

## 21<sup>st</sup> Century Skills in Teaching Economics: K to 12 Spiral Instructional Modelling (SIM) in the Philippines

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**Abstract** - *This study explored the integration of the 21<sup>st</sup> century skills in teaching economics for social studies, Grade 10. It sought to answer the following objectives: (1) extrapolate insights, updates, retrospects and prospects in terms of content, instruction, and assessment features of the K to 12 curriculum in Economics, (2) describe the sequence of integration of 21<sup>st</sup> century skills, differentiated instruction, contextualization and localization in the actual teaching demonstration, and (4) interpolate the appropriate instructional modelling for effective economics teaching. A case analysis of 65 cluster members in Section P, representing the 780 training participants of the K to 12 Grade 10 Mass Training for social studies teachers, in May 9-13, 2015 in Cebu City, was used. Teaching demonstrations and evaluation instruments generated the needed information. Data are treated using inductive analysis in order to generate paradoxical themes through metaphors. During the actual teaching demonstrations, four process observers were selected among the four teams to provide demonstration feedback. The integration of the 21<sup>st</sup> century skills in teaching economics was aptly carried out in the areas of critical thinking, communication, and collaboration. Teacher demonstrators were aware of its integration; however, the integration of creativity as one of the four skills is found insufficient, which needed utmost attention with full academic administrative support.*

**Keywords:** *21<sup>st</sup> Century Skills, life skills, instructional modelling, learning quadrants*

### INTRODUCTION

*“One looks back with appreciation to the brilliant teachers, but with gratitude to those who touched our human feelings. The curriculum is so much necessary raw material, but warmth is the vital element for the*

*growing plant and for the soul of the child.” -Carl Gustav Jung*

With Jung’s quotes, the curriculum becomes the heart of the school, that without it, the school can never be called one with such name. It is the curriculum that propels the functionality of the school in the achievement of its vision, with the teacher as a trailblazer. As global education embarks new challenges in more than two decades since the introduction of the Four Pillars of Learning in 1996, the school has been challenged with more developments, recognizing psychological theories that impact curriculum transformation in learning. Howard Gardner’s Multiple Intelligences, Daniel Goleman’s Emotional Intelligence, Ned Hermann’s Brain Quadrants, Bernice McCarthy’s 4MAT system, Carol Ann Tomlinson’s Differentiated Instruction, and among others assert developmental milestones, with constructivist classroom engagement that supports the development of 21<sup>st</sup> century skills from a hardcore, content-oriented tradition of teaching.

According to Voogt and Roblin [1], “the 21<sup>st</sup> century skills are lifelong learning competences needed in the struggle for personal life.” When the Philippines embraces the ideals of K to 12 in 2012, a paradigm shift in the curriculum catapults major changes in Philippine basic education landscape. The curriculum has been described as spiral, inspired with localization and contextualization provisions in instructional process [2]. Within it, the curriculum for Social Studies in High School is designed to be taught in interdisciplinary, multidisciplinary, integrative, investigative, thematic, chronological, conceptual, and content-oriented [3], with emphasis on the development of the 21<sup>st</sup> century skills in 4Cs such as: critical thinking, communication, collaboration, and creativity.

Pithers [4] see critical thinking skills as increasingly important in meeting the complex

demands of the workplace. To complement this view, Johnson asserts that critical thinking skills converge on a single thought or entity [5]. He further exemplifies that one must organize, compare and contrast, analyze, infer, support a statement, evaluate information, make generalizations and decisions. All of which becomes a thinking skill if these are broken into parts and taught explicitly. Creative thinking skills utilize divergent thinking that wanders from a single point, where one must become fluent, flexible, and original, and to elaborate or to generate a statement [5]. Both critical and creative thinking are cognitive processes used in generating ideas (extrapolation), integrating ideas (interpolation), or seeing things in new ways (metacognition) [5].

