

Quadrant Modelling in Teaching (QMT): Responding to RA 10533 Salient Provisions

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Abstract - *This study aimed to provide a clear direction for successful implementation of the K to 12 in the Philippines using the Quadrant Model of Teaching (QMT). The following objectives were raised in order to answer the main problem: (1) identify the learning strategies in each of the QMT levels; and (2) determine the mandated guidelines for its successful utilization based on the provisions of RA 10533. This exploratory study employed a qualitative analysis on the important provisions of RA 10533 in relation to UNESCO's Four Pillars of Learning. The salient provisions were coded numerically for easy presentation. With grounded theory as framework for critical analysis, KPUP elements were based on Hermann's Brain Quadrants and McCarthy's 4MAT method. A documentation of instructional strategies was realigned according to the expected QMT levels. The salient provisions of RA 10533 ascended the Quadrant Model of Teaching for proper K to 12 program implementation in Philippine basic education. Anchored on the four pillars of learning in the 21st century and other humanistic learning theories, the QMT levels adopted the brain-based, differentiated, integrative and collaborative theories, which are globally and locally contextualized, within the OBCIA prospects for global recognition that ensures quality instruction.*

Keywords: *OBCIA, OBE, Dialectical Design, QMT Model of Teaching OBA*

INTRODUCTION

As globalization penetrates to transcending boundaries, Philippine education can never stand in perfect isolation; but breaks its walls to be borderless. Global forces propel these boundaries in fastest seconds of digital networks, without us knowing that global positioning is already in our midst. This

necessitates the call for internationalization of education across countries, at par with global standards. With this, 'education should always be put in a strategic position and considered as a priority [1]. This position has been capsulized in the salient provisions of RA 10533, which are featured in eight codes in the study. RA 10533 requires the K to 12 teaching in the basic education program to be outcomes-based. Every educational institution requires the use of outcomes-based curriculum, instruction, and assessment (OBCIA) as an essential part of school management. Outcomes-based Education (OBE) supports this system, as an approach to access the intended competencies set in the content and performance standards, as basis for quality instruction and assessment.

OBCIA is moving on to a more dialectic approach to instruction, which is packaged in Curriculum Development System's (CDS) dialectical design. Dialectical Design (DD) refers to a curriculum framework that meets the teacher approaches to the actual desired learning outcomes. To Davis, [as cited in 2], "OBE is an approach to education in which decisions about the curriculum are driven by the exit learning outcomes that students should display at the end of the course". OBE can either be professional outcomes or course outcomes, which chart the attainment of the school's vision, mission, goals and objectives (VMGOs) to be trickled down in classroom experiences, through the use of the Quadrant Modelling of Teaching (QMT).

The QMT makes use of KPUP, that is, (Knowledge, Process, Understanding and Reflections, Products and Performances) system, which realigns learning outcomes with four levels of instruction and assessment, for better K to 12 program implementation in the Philippines. This model presupposes the need for differentiated learning activities that become consistent with Hermann's four

brain quadrants and McCarthy's MAT method, as quoted Huitt [3]. Both of these support the QMT implementation. Tomlinson and Kalbfleisch rejoin, as quoted by Subban [4] that brain research suggests three broad and related concepts such as: safe learning environment, apt learning challenges, and significant associations to construct meanings, which necessitate a differentiated approach. In QMT, learning activities are adopted, primarily based on Differentiated Instruction (DI) theory by Tomlinson [5]. In DI, Tomlinson emphasizes the use of tiered learning activities, which accommodate Gardner's Multiple Intelligences [6], and other theories responsive to learner diversity.

Learning activities on differentiated instruction are also connected to nine multiple intelligences [7], with varied learning activities and assessments, evident in an Outcomes-based Assessment (OBA). OBA refers to the differentiation of assessment tools, which are based on the desired learning objectives and be matched with appropriate instructional strategies. The QMT is also anchored primarily on the UNESCO's Four Pillars of Learning in the 21st century [8]. While the K to 12 remains experimental; it opens to many changes and innovations among academics, in order to offer their curricular innovations for better implementation. Hence, this exploratory study is intentionally conducted, as one of its options to ensure instructional quality.

