



PHILIPPINE NORMAL UNIVERSITY

The National Center for Teacher Education

POLICY BRIEF SERIES

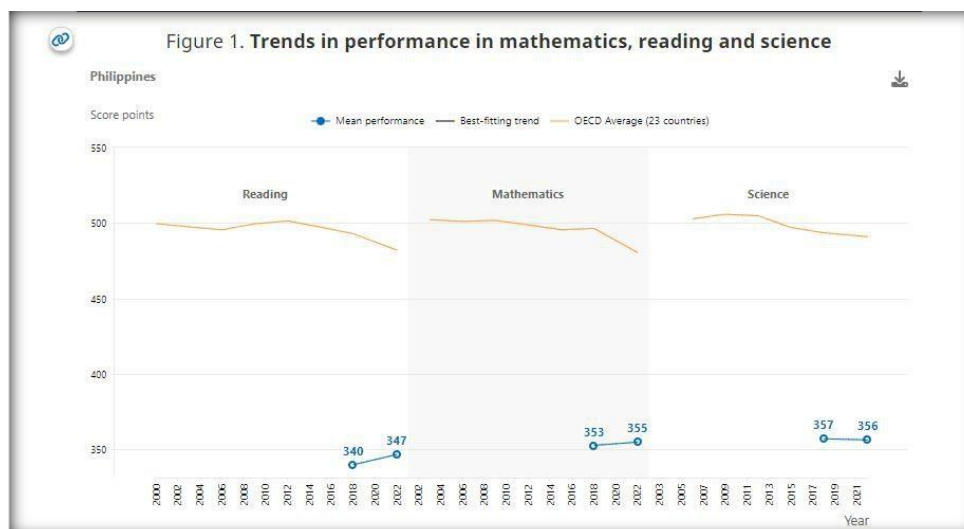
VOLUME 7 | ISSUE 6 | 2023

PRINT ISSN: 2984-9063

ONLINE ISSN: 2984-9071

How responsive is the teacher education curriculum to the demands of International Large-Scale Assessments?

Allen A Espinosa, Ma Arsenia C Gomez, Adonis P David, Allan S Reyes, Heidi B Macahilig, Leah Amor S Cortez, Praksis A Miranda, Brando C Palomar, Jayson L de Vera, Mark Ponce C San Juan, and Marvin C Patal



Philippine performance in PISA 2018 and 2022. Photo from OECD.

This policy brief explores the outcomes-based curriculum of a teacher education institution (TEI) vis-a-vis the competencies advanced by international large-scale assessments (ILSAs) in relation to how teacher training and classroom pedagogy can primarily address the dismal performance of the Philippines in ILSAs. Key insights arising from this study include the need to align the teacher education curriculum with ILSA competencies through unpacking and sequencing of competencies and use of appropriate teaching strategies. Some of the essential program specific reforms that must be implemented are: in terms of Mathematics instruction, the inclusion of real-life contexts (affective domain) instead of just abstraction and computation is necessary; in the case of Reading, there is a need to include a course on reading instruction; and in terms of teaching Science, it is important to strengthen students' abilities in knowing, applying, and reasoning about science to find solutions in complicated scientific contexts and multistep problems, among other program specific changes.

Recommended Citation:

Espinosa, et al. (2023). How responsive is the teacher education curriculum to the demands of International Large-Scale Assessments? *Policy Brief Series* 7(6), pp. 1-6. Philippine Normal University Educational Policy Research and Development Center.



PNU Educational Policy Research and Development Center
(+632) 317-1768 loc 751 | eprdc@pnu.edu.ph | www.pnuresearchportal.org

The growing importance of international large-scale assessment (ILSA) in educational policies necessitates the integration of competencies from various ILSAs into the program design of pre-service teacher education in the Philippines. This policy brief examines how the outcomes-based curriculum of a Teacher Education Institution (TEI) in Metro Manila aligns with selected ILSA competencies (PISA, TIMSS, SEA-PLM) through the mapping of objectives and competencies. The study also delves into the integration of key competencies from various ILSA frameworks into the program design, including the curriculum and practices, of the identified TEI in Metro Manila. In addition to mapping, focus group discussions were conducted with select faculty members, some of whom participated in curriculum revision or enhancement activities.

