Descriptions of MOE-wide Research Agenda, General Education Research Agenda and Early Childhood Research Agenda (as of Jan 2024)

MOE-wide Education Research Agenda (MERA) cross cutting* themes	Description
* The MOE-wide education research agenda includes 7 cross-cutting themes to encourage a life-course approach to education research. This research could examine the cross-cutting themes within and/or across learner groups in early childhood, general education, higher education, and adult & skills education.	
Learning as a biological, social and cultural process	o Interconnectedness of biological, social and cultural factors that shape learning, including academic learning and social & emotional learning, of individuals of all ages o Developmental process of learning across the life course o Interplay of intrapersonal and environmental factors (social and cultural contexts) in learning
Technology and how it transforms teaching and learning	o The transformation that technology brings to learning processes, learning medium and learning spaces o Optimising and leveraging technology to transform teaching and learning
Transference of learning and skills across domains and contexts	o Factors impacting transference of learning from one domain to another (e.g., cognitive to affective domains, multi-disciplinary learning) and from one context to another (e.g., informal to formal learning, between different jobs, applied learning) o Enhancement of learner's ability to integrate learning experiences across domains, contexts and time to improve function and performance o Developing future-ready and life-long learning competencies
Progression in education and at work, and critical transitions	o How individuals/groups progress in learning & work trajectories throughout the life course, with special focus on the critical transitions (e.g., kindergarten-primary, primary-sec, sec-PSEI, school-work, work-school) o Similarities and differences in education and work trajectories of different groups of Singaporeans, and how they make choices and navigate transitions
Impact of societal contexts and social structures on educational outcomes	o How macroscopic contexts, structures and processes (including culture, social and economic structures, education pathways, work environments) affect educational outcomes (including quality, equity), and

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	how these effects are shaped by education and skills development policies ○ How growing diversity in society would affect educational opportunities and the effectiveness of education as a social leveler
Factors that impact education organisations, and education & skills ecosystem	○ How an education organisation is shaped by its people, structures, processes, technology and external environment, and how these education organisations in turn contribute to the development of the education and skills ecosystem
Development of social and emotional well-being	○ Factors, contexts, and competencies that shape social and emotional well-being, including mental health and emotional resilience ○ How to develop social and emotional well-being in education and work settings

General Education Research Agenda (GERA) areas	Description
The first four foundational research areas are of perennial importance to educational policy and practice and are needed for continual improvement of the Singapore education system. The *futures* strand directs attention to critical problems of policy and practice* in the future of learning, of teaching, and of schooling. Research will draw from and build on findings from the foundational areas and can also tap on newer areas such as the Science of Learning. *These problems express the gaps or challenges that are integral to improving programs, policies within MOE. Examples of these problems of policy and practice will be shared through grant call briefings.	
Foundational area 1: Instructional core	• teaching and learning of the subject disciplines • development of bilingualism • development of social & emotional competencies and character & citizenship dispositions • how students with diverse aptitudes (including SEN students) learn

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General Education Research Agenda (GERA) areas	Description
	• impact of varied pedagogical practices in Singapore classrooms
Foundational area 2: Teacher learning and development	• how teachers learn (including disciplinary thinking and subject content mastery, assessment literacy, pedagogy, curriculum integration and design) • efficacy of teacher professional development (including online learning, coaching and mentoring for teachers) • how teacher well-being can be developed (including teacher self-efficacy, professional identity, and competence)
Foundational area 3: School environment, organisation, and leadership	• school environmental factors and conditions (including support structures, culture, and ethos) • organisation (including how educational levels are organised, class size and allocation, form class and subject class organisation, academic ability-based streaming, and setting) • leadership & management that shape school effectiveness and improvement
Foundational area 4: Societal contexts shaping education	• broader factors beyond schools, including socio-economic, cultural and family backgrounds, societal values and norms shaping learning experiences, that impact teaching and learning, and student development.
Future of Learning	How to equip students with competencies and qualities to thrive in the future with particular emphasis on deepening MOE efforts in 21CC development and harnessing technology for learning, including: • How to develop and assess priority 21CC such as cognitive and social adaptability, resilience to negotiate uncertainty and disruption, empathy and civic literacy • Intersections between learners' cognitive competency and social & emotional competency, and how both domains can synergistically support learning • Effective technology and responsive environments that support learning anytime/anywhere, including personal learning devices, AI, immersive environments, e-assessment, and affective technologies.
Future of Teaching	Shifts in the roles of teachers and nature of teaching, and how teaching and pedagogical practices can support the future of

