

## **Education and Industrial Revolution 4.0: Prospects and Challenges to ASEAN Education in the Case of Philippine Education**

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### **ABSTRACT**

*ASEAN Education is confronted with the emerging paradigms of twenty-first century education brought about by the rapid globalization process and the dawning of the new industrial revolution popularly dubbed as “IR 4.0” (Industrial Revolution 4.0). IR 4.0 demands a new framework of education – one that readies individuals with appropriate, competent, and highly innovative skills as man-machine collaboration intensifies. Hence, there is now a shift of focus from improving industrial machines to investing more in human capital. This is the pathway ASEAN education is traversing right now. ASEAN Education aims primarily at producing highly skilled service providers who are twenty-first century ready and who will work effectively and efficiently for industries in the IR 4.0. Nevertheless, education is more than being able to stabilize and improve one’s economic standing in life. There is a more noble purpose towards which one undertakes the tedious process of learning. That is: to be fully human and transform the world. Using Paolo Freire’s Critical Pedagogy, the modalities and paradigms of twenty-first century education were critiqued in order to align with this vision. Thus, with the ongoing innovative progress in ASEAN Education, serious considerations arise: “Will the alignment of man and machine to enable new possibilities cause further alienation for humanity?”; “When real classrooms are substituted by virtual classrooms, will healthy social interaction be maintained?”; “Are the trends*

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*of the twenty-first century education truly set towards the furtherance of human depth and breadth?*

**Keywords:** *criticality, education, fourth industrial revolution, globalization*

## 1. Introduction

“Education is a companion which no future can depress, no crime can destroy, no enemy can alienate, and no nepotism can enslave,”<sup>2</sup> said Oguntimehin. This thought surely resonates surely in the mind of every learner. Education is indubitably one of the most valuable rights and assets that people across the world hold so dearly. Embedded in every culture, every family and society would uphold its unquestionable value. For instance, many Filipinos consider it as the most valuable inheritance that no material possession can equal. Many of them view it as their passageway towards success and a surety to a brighter future. Thus, a lot of Filipinos invest heavily on education. Families and communities work hard for their children to finish college. More importantly, in view of the many social and political ills entrenched in their society, many Filipinos also perceive education as the only way to quell the oppressive social condition. It is the sure means through which Filipinos, particularly the poor, marginalized and oppressed, can reclaim their lost or waning sense of humanity, worn down by the shackles of poverty, corruption, hunger, and other oppressive social structures that degrade them. In the twenty-first century, when life has become even more complex and harder to survive socially, politically, and economically, education has become even more indispensable in the lives of Filipinos.

Education in the twenty-first century, characterized by the emergence of rapid educational reforms, is very much stirred by neoliberal ideologies, capitalist systems and the shift of interest to human capital brought about by the globalization process. With the inception of Industrial Revolution 4.0 (IR 4.0), educational paradigm

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<sup>2</sup> As quoted in Queena N. Lee-Chua, “Why Education Matters: Quotes from the Wise,” *Inquirer.net*, June 10, 2012, <https://newsinfo.inquirer.net/210221/why-education-matters-quotes-from-the-wise>.

shifts have become more rapid and necessary. If education fails to prepare people for the new industrial revolution, the latter can hardly cope with the changes. In effect, Education 4.0 must come as a response to IR 4.0. It should march with highly innovative and technical strategies and methodologies that will cater to the demands of the said industrial revolution. Presently, Education 4.0 adopts a skill-based educational program that integrates to the system the utilization of technologies such as Artificial Intelligence, Internet of Things, Cloud Computing, and other emergent technological advancements. The resulting educational landscape will be different. For instance, classrooms will no longer be limited to a four-walled structure since online classrooms that actualize distance and remote learning will be the trend. Nevertheless, with these transitions, humanity will have to face high stakes and will have to pay the high price brought by these innovations.

Looking closer, Education 4.0 can tend to be narrowed down into mere production process, where strong human capital will be responsive to the demands of the labor market in the IR 4.0. It follows that schools are becoming more of training and testing facilities instead of being a meeting place for curious minds who want to create and recreate knowledge about the self, society and the world. Here, future laborers are programmed with skills to facilitate in creative and innovative ways, the various industrial processes in IR 4.0. Education now can be compared to an industrial factory wherein machinery is made and programmed to suit the ever-growing needs of the production process.

Unfortunately, this is the pathway being traversed by Philippine Education 4.0: producing skilled Filipino workers programmed for the IR 4.0. This is the educational paradigm that forces Filipinos to learn skills that are mostly beyond their resource capabilities. With a brand of education that rests on a neoliberal framework and on a purely skills-based paradigm, the essence of being “human” is at stake. Filipinos, being ushered into an almost alien educational framework, may lose sight of their goal for a strengthened humanity if they become distorted by the said framework. They might end up being trapped in the dehumanizing structures perpetrated by capitalists whose sole concern is personal productivity and wealth.

In line with this, this study argues that students should not only be sent to school to develop the skills appropriate for a laborer in the IR 4.0. Rather, they must be able to develop critical awareness of their context, learn how to dialogue, and foster a deep sense of humanity through education. This is something that they must cultivate so that they do not only become competent individuals for IR 4.0 in the globalized world but also vanguards of liberation and humanization especially for the poor, marginalized, and the oppressed.

