knowledge and experience of the management of such study. Based on the data collected in the trial study, we will examine the influences of the pre-school education and childcare facility environment, the parenting views of the parents, and parent-child relationships, and other influences on subsequent development for children. We will also aim to provide a perspective that will be useful for the improvement of the school education system. Specifically, we will extend the previous longitudinal study of 2- and 3-year-olds (Project research, "Research on the Effects of Education [FY 2015-2017]") to cover the same students through ages 4 to 6. We will also perform a study of the schools attended by those students.

In FY2020, following on from previous project research, we will be conducting a follow-up survey of 1st grade elementary school students (6 years old at the beginning of the academic year/5th period), and also plan to conduct a cognitive test. We also plan to conduct an elementary school survey that includes questions about educational policies, the educational facilities and environment and the educational curriculum of the relevant local government.



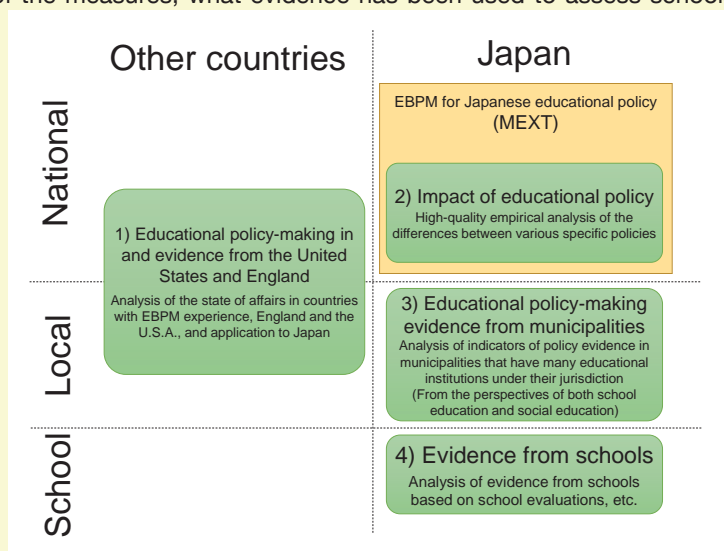
Understanding Issues in Making and Implementing Evidence-based Education Policies (FY2019-FY2021)

Project Leader / Director of the Department for Educational Policy and Evaluation Research

Summary of the study

The concept of evidence-based policy making has been gaining prominence in education yet the issues in both making and implementing the evidence based policies have not yet been systematically examined. NIER is undertaking research that explores various administrative arrangements in national, local, and some overseas institutions with the aim of redressing the situation. The research has four main focuses: how evidence-based education policy making is currently executed in England and the United States; how effective the measures taken by the institutions have been when implementing the policies; what evidence the local governments have used in order to evaluate the effectiveness of the measures; what evidence has been used to assess schools and how the effectiveness of the chosen evidence may influence further policy making at local governments.

In FY2020 the research will carry out literature review of existing studies and collecting documents and information about the institutions as well as the policies. This will be followed by visits to a number of schools and boards of education. In addition, questionnaires will be sent out to a number of boards of education in order to identify what indications are considered to be suitable evidence to be used in policy making. The research will also analyze various survey data and existing data owned by relevant organizations.



Empirical study on the formation of school curricula (FY2017- FY2021)

Project Leader / Director of the Curriculum Research Center

Summary of the study

We will conduct empirical research on school-based curriculum development in preparation for revisions to national curriculum standards. Specifically, we will provide basic data in three core areas: 1) Empirical research on curriculum management in schools; 2) Multidimensional research on competencies required to address the contemporary issues for creating a sustainable society; and 3) Analysis of educational trends in foreign countries and empirical research at MEXT-designated pilot schools for research purposes.

In FY2020, regarding the above (1), we will be organizing the issues and challenges for improvement of curriculum formation based on outstanding case studies in Japan and the results of surveys on the curricula of other countries. With regard to (2), we will be conducting cross-disciplinary unit development aimed at developing the competencies required to respond to contemporary issues such as scientific literacy and citizenship, and research on information literacy including programming education. In addition, with regard to (3), in relation to the trends of curriculum reform in other countries, we plan to conduct a comparative research on foreign countries in collaboration with research experts in each countries.

