

---

## **NIE Office of Education Research (OER) Education Research Funding Programme (ERFP)**

<b>27<sup>th</sup> Request for Proposals:</b>	<b>7 October 2021</b>
<b>ERFP Grant Call Briefing:</b>	<b>20 October 2021</b>
<b>ERFP Grant Writing Workshop:</b>	<b>25 October 2021</b>
<b>Expressions of Interest:</b>	<b>22 November 2021, 5pm</b>
<b>Submission Deadline:</b>	<b>4 January 2022, 5pm</b>
<b>Endorsement by Director of Research (DoR):</b>	<b>13 January 2022</b>

---

Dear Colleagues

The Office of Education Research (OER), National Institute of Education (NIE), Nanyang Technological University, is pleased to announce its 27<sup>th</sup> Request for Proposals (RFP) for the Education Research Funding Programme (ERFP). The 27RFP is the fourth call to open to Institutes of Higher Learning (IHL) with the aim of fostering stronger collaborations with IHL partners.

The 27RFP forms part of the 4th tranche of research funding from the Ministry of Education (MOE), Singapore for the continuity of NIE's ERFP. Over the next few years (FY2018-2022), the ERFP will continue to build on the work that has been undertaken in the previous three cycles of education funding by strengthening the foundation (in terms of knowledge, capability and structure) for education research, development and innovation in existing and emerging research areas. NIE OER will also continue to encourage efforts to design, develop and implement strategic, evidence-based, collaborative, scientifically-rigorous and outcomes-focused innovations in schools and classrooms. The primary aims are to improve classroom practice, enhance student outcomes, and build organisational and teacher capacities. More information can be found in [here](#).

NIE's ERFP for FY2018-2022 is developed in line with recommendations made by the Committee of the Future Economy and recent educational policy initiatives. Over the past year, besides horizon scanning, consolidation of research project findings, and strategic planning to meet future needs, OER has also met and consulted key education stakeholders in MOE, schools, and both international and local experts. The result is a proposed ERFP that will both strengthen NIE's international standing as an education research institute of distinction and support Singapore's education system in providing a "Research-Informed Education for Future-ready Learners."

NIE OER encourages research collaborations among colleagues within NIE as well as with colleagues at the MOE and other Institutes of Higher Learning (IHL).

## A. FOCUS OF RESEARCH

1. The ERFP focusses on education research in Singapore (in terms of knowledge, capability and structure), developing innovations in existing and emerging niche research areas, and growing hubs of research excellence to support Singapore's education system in providing "Research-Informed Education for Future-ready Learners." It encourages efforts to design, develop and implement strategic, evidence-based, theoretically-warranted, collaborative, scientifically-rigorous and outcome-focused innovations in schools and classrooms.
2. The primary aim of ERFP is to improve classroom practice, enhance student outcomes, and build organisational and teacher capacities in Singapore schools. Thus, proposals for ERFP funding must demonstrate relevance to MOE/OER's mission and goals and potential benefits to Singapore's educational institutions.

Scope of the projects should fall within the following criteria:

- i. Early childhood, primary, secondary and/or JC education-related.
  - ii. Studies on other parts of the education system that link to the emphasis of ERFP might be considered if those links are clearly articulated.
  - iii. May involve formal or informal learning linked to (i).
  - iv. Teacher education and teacher professional learning for Singapore's education system.
  - v. Studies of pathways of education and/or lifelong learning which are based in or include participants from higher education are allowed (bearing in mind (ii)). Projects that are limited to benefits for higher education and/or home-based research not related to (i) are excluded.
  - vi. Meta-analysis/meta-synthesis studies can be submitted for funding if the studies meet all of the ERFP requirements. This includes ensuring that the scope of the synthesis is well-defined and the proposed budget is clearly articulated, in line with the intended scope. Principal Investigators can refer to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses ([PRISMA](#)) [guidelines](#) or an example of crucial methodological features to discuss.
  - vii. International comparisons are allowed but international data collection, analysis or hiring is not supported.
3. The 27RFP will be a general call focusing on the broad MOE Priority research areas below and a sub-theme on Artificial Intelligence for Education (AIEd).

## ARTIFICIAL INTELLIGENCE FOR EDUCATION (AIEd)

Artificial Intelligence for Education (AIEd) is a sub-theme for the 27 ERFP. AIEd research covers areas like knowledge representation, machine learning, pattern recognition, natural language processing, intelligent robots and expert systems, which open new possibilities for teaching and learning. These applications of AI could augment human decision making in learning, teaching, and assessment etc., thus rendering the processes more effective. AIEd research refers to the investigation and development of innovative and ethical applications of AIEd. Researchers are encouraged to explore research lines of inquiry in the following research focus areas of AI-augmented solutions:

i. Personalized learning (related to differentiated instruction and adaptive learning)

Advancement in AI allows us to gain an understanding of individual students' learning based on how they respond to learning materials and activities. AI can provide personalized instructions, feedback, and learning pathways for students.