The K-12 education in the US is perceived as an assembly line, where students are put on a conveyor belt in kindergarten and marched down the same path at the same speed [9]. Vis-à-vis, the K to 12 in the Philippines has brought a similar resemblance, i.e. experimental until 2024, when everything in the curriculum will be fully in place for the first batch of graduates for Grade 12. Both these curricula in the US and in the Philippines recognize the role of teachers as agents in the so-called 'factory lab', catering the students' whole brain capabilities.

Caguimbal et al. [2] concludes educational and professional achievement of teachers is the greatest factor that affects the implementation of OBE. Teachers can make instruction to be more authentic in a lifelong process. Their roles are significant in the learning process, which need to be promoted in context with school administration and supervision. Tomlinson elaborates that leaders encourage teachers to apply differentiation with flexibility, creativity, and choice; and provide them with high-quality

professional development as well as time to collaborate, plan, and implement differentiation [10].

As OBE supports the attainment of learning outcomes coherent through instructional differentiation, Lawrence-Brown [11] confirms that 'differentiated instruction can enable students with a wide range of abilities—from gifted students to those with mild or even severe disabilities—to receive an appropriate education in inclusive classrooms' [12]. This calls teachers to be familiar about diverse learning environment. Creating opportunities for all students, by enriching the classroom through multiple techniques and assessments, develops students and brings out their strengths in Subban [4].

OBJECTIVES OF THE STUDY

This study aimed to provide a clear direction for successful implementation of the K to 12 in the Philippines using the QMT. The following objectives were raised in order to answer the main problem: identify the learning strategies in each of the QMT levels; and determine the mandated guidelines for its successful utilization based on the provisions of RA 10533.

METHODS AND MATERIALS

This exploratory study employed a qualitative analysis on the important provisions of RA 10533 in relation to UNESCO's Four Pillars of Learning. The salient provisions were coded numerically for easy presentation. With grounded theory as framework for critical analysis, QMT elements were based on Hermann's Brain Quadrants [13], and McCarthy's 4MAT method. A documentation of instructional strategies was realigned according to the expected QMT levels.

RESULTS AND DISCUSSION

QMT Levels

The QMT follows important levels from RA 10533, sec. 5.g [14]. **Quadrant A** is on Knowledge as the first level starts the class with learning activities like: *word search, songs, stories, news, poems, puzzles, videos, quotations, and other forms of graphic organizers*; provide learners to grapple on facts, concepts, theories, principles, definitions, and other avenues to generate information. The teacher uses what *questions...* in classroom interaction. **Quadrant**

B is on Process is the second level, where the teacher progresses what the learners know and develop the target skills like: *cognitive, fine motor, gross motor, and appreciation*. These skills can be developed using various means of scaffolding. In order to obtain a higher level of success, the teacher uses **how questions**... in instructional engagement to generate a successful learning process. In the light of these features, Caguimbal, et al [2] recommends enhancing development of students' knowledge and skills for successful OBE implementation. **Quadrant C** is on Understanding and Reflections, as the third level, moves teacher to collaborative discussions in *concept development, making generalizations, inferences, and reflections, problem-solving, generating insights and transcendence*. The teacher uses **what if questions**... in order to spawn various interpretations of information, reality and wonder, through *think-pair-share, tiered activities, role playing, panel discussion, symposium, debate, forum, talk show, caucus, and colloquium*. **Quadrant D** is on Products or Performances, as the fourth level, accentuates on learners' actual products or performances in *brochure-making, writing letters, poems, scripts, and compositions, organizing learning, scrapbook-making, conducting research, staging a play, organizing an exhibit, organizing a symposium, joining a tree-planting campaign and other community work that measure authentic performances*. In order to complete this level, the teacher uses **why questions**... to create learning evidences, essential in the determination of the desired learning outcomes such as artistic creations or scientific inventions.

QMT Utilization Guidelines

The signing of the Republic Act 10533 in May 2013, under Sec. 5, deputizes DepEd to adhere the standards and principles in developing the enhanced basic education curriculum, which provisions are coded sequentially.

Code 1 Learner-centeredness

The QMT engages learners in varied learning tasks, which are inclusive, and learning activities are focused on the development in four brain quadrants: QA fixes the generation of knowledge, QB hits skills development, QC targets understanding and reflections, and QD dovetails products and

performances. The model is seamless and developmentally appropriate.