## **2. Results and Discussion**

### **2.1. The Phenomenon of Industrial Revolutions**

The First Industrial Revolution was characterized by using steam and waterpower to automate production; the Second, by the use of electricity; and the Third, by the use of electronics and information technology. What is now called as the “IR 4.0” comes not as a prolongation of the third, but a distinct industrial revolution characterized by a fusion of technologies evolving at an exponential pace.<sup>3</sup> At present, the concept of “Education 4.0” is trending among educators and a popular theme in various educational conferences. It comes as a response to IR 4.0 (Fourth Industrial Revolution - FIRE).<sup>4</sup>

The development of Industrial Revolution (IR) and Education has evolved in tandem, with each phase of IR influencing educational paradigms. IR 1.0, characterized by mechanization and steam power, led to Education 1.0, where rote learning and basic skills were emphasized to meet the demands of industrial jobs. IR 2.0 introduced mass production, and Education 2.0 aimed to standardize education to provide a skilled workforce. IR 3.0’s automation inspired Education 3.0, focusing on problem-solving and critical thinking. IR 4.0, marked by digitalization and automation, now prompts Education 4.0 to incorporate technology and digital literacy.

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<sup>3</sup> Klaus Schwab, “The Fourth Industrial Revolution: What It Means, How to Respond,” WorldEconomic Forum, January 14, 2016, <https://www.weforum.org/agenda/2016/01/the-fourth-industrial-revolution-what-it-means-and-how-to-respond/>.

<sup>4</sup> The “Fourth Industrial Revolution 4.0” shall be referred to as “IR 4.0” or “FIRE” interchangeably.

Puncreobutr gives a short discussion on how education has responded to each of the past industrial revolutions: Education 1.0 came as a response to the need of the agricultural society and it is characterized by a transfer of knowledge from the teacher to the learner through concept acquisition, comprehensive study, and explanation as the main method; Education 2.0, on the other hand, is a response to the demands of the industrial society and had put much emphasis on teaching how to use tools. Education 3.0 addressed the need of the technological society, giving importance on self-learning and technological literacy, and focusing on interactive learning. Finally, Education 4.0 is now catering to the need of society in ‘innovative era’ with emphasis on the ability to apply new technology enabling learners to develop adaptability to the drastic changes in society.

IR 4.0’s impacts on socio-economic development in ASEAN, including the Philippines, are profound. While it created opportunities for highly skilled workers, it also displaced manual and routine jobs, leading to income inequality. Labor markets today demand digital skills and adaptability. In response, Education 4.0 aims to equip students with technology proficiency. Peter Fisk explains:

Education 4.0 comes as a response to the needs of “Industry 4.0” or the fourth industrial revolution, where man and machine align to enable new possibilities; harnesses the potential of digital technologies, personalized data, open sourced content, and the new humanity of this globally-connected, technology-fueled world and establishes a blueprint for the future of learning – lifelong learning – from childhood schooling, to continuous learning in the workplace, to learning to play a better role in society.<sup>5</sup>

With the multifarious demands of IR 4.0, Education has to be reshaped and recalibrated to meet the needs of twenty-first century learners. This is one enormous task to seriously consider to be globally progressive and competent. Nevertheless, the drastic changes brought by scientific and technological revolutions and the on-going innovations of the twenty-first

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<sup>5</sup> Peter Fisk, “Education 4.0 ... The Future of Learning Will be Dramatically Different, in School and Throughout Life,” Genius Works, January 24, 2017, <https://www.thegeniusworks.com/2017/01/future-education-young-everyone-taught-together/>.

century have made life even more complex and confusing. Humanity stands on unstable ground wherein reality and truth can hardly be established. As information has become more accessible and linkages have been established and strengthened, it is all the more that plurality, relativism and division are felt. The complexity of times has propelled humanity to innovate and adopt measures that would facilitate human activities.

To address this transition, governments in ASEAN, including the Philippines, must invest in reskilling and upskilling programs, nurturing a diverse talent pool for the gig economy and creative industries. Furthermore, public-private partnerships are essential to bridge the gap between industry demands and educational outcomes. The greatest challenge then would be on how human beings can be authentic amid the onslaught of dehumanizing structures.

## **2.2. FIRE and Education in the ASEAN Region: Globalization and Integration**

Recalling the condition of ASEAN Education, this study posits that the dominant trends cascade from the efforts to standardize the quality of ASEAN education according to the demands of IR 4.0, which is obviously influenced mainly by neoliberal ideologies. This implies that education will be perceived more, if not solely, according to its fruit-bearing capacity, that is, its capacity to give back to the economy. This means that a student looks at his/her education as an economic investment and finishing his education as yielding a higher chance of employment that will guarantee a return of capital. Various trends can be observed as impacts of FIRE on ASEAN Education.

### *2.2.1. Commodification and the Increasing Cost of Education*

Commodification<sup>6</sup> in education is becoming rampant nowadays because of the intensified consumer culture, all due to the heightened impact of neoliberal ideologies. The term refers to a market-infused approach to education that treats knowledge as a commodity whose exchange value is measured crudely by comparing the cost of acquiring a degree (tangible

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<sup>6</sup> Commodification is to be treated as synonymous to profiteering and commercialization.

certification of “product” acquisition) with the financial earnings the degree supposedly enables. Commodified education is a situation wherein educators are seen as service providers while students are treated as customers. Students do not treat knowledge as an end but as a means towards a desired end – employment.

The market-driven system in Philippine Education 4.0 is turning Filipino students into customers, teachers into paid service providers, and knowledge as a commodity. In this regard, Philippine Education 4.0 espouses an educational process that is understood as “analogous to a commercial transaction: students pay tuition and in return receive knowledge, skills, and a degree certifying qualification for a vocation.”<sup>7</sup> Since students are consumers in this sense, the goal of ASEAN Education 4.0 is customer satisfaction – to give what the customer desires. As such, the institution is bound to deliver whatever the students are paying for at the expense of quality and purpose. On the other hand, teachers as service providers are expected to render exactly what has been paid for by the consumers (students) and the student evaluation, which may not be accurate at all times, then serves as a barometer of customer satisfaction.