Curriculum management that connects each subject with the Sustainable Development Goals (SDGs)

First Grade	April	May	June	July
Global Citizenship Education	orientation			
Learning contents	Workshop experiences ("If the world were a village of 100 people", International cooperation, Issues such as water and food shortages)			
Competencies	Multicultural coexistence Finding and solving problems			
Japanese language	Write down and examine self-introduction	"Hana kurori no makou" (Over the flowery clouds) Appropriate explanations	"Daikon wa okina kon?" (Is a white radish a big root?) Speech, approaches to information gathering	Let's collect words!
Learning contents	Collecting and analyzing information	Writing with a focus	Reading and comprehending necessary information	Writing a letter of recommendation using everyday life as the topic
Competencies	Collecting materials	Expressions and transmission	Collecting materials	Expressions and transmission
Mathematics	Positive and negative numbers			
Learning contents	Four operations with positive and negative numbers		Use of positive and negative numbers	
Competencies	(through the year) Finding/ setting problems, solving problems			
Science	The world of plants	The world of plants	Substances around us	
Learning contents	Structure of flowers	Roots, stems and leaves photosynthesis	Plant companions	Classification of substances
Competencies	Collecting materials and solving problems	Collecting materials and solving problems	Finding/ Setting problems	
Social studies	Appearance of the world	World lifestyle	Ancient civilizations	Ancient Japan
Learning contents	Globe and world	World climate zones	The Four Great Civilizations	Prince Shotoku's Polices

Source: Excerpt from "Report 1: Practices of Curriculum Management at Pilot Schools" (March 2020)

Study on growth and learning, and the quality of the learning process from infancy (FY2017-FY2022)

Project Leader / Director of the Early Childhood Education Research Center

Summary of the study

The objective of this study is to obtain basic knowledge of the significance of pre-primary and primary education and the impact of the quality of early childhood education and care (ECEC) on subsequent growth and learning, by conducting a longitudinal study of children from pre-primary to primary education period. In particular, we aim: (1) to grasp a better picture of socio-emotional skills which sustain children's growing and learning by long-term monitoring throughout pre-primary to primary period, and (2) to examine how to assess the quality of the learning process in early childhood education and how to utilize the assessment.

In FY2020, we will be conducting a survey of home-room teachers and parents of the 1st grade children at around 400 elementary schools where the children, whose parents and ECEC teachers have participated in the same survey for 3years from 92 pre-primary institutions, are enrolled. In addition, we plan to conduct an academic achievement test (Japanese language and mathematics) of the children at 5 schools, where part of the children participated in the past measurement interviews on their cognitive development. Furthermore, in order to confirm the relation between the results of the earlier interviews and the outcomes measured by the academic achievement test this time, we will continue to conduct interviews of the children at a few of the elementary schools. An interim report on this surveys carried out from FY2017 to FY2019 will be published in FY2020.



"Look!" Playing with colored water

Study of educational reforms in response to developments in advanced information technology (FY2019-FY2021)

Project Leader / Director of the Department for Elementary and Secondary Education Research

■ Summary of the study

In order to provide research findings that contribute to educational reform policies aimed at improvements to education quality by actively incorporating ICT, AI, and other advanced information technology into school education, we will organize the issues in need of consideration in order to utilize advanced information technology, clarify the conditions needed for educational reforms adapted to progress in IOT technology, and develop research methods.

In FY2020, continuing on from last year, we will be holding symposiums and carrying out research exchanges, and promoting research on the principles of utilization of advanced information technology in education, the big data utilization model and research on educational evaluation using CBT. In addition, we will be conducting research on the feasibility of providing education and support, which considers the diverse needs of children, through the utilization of advanced information technology. Furthermore, we will be working on the development of a low-cost device that measures the mental workload of the teachers during the lessons using open source hardware and will be examining the possibility of new lesson study according to advancements in information technology.



Kick-off symposium (held on July 9, 2020 Panel discussion)



Phase 1 symposium (held on February 3, 2020, Address by Nakagawa Takeo, Director-General of NIER)

Study on school spaces from the viewpoint of recognition of safety and security of students (FY2019-FY2020)

Project Leader / Director of the Educational Facilities Research Center

■ Summary of the study

We investigate the following:

- How school users such as teachers and children evaluate safety such as prevention of daily accidents at school
- How the Board of Education and schools work together to ensure school safety

In addition, the aim of the study is to contribute to create a safe and secure school space effectively by focusing on what points should be emphasized when implementing aging measures and longevity repairs on the aging school facilities: about 70% of all public elementary and junior high school facilities. We will make a suggestion as to whether it can be achieved.

In FY2020, we will be conducting visits and a survey, and from the results of analysis, we will be clarifying the impact of the physical environment of the school facilities such as the size and brightness of the space, the newness of the facility on the safety evaluations of the school facility users and on facility use, as well as the methods of communication among the relevant parties, and will be proposing future measures for improvement of the school facilities.