Code 2 Relevance and Responsiveness

The QMT designs learning activities on practical examples, which are relevant and responsive to varying needs of the individual and the society. In QA, learners are already bombarded with facts and concepts, which are concrete, arranged into correct and fragmented bits of information, as basis for rational thinking. In QB, they are exposed to organize sequential and detailed lesson presentations, as basis for procedural thinking. Both QA (level 1) and QB (level 2) presentations are made convergent. In QC, they are exposed to collaborative thinking. In QD, they are exposed to intuitive thinking. Both QC (level 3) and QD (level 4) are made divergent. In teaching a lesson in Philippine Geography, Teacher X has selected a lesson on the country's 17 political regions. Designing the activities according to four quadrants, he provides the following activities: (on level 1) an incomplete flow chart is given to each student, in order to fill out the required provinces, tourist spots and products in each region; (on level 2) each student is challenged to make those information generated in level 1 and be assimilated through their own unique ways of remembering like the use of mnemonics, chaining, and chunking; (on level 3) the students are exposed to cooperative learning strategies where they are expected to pick at least 3 regions in Luzon, Visayas, and Mindanao that they like and are expected to share their reflections in terms of the resources and income of the regions they selected; and (on Level 4) they are challenged to create a talk show, panel discussion or debate regarding the issues and problems in each selected region.

Code 3 Cultural Integration

One lesson for Grade 7 Social Studies is the "Roles and Contributions of Asian Women in History", where status and rights of women are embedded. In order to be culture-sensitive, the teacher who is using the QMT can plan learning activities according to local context, "Pagsasayawit", a singing-dance activity in a pick-out stanza of the three selected country songs. After the singing of these songs, questions are raised in order to generate concepts on the characteristics and symbolisms of Filipina depicting the local culture (on Level 1). In song no. 1 "Sitsiritsit", is locally coined as (a whisper

to chitchat), reveals the symbolism of a typical woman in the Philippine countryside, who is compared like “alibangbang” (a butterfly), “salaginto”, (a bug), “salagubang” (a beetle), and “tandang” (a rooster) in terms of her animated, vivacious and friendly gestures in public places. While others give a negative connotation of a woman, who is coined as flirtatious, provocative and daring like a rooster, the rest see it as a form of gender assertiveness imbedded in the woman’s psyche. In song no. 2 “Rosas Pandan”, a concoction of “rosas” (roses) and “pandan” (scientifically known as “*Pandanus odoratissimus L*) is a metaphor to a lovely town lass, who wants to socialize (*makig-uban-uban*) in an urban celebration (*kalingawan*). This stanza depicts the sociable trait of a typical Filipina that holds no boundaries in economic and social status. In song no. 3 “Paru-parongBukid”, a mountain butterfly, describes a woman who is conservative, as insinuated in a long skirt (*isangbarang tapis*) and a heavy fabric (*isangdangkalangmanggas*). In the outset, the learners are expected to comment on the symbolisms that mirror a woman in Philippine society. As a follow up, they are asked to react on the popular Cebuano air of patriarchy “*Babayengbuhatkaba?*” (Are you just made a woman?). The female members of the class responded that they are insulted, demeaned or belittled (on level 2). Once, the class is divided into three groups. Each group is given any of the stanzas selected in the three local songs presented; members of the group interpret it with feelings, and questions are raised in order to give varied reflections on the difference of woman’s roles before and now (on level 3). The same group is challenged to deconstruct each of the three stanzas of the song including its title that reflects a modern concept of an empowered woman (on level 4).

Code 4 Globally Contextualized

The Battle at Waterloo, a selected lesson in World History, is contextualized; learners are expected to read the text and are asked to relate it with a given checklist, where they are expected to prioritize objects vital in the battle’s success, in order to ascertain varied ideas, attitudes, and values. During the group discussion, each team member defends his or her choices. Once completed, the team leader reports this to the entire class for interaction. Each one in the class is expected to react on the team presentation. The teacher notes the values revealed in the given