Commodification is made more manifest by the steady increase of cost in education, especially in the case of private education, and this is expected. But while public education is supposed to be free in the Philippines, other necessary expenses on school supplies, school uniform, food, fare, board and lodging and other school-related fees make sending children to school financially burdensome. Moreover, it becomes even more onerous due to the demand that education must be responsive to IR 4.0. Since public schools often lack the resources, the technologies and facilities required to implement Education 4.0 have to be shouldered by the family or their benefactors who support their education.

To learn Information and Communication Technology (ICT) effectively, one must at least have a smartphone to begin with. Otherwise, it would be impossible to work on ICT-related activities. If another learner needs to be trained to communicate online, then he or she must be provided with an internet connection as a minimum standard. These

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<sup>7</sup> Roy Schwartzman, “Consequences of Commodifying Education,” *Academic Exchange Quarterly*, 17, no. 3 (Fall 2013): 42.

are costly, especially for students who come from families with meager incomes. It is unfortunate that despite the Free Tuition Law and other subsidies that supposedly provide access to education for all, many learners are still out-of-school because of the above-mentioned reasons.

Case in point, the Philippine Statistics Authority (PSA) records high cost of education or financial concern as one of the main reasons that prevent approximately 3.6 million out-of-school children and youth (OSCY) from attending school.<sup>8</sup> This furthers the idea that education has indeed become a commodity belonging only to those who can afford it. Alongside commodification in Philippine Education 4.0 is the upward movement of privatization in Philippine Education. With education 4.0 demanding for greater linkage between the public and private sectors, it is obvious that more hands from the private sector are dipping in the Philippine education system. As far as privatization in education is concerned, there are numerous evidences that the Philippine state has been supportive of its existence such as the 1987 Constitution, Article 14, Sec. 4; Public-Private Partnership (PPP) programs and projects; Philippine Development Plan 2011-2016; the Expanded Government Assistance to Students and Teachers Private Education (EGASTPE) and Education Service Contracting under the GASTPE.<sup>9</sup> Quite recent proofs for privatization in education in the Philippines are the operation of Affordable Private Education Centers (APEC)<sup>10</sup> and the SHS Voucher

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<sup>8</sup> Philippine Statistics Authority, “Nine Percent of Filipinos Aged 6 to 24 Years are Out of School (Results from the 2017 Annual Poverty Indicators Survey)”, Gov.Ph, June 6, 2018, <https://psa.gov.ph/content/nine-percent-filipinos-aged-6-24-years-are-out-school-results-2017-annual-poverty-indicators>.

<sup>9</sup> The Civil Society Network for Education Reforms et. al, “Privatization, Commercialization and Low Government Financing in Education: Infringing on the Right to Education of Filipinos,” February 2016, [http://www.aspbae.org/userfiles/may16/HR\\_ParallelReport\\_Philippines.pdf](http://www.aspbae.org/userfiles/may16/HR_ParallelReport_Philippines.pdf), 13-15. See also Department of Education, “DepEd increases educ assistance for students in private schools”, 2014, <http://www.deped.gov.ph/press-releases/deped-increases-educ- assistance-students-private-schools>.

<sup>10</sup> The Civil Society Network for Education Reforms et al, “Privatization, Commercialization and Low Government Financing in Education: Infringing on the Right to Education of Filipinos,” 16. APEC schools claim to supply “affordable” private education to large numbers of “economically disadvantaged” Filipino students who are willing to pay for basic education under the “pretext of an urgent need to provide affordable quality education to millions of Filipino children of secondary school-age whose only option at present is to enroll in an overcrowded



Program in the K to 12 Program.<sup>11</sup>

Meanwhile, privatization in education, with a strong support from the government, results in an increase of preference for the program offerings of private schools, which are mostly owned by profit-oriented corporations, resulting in costly school fees. This is reinforced by the mindset that private schools offer better quality education than public schools. And while public education continues to lag in infrastructure and facilities which are IR 4.0 ready, private education institutions are gaining popularity with their promise of up-to-date and state-of-the-art facilities that serve IR 4.0 very well. Moreover, with stricter admission and retention policies and a controlled number of enrollees, private education institutions appear to be really doing well in the delivery of quality education as focus and conduciveness can surely take place. This is something that cannot be achieved in public schools that often suffer from congestion.

Noteworthy is the fact that intensified academe-industry relationship is an important facet of ASEAN Education 4.0. Nowadays, education-labor mismatch is frequently caused by the weak academe-industry relationship. To solve the problem, there is a need to strengthen such relationships. With the present demands of the IR 4.0, ASEAN Education 4.0 will have to build stronger linkage with industries to ensure that the skills to be nurtured among students will be appropriate and relevant. Hence, it is expected that industries will play key roles in education and their services will be indispensable. However, this shows how industry becomes the destination of education. The presence of industries in education amplifies the intention to make education economically productive. There is no wonder why tuition-run, market-driven private education institutions are doing way better than public institutions in terms of the employability of their graduates.<sup>12</sup>

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public school,” Department of Education & APEC (2013, April 24). Memorandum of Understanding. Manila, Philippines.

<sup>11</sup> “Senior High School Voucher Program (SHS VP),” Private Education Assistance Committee (PEAC), accessed on April 10, 2020, <https://peac.org.ph/senior-high-school-voucher-program/>.