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	learning in primary, secondary, and pre-university levels, including: • Shifts needed in teachers' beliefs of curriculum and pedagogy • How teachers leverage technology-mediated learning to develop future-ready knowledge, skills, attitudes and values • How to develop students' learning dispositions, self-regulation, metacognition and well-being through the continuum of assessment practices (including through the use of technology, and in the context of home-based learning)
Future of Schooling	How changes in school/class organisation and educational pathways to support the future of learning and teachi*ng* can impact student outcomes, including: • Organisation of non-formal and informal learning in schools and outside schools to promote seamless learning which can contribute to Learning for Life • Impact of different systems of merit-based admissions on student development and implications of merit-based admission in increasingly diverse societal and school environments • Impact of more heterogenous learning environments (e.g., mixed form classes, students with SEN in mainstream settings) on social and emotional well-being

Early Childhood Research Agenda (ECRA) Priorities	Description
ECRA seeks to generate localised knowledge to guide the design, implementation, and evaluation of Early Childhood policies and programmes.	
Social mobility and support for children from lower-income families	Children from disadvantaged backgrounds (e.g., low SES, or with risk factors) often enter preschool with a significant gap compared to their peers in terms of essential knowledge and skills important for future school success and for life. Without narrowing this developmental and learning gap early, the accumulated deficit may result in wider gaps over time. There have also been significant efforts to enhance preschool

Early Childhood Research Agenda (ECRA) Priorities	Description
	accessibility and affordability. However, children from low-income families may face more barriers to enrolment and attendance. Given this, there is a need to further study drivers of social mobility, including parent knowledge and the effectiveness of EC education as a social leveller in Singapore, and to identify strategies that can enhance its effectiveness. Related to the issue of social mobility is the impact of social mixing i.e. the long-term impact that social mixing might have on social mobility of children and society **For illustration:** <u>Support provisions</u> What are the profiles of preschool children who are socio-economically disadvantaged (e.g., prevalence, degree of disadvantage in language and numeracy development, home background)? What kind of additional developmental and learning support, if any, do they require? What are the strongest predictors of future development (e.g. language development, numeracy development, social and emotional development) among children from less advantaged backgrounds? <u>Social mix</u> What is the impact of social mixing (e.g., interaction with peers from different income or race backgrounds) on child development and social mobility?
Support for children with developmental needs	ECDA oversees Early Intervention (EI) services for preschool children with developmental needs (DN). MOE currently oversees FLAiR, a support programme for preschool children with learning needs for literacy. Given that the intent of EI services is to support the child's overall developmental functioning (and not academic skills per se), it is helpful to review holistically how these programmes translate to better preparedness of children with support needs for the next stage of education in a national primary school (mainstream or SPED). There is also a need to better understand what drives outcomes for children with developmental needs (DN), including beyond preschool years. The outcomes range from near-term outcomes such as preparing for the next phase of education, to longer-term

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	societal outcomes. It is also useful to understand the factors that moderate or mediate the impact. **For illustration:** <ins>Inclusive Preschools</ins> How do preschools that adopt specific defined inclusive practices for children of a defined profile of DN affect children's development, for both typically developing children and children with developmental needs? What models of support are effective and sustainable? What is the effect on typically developing children and children with DN? <ins>EI provisions</ins> What drives outcomes for children with DN? What are the key loci of intervention (e.g. (i) evidence-based EI practices (ii) transition support, (iii) parent engagement, (iv) raising quality of EC professionals) to prepare children who require different levels of EI support for the next stage of education (SPED and mainstream)? <ins>Parental Support</ins> What are the best practices that parents can use and skills that they can be equipped with to help their children progress in their development? What are the factors that contribute towards effective practices that can be adopted in enhancing caregiver involvement in supporting children's development? What impact would the level of support provided by the parent at home make on the child's overall development? <ins>Transition support and beyond preschool years</ins> What are the key factors that facilitate successful transition from EI to school-aged provisions? Examples include teachers' awareness on needs of the child, support provisions in primary school (p1), professionals' roles and involvement to support the child, and level of engagement with families etc.
Impact of preschool	With a growing evidence base of international research pointing to the importance of the early years, since 2012, the Government has moved decisively to invest significantly in the early years by making preschool more affordable, accessible, and of higher quality. Greater provision of preschool places, particularly full-day childcare, supports families' parenthood aspirations and enables mothers to return to the workforce. It