responses. The actual text is deconstructed through the given context. To wit, Johnson’s recommendations rejoin Hermann’s brain quadrants, and his intrapersonal strategies can fall under QB, implies to cross the QA domain and his cooperative learning strategies and values clarifications strategies are found useful in QC, which crosses the QD domain. Živić complements Johnson’s [15], when students’ learning outcomes manifest the clearly expressed aptitudes, i.e., the expected knowledge and necessary adroitness and capabilities converge. Once the crossing domains of the four quadrants happen, a sound QMT is succeeded. The four quadrants are grounded with 12 philosophies in education that the learner fully understands about their ‘being’ and see the real self as a centerpiece for self-concept to fully understand their ‘becoming’, in order to reach out others in building a peaceful community. Art of questioning and teaching strategies are illustrated in order to create a difference in teaching. To support the QMT, Johnson [9] recommends the use of meditation, guided imagery, power writing, and mythology as techniques for intrapersonal (convergent) learning and cooperative group activities, values clarification, moral dilemmas, and reading literature for interpersonal (divergent) learning. With the use of this model, the 21st century skills of critical thinking for QA, communication for QB, collaboration for QC, and creativity for QD with integrity and grit can be successfully addressed. All these skills are needed in order to prepare Filipino children to achieve K to 12 exit points in employment, entrepreneurship, middle level skills development, and higher education.

Code 6 Whole-brain Approaches

The law recommends teachers to use learner-centered pedagogical approaches such as: inquiry for QA learners, the process and constructivist for QB learners, collaborative and reflective for QC learners, and integrative for QD learners. In inquiry teaching, the learners are guided to discover new knowledge on tasks that they find interesting. In Economics, learners engage in a survey of prices of different commodities in the market, which they construct meanings on the experiences they have discovered. One possible meaning they give is that buyers prefer to buy expensive goods because of their belief toward quality, while some prefer to buy cheaper goods because these are affordable. For collaborative and reflective approaches, they group together in order to

decide which products to sell in the market, once given a sufficient capital to run a business. They make reflections for product promotions that capture consumers' taste, without necessarily being competitive in the business. In integrative approach, they are guided on product creation and modification using diversification, through creativity and innovation, research, and feasibility studies.

Code 7 Spiral Progression

The QMT starts with knowledge and ends with a product. Knowledge includes the substantive content of the curriculum, the facts that students acquire in different types like: descriptive, procedural, episodic, and strategic [16]. They defined descriptive knowledge as a semantic that describes information to be commonly thought as concepts and facts, and includes verbal descriptions on places, objects, persons and events. On procedural knowledge, they describe it as performance on specific task. This comprises knowledge on certain process of production like: ways on solving a problem and strategies for product development. On episodic knowledge, they refer to anecdotal, which pertains to information with relevant events. This includes knowledge on anniversaries, tragic historical accounts, significant milestones, business trends, volatile currency rates and unpredictable market forecasts. On strategic knowledge, they refer to conditional or restrictive, which includes knowledge on most important places, knowledge on most important events, knowledge on most important objects and knowledge on most important people. These types of knowledge can be enhanced through practice drills in order to achieve mastery, which Caguimbal, et al [2] have identified as second in rank for OBE's effective utilization.

Process covers the development of perceptive skills, which are multi-sensorial, and the cognitive operations that students perform on facts and information for understanding like: Piaget's conservation, decentration, reversibility, classification, seriation, transitivity, and spatial reasoning [17]. On conservation, he refers to the cognitive operation, which involves the ability to understand when the amount of something remains constant, across two or more situations, despite the appearance of something, i.e. changing across contexts. Changes in economic system and market models do not affect consumer behavior – demand for commodities and services remain

constant. On decentration, here refers to the ability to pay attention to multiple attributes of an object or situation rather than being locked to a single attribute. People have different views about taxes; as a burden of their personal income, a form of government policies, a duty and an obligation, a mechanism to strengthen the economy, and a multiplier effect to public finance. These views prove that decentration is a multiple mental tasking skill. On reversibility, he refers to the ability to recognize that numbers or objects can be changed and returned to their original condition. In the circular flow of goods and services, factor inputs like land, labor and capital, once processed in the firms, are transformed into factor outputs to be offered in the market as capital goods – that moves back to the same factor inputs. On classification, he refers to the ability to simultaneously sort things into general and more specific groups, using different types of comparisons. Learners are provided with an activity to classify and give examples to direct, indirect, progressive, regressive and proportional taxes. On seriation, he refers to the ability to put things or sort objects in order: according to size, shape, or any other characteristic based on quantity or magnitude according to periods, events, sets, and other forms of sequence. Historically, economic development can be sequenced according to stages: from hunting and gathering, farming and horticulture, industry and manufacturing, technology and telecommunications to service and knowledge economy. On spatial reasoning, he refers to the inductive and deductive ability to understand and reason (to draw conclusions) using cues in the environment that conveys information about distance or direction. With the use of inductive reasoning (Bruner in Johnson[9]), the learners are drawn to make inferences from observations in order to make a generalization. In the Philippine economic context, reduction of prices in basic commodities and gasoline leads to the reduction of fare for public utility. With all these observations, the learners have yielded this generalization that "Philippine economy is getting stable". With the use of deductive reasoning [9], they are involved using a generalized principle in order to predict the outcome of an event. The Aquino administration tagline's "Angat Pa Pinas!" (Enhance More Philippines!), a general principle to predict a better quality of life to support for everyone Caguimbal, et al [2], who have identified that