<sup>12</sup> Cf. “Private universities’ quest to improve degree quality and graduate employability in the Philippines,” *QS Asia New Network*, July 2, 2018, <https://qswownews.com/private-universities-quest-to-improve-degree-quality-and->

### *2.2.2. Maximization of Academic Performativity*

Adapting to a market-driven framework, ASEAN Education 4.0 strongly supports maximized performativity at all levels. This is to ensure overall customer satisfaction and good standing in the competition among institutions. This is palpable both in the public and private educational institutions. This focus on maximized performativity can be seen in the institutions commitment to quality management system (QMS), various program and institutional accreditations and the effort to be an ISO-Certified institution with ISO Certification 9001:2015 as the latest, a “standard that defines the way an organization operates to meet the requirements of its customers and stakeholders: Customer focus, Leadership, Involvement of people, Process approach, Organizational context, Continual improvement, Fact-based decision making, and Risk-based thinking.”<sup>13</sup> Moreover, performativity as a norm in the academe is manifested by the various meritocracies: academic staff are promoted, rehired, and gifted with incentives based on performance outputs in teaching, research, extension services, and production.

As a result, the pressure to be productive in the areas of instruction, research, extension, and production has been intensified. Teacher performance is frequently evaluated on a statistical basis both by the supervisors and the students. Furthermore, student performance in national achievements, various academic and non-academic competitions locally and abroad, and professional board examinations has become key focus in educational institutions. As a matter of fact, student performance has become a battlefield among them. This has become an indicator of an educational institution’s caliber.

### *2.2.3. Prioritization of Skills Development*

With economic productivity in mind, the Outcome-Based Education (OBE) as the norm of ASEAN Education is bound to prioritize skills development over the critical consciousness of the students. In sum, OBE focuses on the desired outcomes of education, oftentimes subject-specific or course-specific, as expressed in the learning objectives,

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graduate-employability- in-the-philippines/.

<sup>13</sup> *QS Asia New Network.*

contents, methodologies and strategies of which administrators and teachers have over-all control. It measures learning by means of the skill/s that students develop in all learning tasks. It has been mentioned that ASEAN Education 4.0 is geared towards the production of skilled human capital. As a matter of fact, the Philippine CMO No. 46, Series of 2012, which institutionalized OBE in the educational system, highlights in section (2) the need to meet national and international standards for highly exportable careers such as “engineering; information technology and computing; maritime education; accounting; and nursing”<sup>14</sup> and amplifies the Commission on Higher Education’s (CHED) commitment to “developing competency-based learning standards” for these career path “in compliance with existing international standards.”<sup>15</sup> Hence, skill in the sense of Philippine Education 4.0 often tends to yield to industry demands.

Nevertheless, it can be argued that in a purely skills-focused education, critical consciousness and self-reflection may not be developed at all. They might not even be part of the agenda since what matters is that skilled human capital is produced to serve industry. Schwartzman warns that “consumerism has no interest in customers engaging in self-reflection to question or alter their desires.”<sup>16</sup> In effect, Education 4.0, being market-driven, may only cater to the skills programmed for a particular career course chosen by the student. Thus, instead of helping students discern a more appropriate career path, it forces upon the students the skills that their chosen course and future labor requires. This means that even if Juan is not fit for an ICT-related work, for as long as he wants it, the institution will still force ICT skills on him. These fall under the pretext that ICT is in demand in the international labor market.

It is bothersome to think that despite the seeming failure of ASEAN Education 4.0 to ignite critical consciousness due to its skill-focused and market-driven framework, critical thinking is included as a top priority among the twenty-first century skills that students need to

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<sup>14</sup> Commission on Higher Education, “CHED Memorandum Order No. 46, Series of 2012”, 2.

<sup>15</sup> Commission on Higher Education, “CHED Memorandum Order No. 46, Series of 2012,” 4.

<sup>16</sup> Roy Schwartzman, “Consequences of Commodifying Education,” *Academic Exchange Quarterly* 17, no. 3 (Fall 2013): 41.

harness.<sup>17</sup> Hence, there is a need to understand how critical thinking is viewed in the light of ASEAN Education 4.0. This is also timely since critical thinking has been frequently observed as a deficiency among many learners today.<sup>18</sup>

#### 2.2.4. *Critical Thinking “Skill”*

Critical thinking has always been an important terminology in the academe. Its definition has evolved through the years. In the context of the twenty-first century, it may be understood as employing higher order analytical skills in problem-solving situations.<sup>19</sup> It is among the 4Cs of twenty-first century Education alongside communication, collaboration, and creativity. Interestingly, it is argued that high innovators of the IR 4.0 place critical thinking skills as the number one skill that they are working hard on and value it more than technical skills for the reason that “while algorithms are getting better at making recommendations and drawing conclusions, the uniquely human skills of judgment and critical thinking are still essential for interpretation and final decision-making.”<sup>20</sup> Despite the presence of AI and cyber physical systems in IR 4.0, critical thinking is indispensable as human potential and resources will be needed in analyzing and evaluating the efficiency and effectiveness of digital technology and systems used in the industry.<sup>21</sup>

Meanwhile, critical thinking is closely linked with the other Cs. The hysteria caused by IR 4.0 requires a critical and creative workforce. Robots may ensure fast production, but they are not as creative as

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<sup>17</sup> Commission on Higher Education, “CHED Memorandum Order No. 46, Series of 2012,” 4.

<sup>18</sup> Commission on Higher Education, “CHED Memorandum Order No. 46, Series of 2012,” 4.

<sup>19</sup> Rene R. Belecina and Jose M. Ocampo, Jr, “Effecting Change on Students’ Critical Thinking in Problem Solving,” *Educare: International Journal for Educational Studies*, 10, no. 2 (February 2018): 110.

<sup>20</sup> Suzane Hupfer, “Critical Thinking Rivals Technical Skills for Industry 4.0 Success,” *Deloitte*, April 17, 2019, <https://www2.deloitte.com/us/en/pages/technology-media-and-telecommunications/articles/critical-thinking-skills-required-industry-4-0.html>.