ii. Learning companion (focusing on social-emotional learning and well-being of students)

AI can be used to capture, detect, recognize and classify multi-modal data (e.g., text, voice, computer vision, and biometric sensing) on students' social-emotional learning and well-being, and dispense learning intervention(s) to motivate and engage students throughout the learning activities.

iii. Assessment of, for, and/or as learning (emphasizing academic and cognitive related outcomes)

AI can be used to provide just-in-time feedback and assessment, such as being built into learning activities for an ongoing analysis of student performance and achievement. AI is a powerful tool to open up the 'black box of learning', by providing a deep, fine-grained understanding of when and how learning happens.

iv. Development of 21<sup>st</sup> century competencies

This line of research goes beyond simply adopting technology to encourage deepening the use of AI technologies which enable active learning in relation to MOE's framework of 21<sup>st</sup> century competencies: communication, collaboration and information skills; civic literacy, global awareness and cross-cultural skills; and critical and inventive thinking.

v. Multi-level data-evidence decision making

Studies which coordinate the analysis of data from multiple research projects deployed in different pedagogical systems at the micro, meso, and macro levels to help various stakeholders (e.g., learners, instructors and other decision-makers) to "see the big picture" and assess the risks to know whether each research project is helping (or not helping) learners and take further steps to address problems if necessary.

There may be areas of overlap. Research projects should aim for at least one AIEd focus. Multidisciplinary research teams including strong skills both in education and in AI are encouraged to apply.

## MOE PRIORITY RESEARCH FOCI

There are five priority research foci that are of strategic interest to MOE. Researchers are encouraged to explore research lines of inquiry in these priority research foci.

### i. Instructional Core

Pedagogical research that studies the teaching and learning practices in the instructional core (academic and non-academic) and how to improve these practices is important and useful to MOE. Possible lines of inquiry include research to describe and measure patterns of curriculum, instruction and assessment practices in Singapore schools; measure and explain the impact of these practices on student outcomes with consideration of student/classroom characteristics; as well as identify opportunities for improvement through interventions and professional development.

### ii. Contexts of Learning

Learning occurs within multiple socio-cultural-historical contexts which interact with individual differences to affect learning. A nuanced understanding of the complex interactions among these contexts and their impact on individual learning is needed to better shape educational policies and customise effective programmes. Possible lines of inquiry include research to examine less formal learning environments (including out-of-school and online) which affect learning; as well as understand the diverse needs, schooling experiences and life contexts (e.g., home, community) of students (beyond their individual differences) so as to enhance their overall learning and well-being.

### iii. Early Childhood Education

Children's early years can critically affect their longer-term developmental trajectories, and quality early childhood education plays an important role in developing their potential to the fullest. Possible lines of inquiry include research to examine structural and process factors which influence children's learning and developmental outcomes (including non-academic areas); design effective professional development for pre-school practitioners; as well as understand the levers and mechanisms which can help narrow developmental and learning gaps for low progressing children (including those from disadvantaged backgrounds).

### iv. Bilingualism and Biliteracy Education

Bilingual policy has been a cornerstone of Singapore's national curriculum. Contextually-attuned research is needed to advance our understanding and strengthen our approaches in English and Mother Tongue Languages learning. Possible lines of inquiry include research to support and motivate students who are less proficient in English and Mother Tongue Languages; develop age-appropriate language proficiency measures; as well as understand the perceived role and value of Mother Tongue Languages and English Language among families and in society.

v. Lifelong Learning

It is important to help our learners develop not only the competencies that allow them to access further learning (i.e., learn how to learn), but also the desire to learn, so that they can and will continue to learn long after they leave school. Possible lines of inquiry include research to examine the knowledge, skills, attitudes and values (KSAV) that are essential for a student to be an effective lifelong learner beyond their schooling years; as well as understand the relationship between these KSAV and 21st century competencies (including adaptability, resilience, perseverance) needed to thrive in life and at work.

## **NIE OER 4TH TRANCHE RESEARCH PROGRAMMES**

The Key ERFY FY2018-2022 research programmes provide a comprehensive and synergistic research framework for a future-ready learners' research agenda. The organisation of research into programmes addressing priority areas ensures that research is more focused, cumulative, coherent and impactful.

The research on the Future-Ready Learners' Agenda includes research priority on:

- i. Cognitive, Emotional and Social Development (CESD)
- ii. Teacher Professionalism and Learning (TPAL)
- iii. Schools, Leadership and System Studies (SLSS)
- iv. Lifelong Learning, Cognition & Wellbeing (LLCW)
- v. Learning Sciences and Innovation (LSI)

These five programmes constitute multiple levels of analysis of our education system, from the individual learners to teachers to schools and systems, cross-cut by research focusing on future-ready values, skills, competencies and learning. Importantly, these five programmes include research that can be conducted in domain-specific areas like language, mathematics, science, humanities as well as areas such as the Singapore Teaching Practice (STP), early childhood, bilingualism, and low progress learners.

