WORK AND CURRICULUM IN PROGRESS: How do Work Immersion Experiences Lead to STEM Senior High School Curriculum Enhancement?

Shaira M. Lansangan & Dr. Arlyne C. Marasigan
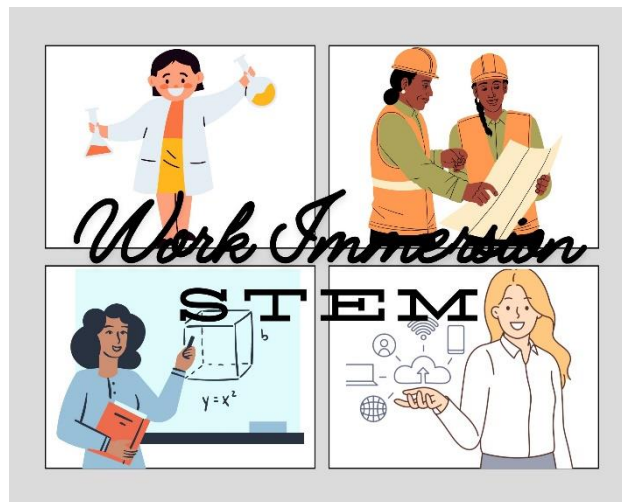
(Image created via Canva)

Work Immersion is a specialized course aimed at helping in the development of the skills and competencies required for future careers. This subject is offered to Grade 12 Science, Technology, Engineering, and Mathematics (STEM) learners. Identifying industry partners suited for STEM learners is essential to facilitate the necessary competencies needed to strengthen the acquired knowledge into practice and bring impact in the development of skills. This policy brief focuses on the work experiences of STEM learners in Work Immersion. Moreover, the following are the key policy recommendations: (1) integrate work immersion experiences into the STEM curriculum, (2) establish formal partnerships between educational institutions and industry stakeholders, (3) soft skills training as a component of work immersion programs, and (4) develop a comprehensive assessment and evaluation framework for work immersion programs. These key recommendations are expected to strengthen the need to align and to establish partnerships with industries suitable to the skills needed by STEM learners which lead to the creation of triple helix collaboration among schools, industries, and communities to test the responsiveness of STEM curriculum.

In 2015, the United Nations Member States provided a shared blueprint for peace and prosperity for people and the planet, now and into the future. One target is quality education, also known as Sustainable Development Goal 4 (SDG 4), which ensures inclusive and equitable quality education and promotes opportunities for lifelong learning. SDG 4 aims to significantly raise the proportion of youth and adults with appropriate skills, including technical and vocational skills, for employment, decent work, and entrepreneurship (UN, 2015).

Senior High School (SHS) now offers two distinct tracks: the Technical-Vocational-Livelihood Track (TVL) and the Academic Track. This is due to the adoption of Republic Act No. 10533 (RA 10533), generally known as the K-12 Basic Education Program. STEM is one of the Academic Tracks that provides learners with an engagement in society that helps them acquire knowledge and skills in preparation for future career pathways. The STEM Strand is a specialized academic track in the Philippines. It focuses on fostering the analytical, problem-solving, and critical thinking abilities of the learners which are essential in the discipline.

Work Immersion is one of the specialized courses offered at SHS. DepEd Order No. 30 s.2017 specifies that it is now a required course for graduation beginning in the academic year 2017–2018. The goals of implementing this program are to (1) gain practical and applicable industrial skills under the guidance of industry professionals; (2) understand the importance and applicability of concepts and theories taught in the classroom; (3) enhance their technical knowledge and skills; (4) refine interpersonal and communication abilities; and (5) develop positive work habits and attitudes (DepEd, 2017). DepEd Order No.30, series of 2017 titled, "Guidelines for Immersion" identified sample work immersion venues. In STEM, sample venues are based on the Local Government Unit Office and Private Establishments. Grade 12 learners will participate in the work immersion program, which is a component of the SHS curriculum. This consists of an 80-hour practical experience or job simulation. Based on the curriculum standards, "work immersion will assist learners build their life and career skills and will equip them to make decisions on post-secondary education or employment."

Through the Work Immersion Program, learners were able to apply the concepts they had learned in the classroom to real-world work (Bustamante, 2019). Those who took part in the Work Immersion Program gained a variety of abilities, including time management, discipline, social interaction, computer and technology skills, and social skills (Salvador, 2020). The learners anticipate that work immersion will help them gain the experience needed for future employment as well as help them develop professional work ethics. Cited studies showed that there are problems when schools place students in different sectors without considering their interest in the field. The course fails to provide the experience required to succeed in their chosen field in the future. This is a crucial tool for their future professions. Hence, there is a misalignment in the expectations of the learners in work immersion.

However, SHS STEM learners have various learning experiences. Some encounter challenges, good opportunities, and other learning-related experiences. These learning experiences have led to the creation of key recommendations that will strengthen the acquired knowledge from theory into practice.