ILSA and the Mathematics Teacher Education Curriculum

The course syllabi of the identified TEI in Metro Manila primarily emphasize content and concept mastery. This emphasis is expected, given that the courses under examination are major subjects from Secondary Education major in Mathematics and Elementary Education major in Mathematics and Science. However, this focus is not fully aligned with several ILSA competency standards. One out of two course syllabi from the Elementary Education major in Mathematics and Science was found to be significantly misaligned with TIMSS mathematics competencies. Ironically, this discrepancy is noted in *The Teaching of Mathematics in the Elementary* course, primarily focusing on the teacher's competence and strategies in teaching math to elementary learners.

Concerning PISA standards, the courses were identified as lacking in the application and connection of abstract mathematical concepts to real-world situations. This observation indicates that the intended learning outcomes specified in the syllabi of the identified TEI in Manila heavily emphasize content mastery and conceptual knowledge of various topics in mathematics. Furthermore, only one out of the six key competencies set by SEA-PLM was found to be misaligned with any of the two course syllabi from the Elementary Education major in Mathematics and Science. This finding suggests that the courses in question are well-aligned with cognitive and psychomotor aspects of learning."

ILSA and the Reading Teacher Education Curriculum

The majority of the syllabi are not focused on the teaching of reading sub-skills and strategies but rather treat reading only as a component of literacy or just one of the macro skills to be taught as evidenced by the absence of a course that is dedicated to the teaching of reading. The nine (9) literature courses mapped are content subjects only. Based on the learning outcomes in the syllabi, they are intended for the development of the content knowledge of the students and do not teach reading skills and strategies that can be utilized by the pre-service teacher either for self-reading or the teaching of reading skills. Before the outcomes-based curriculum, the Bachelor of Secondary Education Major in English Program of the identified TEI in Metro Manila includes four (4) courses related to reading. Two (2) are in the general education courses namely: *Academic Reading* and *Developmental Reading*; and two (2) in the majorship courses in which one is intended to teach actual reading, *Teaching of Reading*, and another related to literature and reading, *Teaching and Testing Literature*. These findings reveal the need for a course that focuses on reading instruction.

ILSA and the Science Teacher Education Curriculum

The findings indicate that the competencies outlined in the curriculum of the identified TEI in Metro Manila, particularly in science, are primarily associated with 'knowing' and, to a lesser extent, with 'applying.' Upon mapping, it becomes evident that most competencies lack alignment with the reasoning subcategories under TIMSS.

Specifically, the PISA results highlight that the syllabi in *Integrated Science* implicitly correlate with the scientific interpretation of phenomena. The mapping results reveal that various courses within *Integrated Science* cover scientific knowledge comprehensively, with the heat map indicating stronger or more explicit alignment in *Integrated Science 1 and 2*.

Both PISA and TIMSS mapping results show that Pedagogical Content Knowledge (PCK) subjects exhibit no alignment with the competencies measured by the two international tests. The outcomes for both the program outcomes specific to Elementary Education and the program outcomes specific to Secondary Education, major in science, indicate that various components of scientific competencies are explicitly aligned. However, it is noteworthy that scientific, procedural, and epistemic knowledge are not aligned.

How do we integrate the key competencies of ILSA into the Teacher Education Curriculum?

The focus group discussions with selected faculty members yielded several themes for integrating key ILSA competencies into the program design of pre-service teacher education programs. These themes included (1) inclusion of ILSA as one of the benchmarks or standards for curriculum reform (2) strong teaching of course content knowledge in the curriculum (3) increased PCK courses for the teaching and development of ILSA competencies (4) explicit teaching of key ILSA competencies (5) ILSA-like assessment of learning and (6) elaboration of Course Intended Learning Outcomes (CILOs) targeting the attainment of ILSA competencies. As a benchmark, ILSA competencies reflect the state of the arts in education in the global realm. Integration through the course design with strengthened teaching of content in the curriculum as a pathway ensures the depth and breadth of future teachers' content knowledge as well as its effective delivery in the classroom. Courses on pedagogical content knowledge can be improved by aiming at ILSA competencies, and one way of which is the ability to unpack competencies through class activities and forms of assessment that are in line with the learning outcomes. The explicit teaching of ILSA competencies is also another means of ILSA integration since actual ILSA competencies are directly addressed. Assessing learning in terms of ILSA-like assessment means that knowledge about the construction of ILSA items is integral in achieving the goals of aligning pre-service teacher education with ILSA competencies. Elaborating CILOs as geared towards ILSA comes from the premise that the syllabus itself can be "packaged" to achieve ILSA competencies. The elaborated CILOs in each outcomes-based syllabus can contain stipulations on specific learning outcomes accompanied by a particular assessment method resonant with ILSA assessment or broad assessment methods with ILSA-like assessment criteria. CILOs can also be bundled with performance criteria that are similar to those of ILSAs.

