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Foreword

Education 4.0 (E4) framework known as “The Dawn of Digital Monarchy” is believed to direct Generation Z (13-19 years old) learners to the new skill set that would be required by the jobs-of-the-future. These skills include: new media literacy, virtual collaboration, cognitive load management, social intelligence, computational training, transdisciplinary, design mindset, novel and adaptive thinking, and sense making (Dockweiler, 2018). A leapfrog to such framework emphasizes the vision of Education 4.0—innovation society and knowledge economy—an imperative for the success of Industrial Revolution 4.0 (IR4) that features cyber-physical systems (Renjen, 2018; Van Duuren, 2017). Drivers to the goals of Education 4.0 may include STEM learning, learning by doing, rote to rigor, and team learning.

As a route to Education 4.0 framework, the Normal Lights features eight articles clustered into themes such as standardizing the Higher Education and education sector management, STEM Education, language and learning, and psycho-social dimensions of education. One of our articles emphasizes school and government level concerns of education. Abdullah used grounded theory to explore the emerging government support to private Higher Education Institutions (HEIs) in Bangladesh consequently directing HEIs to “Partnership Approach” that spells out collaborative and supportive government policies to bolster private higher education to support nation building.

Teaming up the private and government-owned higher education may provide a good platform for nation building by developing strong STEM-influenced human capital through STEM education. Two articles explored means and ways to provide Generation Z learners with adaptive learning environment

for STEM learning. Caparoso, Aguilar, Lagura and Evangelista determined the climate change knowledge and calculated the equivalent individual carbon footprint of sampled grade 10 Filipino learners and correlated the results to demographic factors to determine causative factors that may lower carbon footprint. They emphasized developing science learning episodes within the context of education for sustainable development to achieve significant carbon reduction. Broadway's and Zamora's attempt to develop strong STEM-influenced human resource revolved around using the national language as an auxiliary language in teaching Mathematics. They even recommended strengthening language policy to accommodate national and local languages of the country as means to student communication at all levels of STEM learning.

Language and learning seem to play crucial roles in seeking and developing new skill sets to prepare our Generation Z learners in the world of their future work that highly emphasize digital innovations, biotechnology, energy and environment, and advanced materials. It is a generation that significantly seek extremely cognitive human-machine interface and targets fluent transfer of knowledge from the interface to the community and the society. Three articles explored vital trainings to achieve these new skills that entail confluence of technology and language learning. Orenca investigated the effect of using multimedia blurb on L2 (second language) reading comprehension of narrative text and found that digital tools utilized in language learning likely enhance the reading comprehension of the sampled participants. Proposed inclusion of Maritime English course perpetuated in the study of Mercado, Modol, Sarmiento and Jalbuena. Their investigation confirms the need to include Maritime English course(s) in the Maritime curriculum as language preparation for maritime jobs-of-the-future, which would require on-the-job continuous communication. Contextual collaborative learning highlights the investigation of Reyes and Murray-Harvey

who explored and developed a multicultural teacher education curriculum from triadic inputs: preservice students, teacher education faculty and administrators. Their curricular product features content decentralization and localization to accentuate the concept of learning in teams (in the local context)—a highly sought after pedagogical approach in the Education 4.0 framework (Duivenvoorden, 2017).

Our final set for E4 framework underscores the other dimensions of teaching and learning process. Gavillano, Nalipay and David probed the role of hope in promoting society-oriented future goals amidst industrialization. They found that factors such as family, peers, and spirituality matter in promoting students' future aspirations to help and contribute to the society with education as one prospective pathway to maintaining balance in the cyber-physical world of IR4. Our final article deliberately considered complexities in the E4 educative process by exploring rhizomatic learning. Apparently, rhizomatic learning underscores a way of thinking about learning that exudes multiplicity, interconnectedness and self-relicating of ideas. Nery-Cura and de Guzman accentuate the concept of rhizomatic learning acknowledging a “no-beginning-or-end”-like learning process within the history content gaining several positive insights in the field of history teaching. Relatively, their study points to learning as a social process (Cormier, 2010).

Learning within the bounds of E4 and IR4 seems complex, unbounded, messy, and may be considered as not fitting comfortably the structures of the current educational trends. Significant inputs from R & D and social science research such as what our articles showcase may form unique E4 framework to develop Filipino 4.0 to meet the skill sets of job-of-the-future for national progress—a vision of *AmbisyonNatin2040*.

The Editor

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