<sup>21</sup> Debora Pratiwi S. and Dan Rusman, “Enhancing Critical Thinking Skills in Higher Education in Preparation of Industry 4.0: A Literature Review,” December 30, 2018, [http://icerd2018.conference.upi.edu/wp-content/uploads/sites/30/2018/12/Fullpaper\\_Debora-Pratiwi.pdf](http://icerd2018.conference.upi.edu/wp-content/uploads/sites/30/2018/12/Fullpaper_Debora-Pratiwi.pdf).

humans.<sup>22</sup> A creative workforce will be able to maximize the potential of budding technologies. Critical thinking skills, often understood as problem solving skills, will draw on communication and collaboration. “Successful problem solving in the twenty-first century requires us to work effectively and creatively with computers, with vast amounts of information, with ambiguous situations, and with other people from a variety of backgrounds.”<sup>23</sup> Hence, teamwork and cooperation are very much essential.

In view of the foregoing, critical thinking, together with the other Cs, is sometimes perceived to be merely a skill or competency that is highly relevant in the operations and management of IR 4.0. ASEAN Education 4.0, then, is rallying for a critical thinking that is proper to industrial work – analytically operating and creatively innovating on technologies used in IR 4.0. It is a critical thinking that translates to competitive quality of service in the international labor market that they are now advancing towards IR 4.0.

### **2.3. ASEAN Education 4.0 in the Case of Philippine Education: Critique and Challenges**

It is very alarming that with the going trends of Education 4.0 being maneuvered by the principles of free market capitalism as manifested in the abovementioned observations, the right to education as enshrined in no less than the Philippine Constitution<sup>24</sup> is gradually becoming a commodity that only a privileged few can afford. Despite free public education, privatization schemes in education and the increasing cost thereof certainly discriminate against the poor and steal from them the right and opportunity to access quality education. Meanwhile, the intensifying academe-industry linkage might narrow down the Filipino

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<sup>22</sup> Alex Gray, “The 10 Skills You Need to Thrive in the Fourth Industrial Revolution,” *World Economic Forum*, January 19, 2016, <https://www.weforum.org/agenda/2016/01/the-10-skills-you-need-to-thrive-in-the-fourth-industrial-revolution/>.

<sup>23</sup> Gray, *World Economic Forum*.

<sup>24</sup> Article 14, Section 1 of the 1987 Constitution of the Republic of the Philippines provides: “The State shall protect and promote the right of all citizens to quality education at all levels, and shall take appropriate steps to make such education accessible to all.”

mindset into thinking that education equals employment and economic well-being. This deprives them of the consciousness that education, more than being a steppingstone towards economic stability, leads to the liberation of one's mind, transformation of one's state of life and actualization of one's humanity.

Having said that, Education 4.0 is prone to dehumanize learners as it can deny access to quality education, perceived by many to be the only way to reclaim the lost sense of humanity, and may reduce them to programmable laborers invested with skills required by the emerging industries of IR 4.0. Towards the end of his life, Freire warned of the destructive impacts of neoliberalism on human dignity and development.<sup>25</sup> Nowadays, we witness how neoliberalism has successfully dominated almost all the social, political, economic, and educational processes in the entire world. Philippine Education 4.0 is one concrete proof of this domination, to which we shall now apply some of Freire's important teachings by way of critique.

### *2.3.1. Knowledge as "Being" over Knowledge as "Having"*

Commodification in Education 4.0 spurs the idea that knowledge is a product to be purchased or a capital to be invested in, with an expectation of economic gains. The schools and its administration, faculty and staff are treated as service providers or sellers of knowledge who are expected to sell products that heed customer demands and maximize services for outstanding customer satisfaction. Students are seen as customers who buy the commodity, invest in it, with the hope to enhance their future employment and earning capacity. Henceforth, knowing is viewed as a process of "having" – accumulating knowledge or "skills" in the sense of Philippine Education 4.0 for the purpose of using them in IR 4.0. Nevertheless, this idea of knowing is unacceptable in Freire's Critical Pedagogy. Knowing as "having" constitutes what Freire detested as the banking concept of education wherein students are considered as passive recipients of knowledge or skills.

ASEAN Education 4.0 well corresponds to the banking concept

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<sup>25</sup> Peter Roberts, "Impure Neoliberalism: A Freirean Critique of Dominant Trends in Higher Education," *Rizoma Freireano* 22 (2017), <http://www.rizoma-freireano.org/impure-neoliberalism-22>.

of education with its OBE'dized framework granting overall control of the learning process, from the objectives down to the outcomes, to the administrators and teachers, with little to no contribution from students. Nonetheless, Freire considers knowing as “being” – a constant unveiling of reality and understanding one’s own self, one’s fellows, and the world. Contrary to knowledge as a finished product to be sold, Freire argues that knowledge emerges through constant “invention and reinvention.”<sup>26</sup> Knowing is not accumulating knowledge but an arduous process of self-discovery and transforming oneself. It is a continuous search for one’s humanity.

### 2.3.2. “Authority” not “Authoritarianism”

Education 4.0 espouses maximized academic performativity in all areas of instruction, research, extension, and production through QMS, accreditation, and various meritocracies. Nevertheless, Freire would be supportive of these, sans the authoritarianism that may spring from it. He would argue that teaching is not an ‘anything goes’ affair, that teachers must know their subjects well, thoroughly prepare their lessons, and keep themselves organized in the classroom.<sup>27</sup> He further suggests that teachers must be authorities in their respective disciplines. Thus, he rejects the idea that teachers are mere facilitators of knowledge, acknowledging the fundamental difference between teachers and students, suggesting that the former must exercise a certain kind of authority but not authoritarianism.<sup>28</sup> Authoritarianism, from the Freirean, perspective, is what the banking concept of education is all about; that is, the teacher becoming the sole monopoly of knowledge and students’ being suppressed from participating in the creation and recreation of knowledge. Freire warns, “authoritarianism will at times cause children and students to adopt rebellious positions, defiant of any limit, discipline, or authority. But it will also lead to apathy, excessive obedience, uncritical conformity, lack of resistance against authoritarian discourse,

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<sup>26</sup> Paulo Freire, *Pedagogy of the Oppressed*, 30th Anniversary Edition. Translated by Myra Bergman Ramos (New York: Continuum International Publishing Group Inc., 2005), 72.