demonstrations are found to be second in rank with drills.

Understanding and reflections cover the gist of Understanding by Design (UbD) [18]. Both of them introduce understanding as enduring big ideas, principles, and generalizations, which may be assessed using its 6 facets: to explain, interpret, apply, perceive, empathize and intuit. On explanation, both refer it to support and justify accounts on phenomena, facts and data. Given the data on the rate of unemployment in the Philippines, the learners can explain the different factors according to frictional, seasonal, cyclical and structural types of unemployment. On interpretation, both refer it as means of telling meaningful stories; offering apt translations; providing revealing historical or personal dimensions to ideas and events; making it personal or accessible through images, anecdotes, analogies and models. Showing the graph on shifting patterns of demand and supply, the learners are made to interpret the shifting movements, whether these create an increase or a decrease, and they are also expected to provide factors affecting the shifts. On application, both agree it as means of providing an effective use and adaptation of knowledge in diverse contexts. Using knowledge of consumer behavior and elasticity of demand and supply, the learners are asked to choose what business they like to engage in the market. On perspectives, both agree it as means of seeing and hearing points of view through critical eyes. Imbalance distribution of national income can be perceived by some students as corruption among some of the government officials or mismanagement of the country's financial resources. On empathy, both refer it as means of valuing in what others might find odd; perceiving sensitively on the basis of prior direct experience. Letting the learners feel being one of the poor, who lives in the busy streets of Metro Manila, can indirectly experience the extent of poverty in the metropolis. On intuition, both refer it as means of recognizing the personal style, prejudices, projections, and habits of mind that neither shape nor impede understanding. This is otherwise known as self-knowledge. With the stable Philippine peso, the learners are challenged to predict the country's GNP for the next quarter. Caguimbal, et al [2] concludes that group work is the most essential in OBE.

Products and performances include the real-life application of understanding as evidenced by the

student's performance of authentic tasks in various theories: lateral and vertical transfer of learning by Salomon & Perkins, identical elements of Thorndike, Woodsworth, and Byrnes, transposition by Kohler and formal discipline of Thorndike, Woodsworth, and Haskel in Inocian [19]. Lateral Transfer occurs when learners perform a novel task about the same level in various contexts, producing a desired output in most creative and reflective way. Learners are exposed to the actual integration process where they are made to sing a song entitled "Price Tag". After singing, they are made to analyze concepts entrenched in the song. These ideas are connected to the determination of equilibrium price, ceiling price and floor price in graphical presentation. Then, they are made to reflect on this question 'if given 5,000 pesos by your mother, what goods you intend to buy'. Vertical Transfer occurs when learners study simple to more advance skills in a specific context, i.e. producing a desired output in most critical manner. They analyze the factors that affect the production of goods and vertically connected to a higher application of the law of diminishing returns and to factors of marginal efficiency of investments (MEIs) or the returns of investment (ROI). In the outset, Caguimbal, et.al [2], drills, demonstration and group work project are identified that may project inference for OBE' success.