Having been observing the biases of many teachers toward traditional teaching that focuses on knowledge acquisition and skills demonstration; a less emphasis on collaboration and creative inventions is obviously observed. As a regional trainer for K to 12 training in social studies, for four years already, since its beginning in 2012, a fervent wish to see the actual integration of the 21<sup>st</sup> century skills, for total development of the individual, has been anticipated. Thus, this study is conducted, in order to provide a framework for realignment of learning outcomes in a spiral instructional modelling in teaching. Jacques Delors' Four Pillars of Learning for 21<sup>st</sup> century education sets the framework of the study. This framework corresponds to Bernice Mc Carthy's 4MAT model of teaching, which addresses the learners' four learning modalities as analytic, common sense, dynamic, and imaginative. These learning modalities presuppose the development of the 21<sup>st</sup> century skills, which the K to 12 in the Philippines has identified, which are enduring life skills, congruent to Hermann's Four Learning Quadrants.

Life skills refer to those psychosocial and interpersonal competencies generally considered important to survive the challenges of day-to-day living [6]. Bonotan[6] further enumerates the following skills such as: communication and interpersonal, critical thinking, coping and self-management skills. These skills are realigned with the four learning quadrants like: the use of critical thinking and decision-making skills in QA, the use of communication and self-management skills in QB, the use of interpersonal skills in QC, and the use of creative thinking like creation and advocacy in QD. In order to develop the students' critical thinking skills in Economics, Paul and Elder offer eight standards, eight

elements, and eight intellectual skills [4]. Paul and Elder accentuate on the significance of critical thinking using the following standards such as: clarity – clearness of thought process, accuracy – correctness of thinking, precision – exactness of projection, relevance – practical thinking, depth – transcendent thinking, breadth – extensive knowledge, logic – rational judgment, and fairness – objective judgement. These aforementioned standards are aided with the use of eight elements such as: purpose – resolute belief, question – inquiring nature, information – consciousness on facts, concepts – meaning making, assumptions – intuiting possibilities, inferences – conjecture based on observations and prior knowledge, point of view – perceptual understanding of reality, and implications – nuances of interpretations. If the 8 standards provide the framework for critical thinking, then the 8 elements nurture an environment in fixing its status to ascertain a higher-order-thinking. Higher-order-thinking skills or HOTS can be well supported with the use of eight intellectual skills such as: integrity – having indisputable honesty, humility – exhibiting modest intentions, confidence in reason – defending a standpoint, perseverance – determined character, fair-mindedness – manifesting equal and equitable treatment, courage – showing audacious cause, empathy – introspecting the person's feelings, and autonomy – having a degree of independence.

Observing a seamless process, when students have successfully hurdled QA and QB skills, they are ready to achieve QC attributes like fairness (impartiality) and relevance (significance). The students need to hatch from their comfort zones and be ready to collaborate with others. They listen to others' perspectives and seek for implications (suggestions) in order to promote unity in the spirit of humility and empathy. When students are already equipped with all the attributes in QA, QB and QC, then they are now ready to become more innovative to produce any product of invention and creation. Behaving like an artist or a scientist, they need to be exposed to a lot of assumptions (theories) and inferences (extrapolations) in QD in order to be systematic. By then, they can contribute to knowledge generation and dissemination, and become more functional asset in the global society.

As leaned on Figure 1, the implementation of the K to 12 in the Philippines has observed the use of 21<sup>st</sup> century skills.



Figure 1 DepEd's K to 12 Conceptual Framework and exit points, 2012

For instance, the QA's use of critical thinking as a foundation of all skills is addressed in the information, media, and technology skills in response to the education's Learning to Know Pillar. The QB's use of communication skills is addressed through the use of effective communication in both oral and written discourses in response to education's Learning to Do Pillar. The QC's use of collaboration skills are addressed in life and career as basis to build harmonious relationship in education's Learning to Live Together Pillar. The QD's use of creativity enhances learning and innovation skills in response to education's Learning to Be Pillar. With all these quadrants are addressed by the K to 12, the graduates' chosen tracks facilitate reaching the exit points for employment, entrepreneurship, middle level skills development, and higher education with different academic tracks.