The Challenges

In the field of Work Immersion, learners must acquire knowledge from real-world situations. It is important because it gives the learners a head start and experience that will benefit them in their future endeavors. This subject has also presented educators and students with new difficulties. The primary issues noted by educators, administrators, and students are the results of not collaborating with business partners who share the same interests as STEM students. A combination of industry partnerships and work immersion would allow students to balance theory with application. Additionally, it will benefit learners who will shortly enroll in post-secondary education, which is one of the effective ways to improve the abilities of the learners in their field of specialization.

The Opportunities

Through work immersion, learners can gain real-world experience in a career where they can acquire new skills. The new skills that are developed will pave the way for

alternative labor in the future. The opportunity to teach STEM learners new skills is diminished when educators and administrators are unable to locate industry partners who share the same values. Learners can practice gaining access to the knowledge they need by taking subjects like Work Immersion. They will develop a sense of responsibility as they become aware of their talents and capabilities. SHS graduates who participated in work immersion reported that it had a very favorable social development impact on their capacity for self-efficacy, leadership, and communication (Besa et al., 2022). The immersion exposed learners to a variety of writing and presentation skills as well as skills necessary to technology-related fields, offering them hands-on experiences that refined their technical expertise. Learners had the opportunity to interact with individuals above their position, which significantly contributed to their professional development. Furthermore, collaborating with their peers on the project honed their teamwork and cooperation abilities.

The Learning Process in the Work Environment

STEM learners acquire knowledge and skills by experiencing the different theories in practice. Unfortunately, schools across regions fail to partner with industries suitable for the needs of the learners. Hence, the learning process in the work environment does not exist in the experience of most learners. The immersion experience became a platform for personal growth, teaching learners the significance of confidence in navigating challenges and proving their capabilities. It was a transformative period that allowed learners to recognize their strengths and areas for improvement. The work immersion experience was not just about learning technical skills but also a holistic exploration of professionalism, self-assessment, and career discernment. This exposure, though limited, allowed learners to observe how the company and industry operate and interact with its employees. Overall, the work immersion experience, while primarily project-based, provided learners with valuable insights into the workplace culture and other processes.

Key Policy Recommendations

Based on the challenges, opportunities, and work experiences of STEM learners in the course, it is recommended that curriculum developers consider reviewing the structure of the curriculum through the integration of the following:

• Integrate work immersion experiences into the STEM curriculum.

The STEM curriculum in the Philippines consists of learning competencies that are congested and unpacked. Based on the challenges and opportunities identified by the STEM learners, work immersion must integrate with clearly defined learning objectives. The integration will ensure that work immersion is not an isolated activity but an integral part of the educational journey. The integration of work immersion into the educational journey enhances the learning experience, aligns education with real-world demands, and enhances the readiness of learners for successful careers. It turns learning into an active and useful process, guaranteeing that STEM graduates have the information, abilities, and experiences needed to succeed in their chosen fields when they graduate. Clearly defined objectives help measure the impact and relevance of the immersion program. Therefore, this policy brief recommends the following learning objectives that are suitable for STEM learners. Pre-immersion (Identify the key sectors within STEM industries; Discuss expected behaviors, rules, and regulations in the workplace; Familiarize the importance of processing pre-employment documents; and Explain the components of the portfolio.), Immersion Proper (Discover the technical skills relevant to the STEM field; Develop interpersonal skills, collaboration, problem-solving, and critical thinking skills; and Apply STEM principles and theories to real-world scenarios.), and Post-immersion (Create a reflection on personal strengths, weaknesses, and areas for improvement; Develop an action plan for continuous self-assessment and improvement; and Evaluate the work immersion by producing a portfolio.)

• Establish formal partnerships between educational institutions and industry stakeholders.

Collaboration ensures that work immersion experiences align with industry needs, exposing learners to current challenges and technologies. Identifying industry partners does not necessarily mean looking for big companies. Work Immersion for STEM learners can take place based on contextualization and localization. The schools can tie up with the town municipalities or city municipalities for small businesses and other services. Furthermore, administrators, teachers, and STEM learners may investigate the following sectors (a) Science (science laboratories, small pharmaceutical stores, school clinics, and municipal or

barangay health centers), (b) Technology-based (IT-based company or BPO industry), (c) Engineering (municipal or city engineering offices, mechanical and electrical companies), (d) Mathematics (data-based company, teacher education observers). Based on the availability of the partner industry or institutions, schools with a higher population of STEM learners may separate into batches.

• Soft skills training as a component of work immersion programs.

While technical skills are important, developing soft skills like problem-solving, cooperation, and communication provides learners an edge in employment and productivity in the workplace. The development of skills during a work immersion program is crucial for determining the performance and career trajectory of the learner. Real immersion facilitates the development of critical soft skills like communication, problem-solving, teamwork, and adaptation. To include soft skills training as a component of work immersion, teachers must begin with a comprehensive needs assessment to identify the specific soft skills which most relevant to the demands of the industry and the profession.

• Develop a comprehensive assessment and evaluation framework for work immersion programs.