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	would be useful to study the effects of Government's investments on preschool from a child development angle. **For illustration:** Theory of change How does access to good quality preschools (including good quality teaching, etc.) impact the child's holistic development in later childhood and longer-term outcomes? Measurement and baseline sensing What are some reliable and valid tools to measure academic (e.g. early numeracy and literacy) and non-academic outcomes (e.g. social and emotional skills, executive functioning, learning dispositions) of preschool children, which can be administered Preschool accessibility, affordability and quality What factors affect likelihood of being enrolled in preschool? How does the age of preschool enrolment differ across different profiles of children? To what extent does the number of years (and months) of preschool enrolment affect children's attainment of essential knowledge and skills which are important for future school success and for life?
Quality of preschools	Current preschool provisions vary widely, in terms of costs, curricular focus, and programme delivery. It is not clear how these variations affect preschool quality and child outcomes. Furthermore, more can be done to understand how various preschools interpret the Nurturing Early Learners (NEL) Framework and/or Early Years Development Framework (EYDF) and translate it into practice. **For illustration:** Measurement and baseline sensing What are some reliable and valid tools to measure preschool quality (in terms of provider quality and programme quality), which can be administered readily in Singapore preschool classrooms? Preschool factors influencing child outcomes What are the learning and development outcomes of children in different preschool types/programmes? Are there significant differences in quality outcomes across preschools after

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	controlling for the child's characteristics and home backgrounds? Curriculum Frameworks How are existing frameworks (e.g., Nurturing Early Learners Framework, Early Years Development Framework) being enacted in the sector? What are the gaps between the intended and enacted frameworks? To what extent does this affect quality of preschools?
Quality of teaching and interactions in preschools	EC educators are instrumental in delivering quality early childhood education. Quality of teaching and learning in Singapore preschools is not well-documented. Given the wide variety of pedagogical approaches that exist, there is also lack of consensus on what constitutes "quality teaching and learning". While there are established international tools available for measuring teaching and learning quality, these have not been adapted to Singapore's context. **For illustration:** Measurement and baseline sensing What are some reliable and valid tools to measure professionals' quality of care, teaching and learning (T&L) in preschools, which can be adapted and administered in Singapore preschool classrooms? Educator factors What are EC educators' beliefs/assumptions about child development, care and education (e.g. what constitutes quality T&L)? What are the differences in teaching quality, if any, between teachers espousing defined philosophies (e.g. Montessori, Reggio Emilia), and those that do not espouse any particular philosophy? Training and professional development (PD) What are effective and sustainable ways of raising manpower quality among EC educators?
Language and literacy (including bilingualism)	While the research on language and literacy for EL is well established in international literature which is relevant across different settings and communities, more local research could focus on effective professional development approaches to help educators better provide and enhance instructional support for

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	language and literacy. At the same time, for the broader pre-schooler population, the dominant use of EL in our language environment at home and in society at large poses a challenge in exposing our young children to their MTL and gaining a stronger foundation in these languages. As such, it is important to investigate the amount of quality language use our children is exposed to and participates in within preschool. In addition, it is not clear to what extent and how MTL teaching and learning in preschool classrooms supports the development of early bilingualism, and how MTL learning in the preschool setting interacts with the home language environment. It would be useful to better understand the current level of MTL interactions in homes, as well as how learning experiences can be enhanced for young children with varied MTL exposure at home. **For illustration:** Measurement and baseline sensing What are some reliable and valid tools that can be used to measure the EL and MTL proficiency of preschool children in Singapore which can be readily administered in Singapore preschool classrooms? To what extent can these tools be used to identify children who require more language and literacy support? Instructional approaches What are some of the effective language instructional approaches (e.g. code-switching, translanguaging, bilingual books), that can support children's early bilingual acquisition in Singapore's varied language environment? Professional development What are effective modes of professional development for EL and MTL teachers that leads to quality interactions in the language classroom? MTL provision What are the effective teacher deployment models (e.g. dual-language or dedicated MTL teachers) and programme structures (e.g., amount of exposure time within the curriculum) that can

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	support children's early bilingual acquisition? How can teachers engage parents to foster a child's interest to learn MTL?