Example of usage of a school space (scene where children are learning)

Study on the development of social and emotional skills and the environmental impacts: from the perspective of the feasibility of use in education and school improvement (FY2020-FY2023)

Project Leader / Director of Guidance and Counseling Research Center

■ Summary of the study

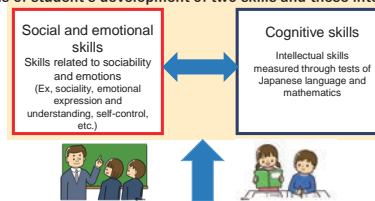
This study focuses on student's development of social and emotional skills which contain sociability, comprehension and handling of emotion. It has reported that both social and emotional skills and cognitive skills such as numeracy and literacy have important role in our lives (OECD,2015).

In order to examine the development of student's those skills and its' effects of school and family life, we will be conducting follow-up surveys of students, their parents and their classroom teachers, from the 6th grade of elementary school to the 1st grade of lower secondary school.

In addition, we will conduct literature research focusing on efforts in the U.S. and other countries to collect and analyze data on multiple indicators of school performance, including social and emotional skills, and to link them to school improvement and technical assistance of LEA's(Local Educational Agencies).

Image of a survey on the development of "social and emotional skills" and environmental impacts

Analysis of student's development of two skills and these interrelation



Study on verification of educational policies in the allocation of teachers and other matters (FY2016-FY2020)

Project Leader / Director of the Department of Research Planning and Development

■ Summary of the study

Verifying the impact that class size, the allocation of teachers and improvised teaching methods have on developing children's competencies and on problem behavior is an important issue in education policymaking. In this context, we aim to pursue research that uses surveys of academic ability and student learning conducted among local governments to empirically verify the impact of class sizes and teacher allocation on academic ability and non-cognitive ability, as well as the effect of special student support on truancy and other problematic behaviors. This research also aims to provide basic data for education policy.

In FY2020, we will continue our study on the effects of class size as in the previous year, and conduct a questionnaire to measure children's non-cognitive ability and a questionnaire of teachers, and analyze the results.



Scene of additional teachers and teacher supervisors discussing ways to reduce school refusal among children

Study on trends in higher education participation of upper secondary school students (FY2020-FY2022)

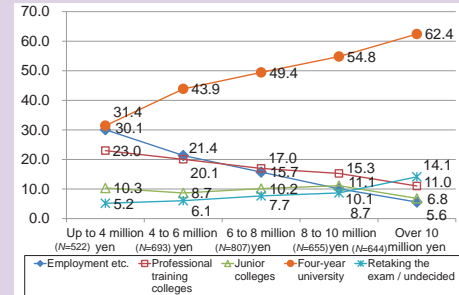
Project Leader /Deputy Director of Department for Higher Education Research

Summary of the study

The purpose of this research is to clarify the trends of the educational advancement of upper secondary school students after the introduction of the “new system on supporting higher education” using the survey data targeting the parents of 3rd-grade upper secondary school students all over the country, and to analyze the extent of the burden on the household budget of middle-income groups, and to examine the survey instruments and methods to support the continuous implementation of surveys. In particular, we will be examining the relationship between advancing to higher education institutions and household income, and how this relationship will differ depending on academic ability, sex, region, type of upper secondary school, etc.

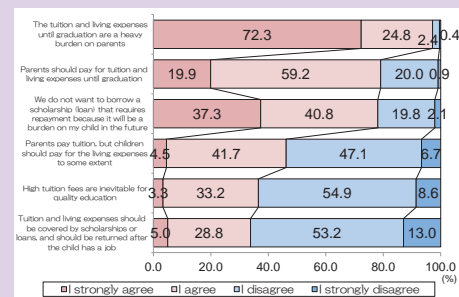
In FY2020, we will be performing a basic tabulation of the “Parents’ survey regarding the career path of upper secondary school students” (FY2019) and proceed with an analysis in accordance with the issues proposed by the researchers. In addition, we will also perform a trial secondary analysis of existing surveys such as the FY2016 and FY2018 “Survey on Children’s Studying Expenses”. We will also select multiple prefectures as examples and start compiling the types of institutions to which upper secondary school students advance.

Figure 1 Career path after graduating from upper secondary school by parents’ annual income



[Source] Center for Research on University Management and Policy, The University of Tokyo "On the relationship between the career path of upper secondary school students and the annual income of parents"

Figure 2 Opinions on the cost of admission to higher education



[Source] MEXT “Parents’ survey regarding the career path of upper secondary school students FY2019”