A well-defined framework ensures that the learning outcomes are measurable and aligned with the objectives of the program. It also enables continuous improvement and adaptation based on feedback. Creating an evaluation framework for work immersion programs entails establishing the main goals, targets, and quantifiable results. Design diverse assessment tools, including self-assessments and supervisor or partner industry evaluations to capture a comprehensive view of the performance of the participant. A thorough evaluation of work immersion might encompass several factors to measure both the efficacy of the program and the performance of the individual. Examine and determine whether the objectives are clear and pertinent to the academic and professional development of the participant. The objectives and setting of the work immersion program may affect the precise standards and relative importance of each assessment element. To customize the assessment to the unique demands, certain modifications could be required.

Conclusion

The STEM curriculum and assessment framework for basic education must be flexible in order to meet the demands of national and international standards, including the development of productive, scientifically literate citizens who can help in the establishment of a progressive, just, and compassionate society. STEM learners in SHS are required to take a specialized course called Work Immersion. Learners are required to take part in the course to improve their competencies and skills. This course exposes learners to get familiar with work-related learning environments that align with their area of concentration. However, cited concerns and challenges in work immersion need to be addressed to achieve quality education for STEM SHS. Thus, this policy brief will lead to the creation of triple helix collaboration among schools, industries, and communities to test the responsiveness of the STEM Senior High School curriculum and assessment framework.

REFERENCES

Besa, A., Borling, K., Lozarito, N., Lagdamen, Q. B., & Fegarido, J. (2022). *Implementation of work immersion and its effects on the social development of senior high school graduates. Indonesian Journal of Educational Research and Technology.*https://ejournal.upi.edu/index.php/IJERTarticle/download/50086/20000

Bustamante, J. A. (2019). *Senior high school work immersion pioneers: A phenomenological study. Journal of International Academic Research for Multidisciplinary, 7(2).*

Department of Education. (2017, June 5). *Department of Education Order No. 30 s.2017 guidelines for* https://www.deped.gov.ph/wp-Work Immersion GOV.PH.content/uploads/2017/06/DO_s217_030.pdf

Department of Education. (2022). *DepEd pushes physical work immersion for SHS in progressive expansion of face-to-face classes.* GOV.PH.https://www.deped.gov.ph/2022/04/27/deped-pushesphysical-work-immersion-for-shs-in-progressive-expansion-of-face-to-face-classes/

OECD (2023), *PISA 2022 Assessment and Analytical Framework, PISA, OECD Publishing, Paris,* https://doi.org/10.1787/dfe0bf9c-en

Salvador, J. P. (2020, January 21). *The impact of the work immersion program to the grade 12 students of John JRussell Memorial high school. Academia.edu.* https://www.academia.edu/41691047The_Impact_of_he_Work_Immersion_Program_to_the_Grade_12Students_of_John_J_Russell_Memorial_High _School

The State of Global Learning Poverty: 2022 Update The World Bank, UNESCO, UNICEF, USAID, FSDO, Bill and Melinda Gates Foundation, 2022, 77 p., Open Access. *Population and Development Review, 48:* 1215-1216. https://doi.org/10.1111/padr.12534

UN (2015). *Transforming Our World: The 2030 Agenda for Sustainable Development. Resolution Adopted by the General Assembly on 25 September 2015, 42809, 1-13.*https://doi.org/10.1007/s13398-0140173-7.2

About the Authors

Shaira M. Lansangan is affiliated with Holy Angel University, Angeles City, Philippines as a General Chemistry teacher and a Grade Level Coordinator. She graduated from Holy Angel University with a Master of Arts in Teaching Science (2021) and a Bachelor in Secondary Education with a focus on Biological Sciences (2016). She is presently enrolled in Centro Escolar University in Manila, where her Doctor of Philosophy major is in Science Education.

Dr. Arlyne Marasigan is an associate professor and a full-time faculty of the College of Advanced Studies at the Philippines Normal University-Manila, a founding adviser of Comparative Education and Students Critical Leadership Society (CESCLS Inc.), and a Graduate Research Office director (2020-2022). She is currently engaged in national and international research collaborations. In addition, she is the co-founder of LakbayLapis2019, a lifetime member of the Women's Studies Association of the Philippines, an associate member of the National Research Council of the Philippines, and a member of Phi Lambda Theta Philippine Chapter. She finished her PhD in Educational Leadership and Policy with specialization in Comparative Education at the Beijing Normal University, China, in 2017.

The PNU Educational Policy Research, and Development Office

The EPRDO 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 recommendations to policymakers. 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 EPRDO aims to be an 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 EPRDO shall manage the University's research production, enhance human resource capabilities, and share expertise with 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 an automated research management system and also serves as the database of teacher education policies and teacher education research in the 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 the 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 Office** (PNU-EPRDO). The PNU-EPRDO oversees the editing, compiling, and printing of the policy brief.

PNU Educational Policy Research and Development Office
(+632) 317-1768 loc 750 | eprdc@pnu.edu.ph | www.pnuresearchportal.org