In planning your research focus, you should consider how your proposed project fits within the MOE priority research foci, the research programmes of the Future-Ready Learners' Agenda.

## **B. RESEARCH TYPE**

### **TIER 1, 2, AND 3**

Proposals can be characterized by 'tiers'. This relates to the quantum for each project. These projects typically have a research team of PI, Co-PI and Collaborators who work together, focusing on one cohesive project.

### **PROGRAMMATIC RESEARCH**

Programmatic research are a specific category of proposals which have a funding quantum of a Tier 3 proposal. Programmatic research is not applicable to Tier 1 and Tier 2 proposals.

Programmatic research is defined by an over-arching project research theme which focuses on a key educational issue, problem, phenomena or outcome, along with a number of sub-projects – specific research studies that address important aspects or components of the issue, problem, phenomena or outcome. It therefore has a common strand or focus, supported by a common theoretical framework, and undertakes a coherent, comprehensive, multi-faceted approach to understanding and addressing the issue, problem, phenomena or outcome. Unlike the usual Tier 1, 2, and 3 proposals, programmatic research includes sub-PIs who are responsible for a specific sub-project within the larger PP.

Programmatic research is characterised as follows:

- i. examine, describe or address a fundamental or challenging complex educational issue, problem, phenomena or outcome.
- ii. incorporate multi-level, multi-method, multi-perspectival and multi-disciplinary approaches to examining or addressing the problem, issue, phenomena or outcome.
- iii. comprise strong team synergies to facilitate shared expertise, knowledge exchange and collaborations.
- iv. comprise a range of (typically, two to five) themes which are coherent, aligned, and which allows comprehensive breadth of analytical foci, research outcomes and findings that have an impact on the education system and the various stakeholders (NIE, MOE, schools, society and international research fraternity).
- v. have strong translational efforts as part of its agenda; including encouraging stakeholders to be actively involved at the proposal design stage, building in time and funding for professional development, designing an innovation or intervention as part of the proposal, or hiring journalistic writers to translate findings for various stakeholders.

**FUNDING QUANTUM**

TIER	QUANTUM
1	< S\$150K
2	S\$150K to < S\$350K
3 / Programmatic Proposal	≥ S\$350k

## C. ADMINISTRATIVE MATTERS

### i. Expressions of Interest (EOI)

Applicants should indicate their expression of interest and submit them to the IHL Point of Contact (POC) within the Institution **before 5pm, 22 November 2021**.

EOIs are required to be submitted for all ERFP (Tier 1 to 3) and Programmatic Proposals via the EOI Form enclosed in the “27RFP ERFP Guidelines and Application Package”.

IHL POCs will be required to collate all EOIs that the Institution would like to support and send them to NIE OER via email at [erfp.grant@nie.edu.sg](mailto:erfp.grant@nie.edu.sg) before **5pm, 22 November 2021**. **Late and incomplete submissions will not be accepted.**

### ii. Submission Details and ROMS Account Access

Applications for ERFP (Tier 1 to 3) as well as Programmatic Proposals are submitted directly by applicants online, via the Research Operation Management System ([ROMS](#)), **before 5pm, 4 January 2022**. Only applicants who had submitted EOIs will be able to submit applications via ROMS.

#### ROMS account Access

NIE OER will liaise with IHL POCs who have submitted the collated EOIs about account access on ROMS for respective applicants by 30 November 2021. The account access for the Director of Research (DoR) at the relevant institutions will also be provided.

The submission deadline for all applications is **before 5pm, 4 January 2022**. NIE OER **will not** accept late or incomplete submissions after this deadline. Directors of Research are required to endorse applications by **13 January 2022**.

### iii. 27RFP ERFP Grant Call Briefing

NIE OER will be organising a Grant Call Briefing (online) on 20 October 2021. Applicants are encouraged to attend the briefing to find out more about the grant call.

**Date:** **Wednesday, 20 October 2021**  
**Time:** **10am to 12noon**

Please RSVP your attendance via your IHL Point of Contact. IHL POCs, please send NIE OER the names of the attendees by 15 October 2021.

**iv. 27RFP ERF Grant Writing Workshop**

NIE OER will be organising a Grant Writing Workshop (online) on 25 October 2021. Applicants are encouraged to attend the workshop to find out more about proposal writing.

**Date:** Monday, 25 October 2021  
**Time:** 10am to 11am

Please RSVP your attendance via your IHL Point of Contact. IHL POCs, please send NIE OER the names of the attendees by 20 October 2021.

**v. Useful Resources and Contacts**

Please refer to the attached **27RFP ERF Guidelines and Application Package** prior to submitting your expressions of interest and applications.

The grant call information can also be found in the [NIE Website](#).

For general grants queries, please email ERF Grant at [erfp.grant@nie.edu.sg](mailto:erfp.grant@nie.edu.sg).

For technical assistance on ROMS, please contact [servicedesk@nie.edu.sg](mailto:servicedesk@nie.edu.sg). We look forward to your submission. Thank you!

Best Regards

NIE Office of Education Research

---