General recommendations

The Commission on Higher Education (CHED) and TEIs should identify the global standards and competencies they want to include in pre-service teacher education programs. Education reforms launched in recent times are often triggered by compelling developments both at national and global levels. The same goes for the K-12 curriculum reforms launched by the Philippines in 2013. With the "rapidly changing and increasing globalized environment" as stated in Republic Act 10533, as one of the contexts behind the curriculum reform, the CHED and TEIs need to identify the

realizing the K-12 education reform agenda. It is true that the CHED's Teacher Education curricula were crafted based on various standards but all of them were local standards (see various CMOs). If the basic education sector is aiming to produce globally competitive learners, it is imperative that TEIs supplying teachers to the field have to keep up with what the basic education aspires to have. CHED's identification of these standards and competencies will help the TEIs focus on developing teachers' competencies deemed important by the education system.

TEIs should ensure that the integration of ILSA competencies into the teacher education curriculum will not look like teachers are 'teaching to the test.' This study extracted specific skills and competencies from the various ILSA frameworks necessary in the development of pre-service teachers (e.g., unpacking and sequencing of competencies and use of appropriate teaching strategies) to be globally competitive. These skills should be embedded into the curriculum to develop teachers who are equipped with the necessary skills and competencies. This would consequently have a ripple effect on their future students.

Program-specific recommendations

In view of the general recommendations presented, here are specific recommendations for each of the disciplines being tested in ILSA.

Reading

1. Add/Include pedagogical content knowledge (PCK) courses targeting the development of reading skills across content areas.
2. The teaching of reading skills should be taught not only to Early Childhood Education majors but also to Language majors (e.g., Filipino and English).
3. Reconsider the offering of the following courses that were phased out when an outcomes-based curriculum was implemented: Teaching of Reading, Academic Reading, and Developmental Reading.

Mathematics

1. Include courses that would directly cater the development of the learners' fundamental numeracy, measurement, logic, and reasoning skills.
2. Strengthen the PCK courses to complement the courses that emphasizes content and concept mastery.
3. Include learning outcomes that are centered on 'making sense of mathematics' in real-life contexts (affective domain) instead of just abstraction and computation.



Science

1. Review and contextualize the science teacher curriculum to ensure it meets national and global standards, particularly PISA and TIMMS;
2. Revisit and align Science courses with the ILSA competencies, specifically the content knowledge needed;
3. Develop and deepen future teachers' scientific competencies, content knowledge, problem-solving skills, and appropriate pedagogical skills; and
4. Strengthen students' abilities in knowing, applying, and reasoning about science to find solutions in complicated scientific contexts and multistep problems required in ILSA.

Conclusions

The growing influence of ILSA to provide valuable feedback on improving the education system prompted the conduct of the study. TEIs could contribute to education reform by calibrating their teacher education programs of which the curriculum is a huge part. Although the participants in the FGDs were divided as to the effectiveness of the ILSA in encapsulating necessary education reforms, the FGDs conducted yielded recommendations that called for actions both in the program and micro-level contexts. At the program level, ILSA was suggested to be one of the benchmarks or standards for curriculum development or revision. Finally, at the micro-level, the recommendations called for various initiatives covering stronger teaching of content and pedagogical content knowledge courses, explicit teaching of key ILSA competencies, running of ILSA-like assessments, and targeting ILSA competencies by elaborating the Course Intended Learning Outcomes.

About the Authors

Allen A Espinosa is an associate professor of science education and currently the director of the Educational Policy Research and Development Center of the Philippine Normal University. His current research interests span a broad range of topics including policy research in education, teacher education, information disorder, and social justice in education.

Ma Arsenia C Gomez is an associate professor of social science education at the Faculty of Behavioral and Social Sciences and a Faculty Researcher at the Educational Policy Research and Development Center of the Philippine Normal University. Her current research interests include Muslim education and contemporary issues in education.

Adonis P David is Professor of Counseling and Psychology at the College of Graduate Studies and Teacher Education Research in the Philippine Normal University where he currently serves as the Vice President for Research, Planning and Quality Assurance. His current research interests center on the psychological well-being of teachers and counselors, gender and education, and career development.