<sup>27</sup> Freire, *Pedagogy of the Oppressed*, 72.

<sup>28</sup> Peter Roberts, “Teaching as an Ethical and Political Process: A Freirean Perspective,” in *Ngā Kaupapa Here: Connections and Contradictions in Education*, eds. Vicki Carpenter et al. (Melbourne: Cengage, 2008), 99-108.

self-abnegation, and fear of freedom.”<sup>29</sup> Moreover, this would also manifest the bureaucratic relationship among school administrators, faculty, and staff. There is a tendency among educators to flaunt their achievements and ranks to degrade those who trail behind them. As a result, the lower ranking faculty and staff are demoralized.

### 2.3.3. *Learn “Together” over Learn “Alone”*

ASEAN Education 4.0 at present is adopting personalized and distance learning. Thus, it becomes more focused on the personal progress of the “individual.” In distance learning, the individual learner will make learning adapt to one’s interests and pacing. This allows the learner to choose the content of learning according to one’s personal taste and flexibly manage one’s time to straddle both academic and extracurricular activities.<sup>30</sup> This is another manifestation of the strong consumer culture at work in the educational system. Consumerism prioritizes the satisfaction of one’s self-vested interest. Freire, on the other hand, would always emphasize the social nature of education. This is why he would promote dialogic education. He states, “I engage in dialogue because I recognize the social and not merely the individualistic character of the process of knowing.”<sup>31</sup> Moreover, what Freire refers to as a social process is the vocation to name the world and transform it. “In education, as in many other fields of human endeavour, much of what we do is demonstrably driven by an interest in the well-being of others that our own personal economic self-interest.” Hence, to learn “together” is better than learning “alone.”

### 2.3.4. *Critical Thinking as Problem-Posing over Problem-Solving*

ASEAN Education 4.0 adheres to the idea of critical thinking as an industrial skill which is sought after by innovators who believe that a critically creative workforce is what IR 4.0 needs. Critical thinking in this sense equals competence in operating, troubleshooting, and innovating on emerging technologies such as AI. It is “critical thinking” that pertains to

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<sup>29</sup> Paulo Freire, *Letters to Cristina: Reflections on My Life and Work*, (London: Routledge, 1996) 209.

<sup>30</sup> Roberts, *Rizoma Freireano* 22.

<sup>31</sup> Freire, *Pedagogy of the Oppressed*, 17.



a skill utilized for coming up with viable solutions to various industrial problems. It is critical thinking within the ambit of problem-solving.

Freire, however, presents a different concept of critical thinking. Freire considers critical thinking as a process of discerning the indivisible solidarity between the world and the people, leaning towards transformation beginning with one's own self and aiming to transform the world.<sup>32</sup> It is critical thinking referring to critically transitive consciousness that enables a person to grasp his/her context, understand the problem, and execute appropriate actions to solve it. It is a key element in Freire's Critical Pedagogy. It is a "way of thinking about, negotiating, and transforming the relationship among classroom teaching, the production of knowledge, the institutional structure of the school, and the social and material relations of the wider community, society, and nation state."<sup>33</sup> Critical thinking, in Freire's terms, has something to do with rejecting power dynamics and effecting social change and transformation. It is more than just mere cognitive skill to be used for some industrial work. It rests in the interplay of reflection and action that impacts society at large. It is critical thinking that is not just problem-solving but problem-posing.

#### **2.4. Trajectories of ASEAN Education 4.0: (Re)humanization of Philippine Education through Critical Pedagogy**

The evolution of IR and Education has been closely intertwined, with each phase influencing the other. IR 4.0 has reshaped labor markets in ASEAN, necessitating digital skills. In response, Education 4.0 incorporated technology into curricula. Meanwhile, the emerging IR 5.0 and Education 5.0 demand a balance between human intervention and technological advancements, which ASEAN, including the Philippines, must navigate through strategic policy initiatives and collaboration. While it is inevitable and essential to aim for personal economic progress through education, one must not forget that there are higher values towards which education is inclined. For Freire, to name the world and to be fully human "together" is everyone's true vocation. This particular vocation is pursued

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<sup>32</sup> Freire, *Pedagogy of the Oppressed*, 92.

<sup>33</sup> Peter McLaren, *Life in Schools: An Introduction to Critical Pedagogy in the Foundations of Education* (London: Longman, 1989), 276.

through praxis: critical, dialogical, transformative reflection and action.<sup>34</sup> In line with this, for Philippine Education 4.0 to be truly “humanistic,” it must be aligned with the mission to uplift the economic, social, and political well-being of every Filipino, especially the poor, the marginalized and the oppressed. This will be an arduous process that requires mutual efforts forged in dialogue among the key players of learning: students, teachers, administrators, government, and other stakeholders.

In this regard, Freire’s Critical Pedagogy remains timely and must be integrated into the systems of Education 4.0 in order to deter the tendency for banking education and be positively motivated by the emancipatory character of education. The pedagogy of Education 4.0 must be guided by the principles of conscientization, dialogue, and praxis.