Code 8 Locally Contextualized

The lessons on consumer and capital goods in Economics can be locally presented through an indigenous context. The teacher starts by introducing Carcar city. Questions are raised in order to generate the expected concepts such as: 'what you usually buy when you pass by Carcar city?', 'what are its products?', 'what essential elements are needed in the production of "chicharon" (crunchy fried pork meat) and "bocarillos" (sweetened, colored and baked young coco shreds)?' The learners are made to identify these as consumer goods. They are asked to define, then, consumer goods and to differentiate this with capital goods. Of the two consumer goods identified, they are asked to analyze which of the two can be also used as capital goods. In a social context, "bocarillos" can be used as deserts in local dining; the "chicharon" can be used for a day-break snack paired with soda, which ended their utilities as paid consumer goods. However, these can also be used as capital goods to produce other consumable goods with

the use of production equipment like cauldron and others; the “chicharon” can be pounded to have a mix mongo sated-soup, while the “bocarillos” can be used as toppings for other recipes. The products are both indigenous because the raw ingredients of the “bocarillos” are taken from tropical young coco fruits and sugarcane, while the “chicharon” are made of fresh pork meat, which are toasted through the indigenous process. The “chicharon” and the “bocarillos” business can be used as case studies in terms of higher discussion on factor inputs and factor outputs in computing local revenues and costs of production. Relying on localization and contextualization develops a nationalistic consciousness and sense of pride.

Quadrant Model of Teaching

All the teaching approaches mentioned in RA 10533 reflect the participatory model of instruction, which are anchored on learner-centered philosophies of pragmatism (reconstructionism and progressivism) and existentialism (humanism and constructivism) [20]. With these philosophies, learning is associated in the construction of meanings from previous experiences or transformation for practical reasons toward personal conviction for truth [21]. Figure 1 exemplifies the needed instructional strategies for an effective Quadrant Modelling.

Table 1. Inocian’s Quadrant Model of Teaching (2015)

Quadrant Modelling	Foci of Interest	Guide Questions	Teaching Approaches	Teaching Methods	Teaching Techniques
Quadrant A is inspired with idealism, essentialism and perennialism.	BEING to see the real SELF (convergent) Personal Development through the use of critical thinking skills	The use of the WHAT questions that focuses on generative and analytical learning	didactic, synoptic and other structured approaches of teaching	The time-tested methods of lecture, expository, deductive and unit.	outlining, graph analysis, photo analysis, tiered activities, either-or-forced choice, rank order, needs analysis, tabular analysis, crossword puzzle, program instruction
Quadrant B is inspired with realism, positivism and behaviorism philosophies.	BEING to see the real SELF (convergent) Personal Development through communication and survival skills	The use of the HOW questions that focuses on procedural learning.	Inquiry, process and hands-on approaches of teaching	The time-tested methods of demonstration, laboratory and individualized instruction.	chunking, chaining, mnemonics, sequencing events, noting details, retrieving information, classifying and categorizing, time-lining and map- sketching, scenario-clipping, comic-strip-making
Quadrant C is inspired with existentialism, constructivism and humanism.	BECOMING to be with OTHERS (divergent) Social Development through social and collaboration skills	The use of the WHAT IF and the WHO questions that focuses on interactive learning.	dialectical, participatory, reflective, collaborative and interactive approaches of teaching	The collaborative methods of discussion, inductive, type study, direct instruction and indirect instruction	simulation, pantomime, role playing, socio-drama, talk-show, forum, panel discussion, buzz session, brain-storming, think-pair-share, focused-group discussion, colloquium, caucus, debate, partying, and dialoging
Quadrant D is inspired with pragmatism, progressivism and reconstructionism.	BECOMING to be with OTHERS (divergent) Social Development through the use of creative thinking skills	The use of the WHY questions that focuses on creative and inventive learning.	constructivist, scientific, and creative approaches of teaching	The hands-on methods of research, project and experimentation.	synectics like (metaphoring, paradoxing, configuring), serendipity walk, devil’s advocate, literature circles, interviews, intuiting and reflecting, case study, creating a program, heuristics and other forms of visual scaffolding

CONCLUSION AND RECOMMENDATION

The salient provisions of RA 10533 ascended the Quadrant Model of Teaching for proper K to 12 program implementation in Philippine basic education. Anchored on the four pillars of learning in the 21st century and other humanistic learning theories, the QMT levels adopted the brain-based, differentiated, integrative and collaborative theories, which are globally and locally contextualized, within the OBCIA prospects for global recognition that ensures quality instruction. With Quadrant Modelling as one of the avenues for effective instruction, this may open doors for education leaders and policy-makers to institutionalize curriculum reforms for effective outcomes-based teaching and learning in all courses, from basic education to higher tertiary education in the Philippines.

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