Allan S Reyes is an associate professor of mathematics education and currently the deputy director of the Research Center for Teacher Quality of the Philippine Normal University. His current research interests include teacher education and policy research.

Heidi B Macahilig is an associate professor of reading education at the College of Graduate Studies and Teacher Education Research and currently the director of the Office of Admissions of the Philippine Normal University. Her current research interests include first and second language reading and literacy, beginning reading instruction, reading assessment, and language-of-instruction policy.

Leah Amor S Cortez is an associate professor of science education at the College of Graduate Studies and Teacher Education Research of the Philippine Normal University and is currently designated as the Executive Director and Provost of Philippine Normal University South Luzon. Her research interests include life and environmental sciences, ethnoscience, science education, science pedagogies, learning, and assessment.

Praksis A Miranda is a faculty member of the College of Graduate Studies and Teacher Education Research and the Educational Policy Research and Development Center of Philippine Normal University. Her current research interests are on flourishing and well-being in education, policy implications of gender and education, applied sociology and interdisciplinary research.

Brando C Palomar is an associate professor of science education and currently a senior program manager of the Research Center for Teacher Quality of the Philippine Normal University. His current research interests include science education.

Jayson L de Vera is an assistant professor of science education at the Faculty of Science, Technology, and Mathematics of the Philippine Normal University. His current research interests include GEDSI, curriculum and pedagogy, and issues in science education.

Mark Ponce C San Juan is a science research assistant at the College of Graduate Studies and Teacher Education Research and a graduate student currently studying Master of Arts in Education with specialization in Curriculum and Instruction at the Philippine Normal University. His current research interests include issues in curriculum implementation, basic literacy, and comparative education.

Marvin C Patal is a research fellow, currently studying Master of Arts in Mathematics Education with Specialization in College Teaching at the Philippine Normal University. He is a guest instructor, teaching several collegiate mathematics courses, at Laguna State Polytechnic University - San Pablo City Campus. His current research interests include Ethnomathematics, Language of Mathematics, and Learner's Mathematical Self-concept.



The PNU Educational Policy Research, and Development Center

The EPRDC is a specialized research center in the University focused on policy research and studies on teacher education. It is established to provide research-based policy recommendation to policy makers. It also serves as the clearing house for all data relevant to teacher education in the Philippines and beyond.

Vision

The Philippine Normal University through the EPRDC aims to be innovation hub of teacher education research and educational policy studies.

Mission

To strengthen the culture of excellence in teacher education research and educational policy studies.

Objectives

The EPRDC shall manage the University's research production, enhance human resource capabilities, and share expertise to other Teacher Education Institutions (TEIs) in the area of teacher education research

Strategies

1. Establish and maintain a web-based university research portal that facilitates automated research management system and which also serves as the database of teacher education policies and teacher education research in country and Southeast Asia.
2. Share research expertise and competence in teacher education research with other TEIs throughout the country;
3. Develop and disseminate the University research agenda
4. Design and implement the research capability program for faculty and staff;
5. Manage University's research production particularly the conduct of educational policy studies in education and teacher education; and
6. Serve as the implementing arm for research incentives and research ethics review.

Values

SYNERGY (Working collaboratively as a team)

EFFICIENCY (Delivering research services efficiently)

EXCELLENCE (Achieving high quality research outputs)

PRODUCTIVITY (increasing research production of the University)

The **Policy Brief Series** aims to provide observations, analyses, and insights by PNU faculty and researchers on various educational policy issues. The views contained in the policy briefs are those of the authors and do not necessarily represent the official views of the University.

The **Policy Brief Series** is published monthly by the **Philippine Normal University Educational Policy Research and Development Center** (PNU-EPRDC). The PNU-EPRDC oversees the editing, compiling, and printing of the policy brief.

Editors

Term 1, SY 2023-2024

Allen A Espinosa, PhD

Director

Edna Luz R Abulon, PhD

Tito C Baclagan, PhD

Ma Victoria C Hermosisima, PhD *cand*

Ma Arsenia C Gomez, PhD

Praksis A Miranda, PhD

Nina Christina L Zamora, PhD

Faculty Researchers

Lorephil P Carloman

Maria Luz V Rantael

Support Staff

Address

Room 204, Pedro Orata Hall

Philippine Normal University, Manila, Philippines 1000

<https://www.facebook.com/pnueprdc>