Such critique of IR 4.0 brand of education paves the way for the dawning of a new educational landscape – Education 5.0. IR 5.0 and Education 5.0 represent the era of “Intelligence Explosion” and a shift towards personalized, lifelong learning. In the ASEAN context, particularly the Philippines, this transition poses challenges. The proliferation of AI and automation calls for human intervention in designing and controlling advanced systems. Education 5.0 emphasizes critical thinking, creativity, and emotional intelligence, preparing individuals for roles that require human qualities. If Freire’s Critical Pedagogy is successfully adopted and implemented in ASEAN Education 5.0, it will ensue in the following shifts in the educational landscape of Southeast Asia.

#### *2.4.1. A Total Shift to Student-Centered Approach*

The learner must occupy the center point of the learning process just as the oppressed in the emancipation process. This, of course, does not undermine the significant roles of the teacher, the school, and other stakeholders. This does not deny the importance of subject contents in the learning process. Rather, this means that education must first and foremost be beneficial to the development of the learner. While there is no denial that ASEAN Education 4.0 is putting the students at the core of the learning process, Education service providers have the tendency to prioritize the

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<sup>34</sup> McLaren, *Life in Schools: An Introduction to Critical Pedagogy in the Foundations of Education*, 276.

content and the curricular requirements over the relevant interests of the students. There is a tendency to give more focus to superfluous topics over essential ones.

With Freire's Critical Pedagogy at work in ASEAN Education 4.0, student-centered approach will prevail over content or teacher-based models. Student-centered approach is one that provides a learning environment where learner responsibility and activity are emphasized in contrast to the accent given to instructor control and the coverage of academic content found in much conventional, didactic teaching.<sup>35</sup> The whole of the learning process under this approach will become germane to the interests of the students. The teaching-learning activities will be maximally appropriate to the student's current knowledge and learning levels. Learning objectives will be addressed in efficient, interesting, and meaningful ways and every student will be treated fairly based on their learning style and context. The assumption in a student-centered approach, however, is that the teachers are truly masters and authorities, not authoritarians, of the subjects that they teach to be able to flexibly customize learning according to the students' varying learning needs, interests, and styles.

The key takeaway is this: it is not what the teacher wants to teach that matters. Rather, it is what the students need and aspire to learn that must be prioritized. The student-centered approach puts into practice what Freire thought of a problem-posing education – students are treated as subjects<sup>36</sup> rather than passive objects; students are given the equal right to create and recreate their knowledge about themselves, their fellows, and the world.

#### *2.4.2. Concretization of Communicative and Collaborative Learning*

With Freire's Critical Pedagogy, Education 4.0 will be able not only to actualize the twenty-first century skills of communication and collaboration but to deepen them. Teachers and students alike will be able to exercise responsibly the right to free speech and expression. They

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<sup>35</sup> "Student-Centered Learning," The Teaching Excellence in Adult Literacy (TEAL) Center, 2010, accessed on May 3, 2020, [https://lincs.ed.gov/sites/default/files/6%20\\_TEAL\\_Student-Centered.pdf](https://lincs.ed.gov/sites/default/files/6%20_TEAL_Student-Centered.pdf)

<sup>36</sup> Freire emphasized that man's ontological vocation is to be a Subject, to be more fully human.

will be able to raise pertinent questions, share their insights, and suggest relevant topics without the threat of being ostracized or ridiculed by the teacher or their fellow students. Open intercommunication will enable teachers and students to collaborate. Teachers and students, together, will be able to critically determine issues, create viable solutions, build rational decisions, and work towards productive outcomes. More importantly, they will learn the value of teamwork and cooperation.

Meanwhile, communicative, and collaborative learning work demands the exercise of responsible freedom. When one freely communicates and collaborates, one must hold oneself accountable for whatever impact one's words and actions result in. One's willingness to participate in the group must deepen one's responsibility for the welfare of the group. In pedagogical practice, this means that while reactions, comments, and suggestions are welcomed, teachers and students should see to it that these are for the benefit of the whole class. This will shun any unnecessary and self-interested remarks being made in the class. Notably, through collaboration, teachers and students will be able to listen to different perspectives and will be challenged to articulate and defend their ideas. In so doing, they will be able to appreciate a wider range of conceptual frameworks which may not be available in primary reference or textbooks. They will have the opportunity to converse with peers, present and defend ideas, exchange diverse beliefs, question other conceptual frameworks, and be actively engaged. In many instances, communicative and collaborative learning may give students the opportunity to take over the whole duration of the lessons. This, however, in Freire's perspective, must not limit the role of the teacher into mere facilitation.<sup>37</sup> Rather, the teacher must find a way to be an active presence in the conduct of the lessons.

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<sup>37</sup> See Paulo Freire & Donaldo Macedo, "A Dialogue: Culture, Language and Race," *Harvard Educational Review* 65, no. 3 (1995): 377-402. Freire rejected of the idea that teaching is limited to mere facilitation. He explains: "The true issue behind the act of facilitating remains veiled because of its ideological nature. In the end, the facilitator is renouncing his or her duty to teach-which is a dialogical duty. In truth, the teacher turned facilitator rejects the fantastic work of placing an object as a mediator between him or her and the students. That is, the facilitator fails to assume his or her role as a dialogical educator who can illustrate the object of study. As a teacher, I have the responsibility to teach, and in order to teach, I always try to facilitate. (379).

To promote active communication and collaboration, a teacher should not dominate the delivery of all the lessons in the subjects that one handles. One always divides the lessons and topics among students' groups. The group in-charge shall include the teacher in all activities as if he or she was another student. The teacher then would actively engage in question-and-answer segments of the class and interpolate if necessary. Most importantly, the teacher would provide enrichments at the end.

#### 2.4.3. *Development of Reflective and Holistic Thinking*

Reflective thinking paves the way for holistic thinking. It involves “consideration of the larger context, the meaning, and the implications of an experience or action.”<sup>38</sup> Filipino teachers and students will no longer isolate education and the whole of learning process from the larger social context. Rather, they will perceive the impacts of what they learn and what they do inside the classroom into the larger community. Moreover, they will be able to see the essential connection between their past learnings, their present undertakings, and the future they are building. With reflective and holistic thinking, both teachers and students will engage in the process of synthesis, integration and assimilation and will be able to illuminate their felt needs, sensitize their perceptions, deepen their understanding, and crystallize their will.<sup>39</sup>

#### 2.4.4. *Transformative Outcomes in OBE*

OBE in ASEAN Education 4.0 should no longer focus on “subject-related and cross-disciplinary outcomes”<sup>40</sup> which may not necessarily be reflective and relevant to the lifetime goals of one's education. Rather, it must shift to long-term, cross-curricular outcomes that reflect real life roles that learners will assume after they finish their formal education.<sup>41</sup>

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<sup>38</sup> See William T. Branch and Anuradha Paranjape, “Feedback and Reflection: Teaching Methods for Clinical Settings,” *Academic Medicine* 77, no. 12 (December 2002): 1185-1188.

<sup>39</sup> Nathaniel Cantor, *The Teaching – Learning Process* (New York: Holt, Rinehart and Winston, Inc., 1953), 300.

<sup>40</sup> See Roy Killen, “Outcomes-Based Education: Principles and Possibilities,” accessed on May 5, 2020, [http://drjj.uitm.edu.my/DRJJ/OBEFSGDec07/2-Killen\\_paper\\_good-kena\\_baca.pdf](http://drjj.uitm.edu.my/DRJJ/OBEFSGDec07/2-Killen_paper_good-kena_baca.pdf)

<sup>41</sup> William Spady, *Outcome-Based Education: Critical Issues and Answers*

As such, it will no longer focus on the quantity of outcomes produced in every lesson but on the qualitative impact of these outcomes to the daily life of students in and outside the school.

Being the fruit of critical and creative deliberations formed through dialogue, the outcomes of learning in ASEAN Education 4.0 will become transformational. This propels the idea that genuine learning leads to positive change. Having said this, students will have the orientation to apply what they learn to whatever could benefit their communities and the larger society. On the one hand, whatever transpires in the learning process should be used by teachers to improve themselves as individuals and professionals. This pathway must lead them to excellence in character and in pedagogical practice. On the other hand, what the students learn inside the classroom should help them progress personally and propel them to become workers for societal change and transformation.

### **3. Conclusion**

Many of the dominant trends of Philippine Education 4.0 today spring from the heavy influence of neoliberal ideologies. Set to meet the standards of the IR 4.0, there exists the strong tendency to pattern education after the market system as Philippine Education 4.0 is mainly concerned with producing skilled Filipino human capital in response to the labor needs in the IR 4.0. In this light, one's education tends to be solely perceived as a means towards economic development, both personally and nationally.

Commodification, privatization, and performativity are among the footprints of neoliberalism in ASEAN Education 4.0. Heavily shaped by the market structure, knowing becomes purely an economic activity. Knowledge becomes a commodity; students are treated as consumers and teachers as service providers. This commodification becomes more manifest as Filipinos face the increasing cost of education in the Philippines. For learning to be relevant in Philippine Education 4.0, students must at least have smartphone, computer, and internet connection. However, these are already luxuries for many Filipinos.

That is why despite inclusive and free education, the expensive cost still deprives many Filipinos of access to quality education.

To help defray the cost of quality Education 4.0, privatization comes as a sure aid. In Philippine Education 4.0, the role of the private sector is intensified. They have been working more closely with the government to provide better quality education fitting for the twenty-first century. Moreover, the privately-owned educational institutions which can provide competent education with very much up-to-date and better facilities are becoming more prominent. Many Filipinos prefer to enroll in these private institutions than in public schools because the former provide more promising future employability with the variety of courses they offer, which are highly relevant to the new IR 4.0. They are made to believe that they will attain more competent skills in these institutions than in public schools.

Since competency is the crux of the matter, maximized performativity becomes the norm of ASEAN Education 4.0. With the impact of the market structure on education, maximized performativity is geared towards overall customer satisfaction. In so doing, they will attract more clientele and they will be able to survive the competition among schools. There is all manifest in the growing commitment of educational institutions into their QMS, various program and institutional accreditations, ISO Certification, various meritocracies, and student performance in academic competitions, nationwide achievement tests, and professional board examinations.

In light of the foregoing, Freire's Critical Pedagogy continues to present some criticisms on the dominant trends of Philippine Education 4.0. First, it rejects the idea of commodifying knowledge since it limits the process of knowing into mere having. Instead, it is suggested that knowing is being/becoming, a constant process of becoming fully human as people continuously create and recreate their knowledge. Second, it supports the idea of maximizing academic performativity but rejects authoritarianism that may result from it. Third, it warns about personalized learning because of the excessive focus given on the "individual" and his self-vested interest. It maintains that learning is a social process, that we understand the world and become more

fully human “with” others. Fourth, it opposes the reduction of critical thinking into a mere industrial skill that allows one to make solutions and troubleshoot in the industries. Rather, it insists that critical thinking should empower a person to criticize power dynamics and oppressive social structures. It must be one that allows a person to reflect and act on a social problem with the end view of social transformation. Lastly, it rejects the idea that education has nothing to do with politics. Rather, it is argued that education cannot be isolated from social and political processes. Education is either a practice of domination and conformism or a practice of freedom.



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