Achieving these four exit points becomes impossible without the study of Economics in Junior High School. Almost everything we do in life involves economics because it deals with the management of scarce resources [7], for the satisfaction of our unlimited needs and wants. Economics, in high school, covers four quarters [8]. The first quarter focuses on Economics' Basic Concepts and Bases for Wise Utilization of Resources for Development. These lessons are arranged in a spiral presentation in subsequent units of work. The second quarter dovetails on Microeconomics that directs students to understand the interaction of demand and supply, price determination, and market structures. The third quarter refers to Macroeconomics, which provides students' exposure to circular flow of goods and services, GNP, GDP, relationship of income, savings and consumption, inflation, fiscal policy, and monetary policy. The fourth quarter is Sectors of the

Economy, which orients students on national development, the sectors on agriculture, industry, service and other informal sectors. This culminates the discussion on foreign trade.

## OBJECTIVES OF THE STUDY

This study explores the integration of the 21<sup>st</sup> century skills in teaching economics for Social Studies Grade 10. It seeks to answer the following objectives: to extrapolate insights, updates, retrospects and prospects in terms of content, instruction, and assessment features of the K to 12 curriculum in Economics; to describe the sequence of integration of 21<sup>st</sup> century skills, differentiated instruction, contextualization and localization in the actual teaching demonstration; and to interpolate the appropriate instructional modelling for effective economics teaching.

## METHODS

### Research Design

This is an exploratory study using case analysis of Section P, one of the 12 clusters of 780 training participants during the K to 12 Mass Training, for Social Studies Grade 10 Teachers, held in May 9-13, 2015 at the University of San Jose Recoletos, Cebu City, Philippines. Data are treated using inductive analysis in order to create order by organizing a certain form of curriculum realignment [9], according to quadrants. Paradoxical themes are generated to provide better implication on the discussion through metaphors. Three demonstrators were given a choice to choose any lesson found in the list of quarter lessons assigned to each of the respective teams. During the actual teaching demonstrations, four process observers within the four teams are requested to provide feedbacks for improvement.

## RESULTS AND DISCUSSION

Table 1 reveals the participants' reflections in terms of knowledge, emotions, and actions. With these reflections paradoxical themes are generated. Firstly, the *K to 12 is like a bus with excess passengers that can hardly run fast on the road*. This means that K to 12 has taken off, the teachers are mostly aware of it; but it takes a financial burden for most parents to have an extension for two additional years and the number of class size in the classroom due to lack of physical infrastructures like: school buildings, laboratories, and equipment.

Table 1 Participants' Insights

Responsible Teams	Reflections On	Reflections In	Reflections About
Team Lapu-lapu	<ul style="list-style-type: none"> <li>• Learner-centered</li> <li>• Multi-tasking</li> <li>• Collaborative learning</li> <li>• Challenging program</li> </ul>	<ul style="list-style-type: none"> <li>• Burdened for additional finances</li> <li>• Expensive</li> <li>• Not ready</li> </ul>	<ul style="list-style-type: none"> <li>• Cater the needs of the learners</li> <li>• Differentiated instruction and the use of innovative strategies</li> </ul>
Team Tamblot	<ul style="list-style-type: none"> <li>• Child-oriented</li> <li>• Globally competitive</li> <li>• Answer for the search for quality education</li> <li>• 21<sup>st</sup> century skills</li> </ul>	<ul style="list-style-type: none"> <li>• Excited</li> <li>• Happy</li> <li>• Challenged</li> <li>• Committed</li> <li>• Difficult to achieve</li> </ul>	<ul style="list-style-type: none"> <li>• Enhance skills in attending a seminars and workshops</li> <li>• Cooperate and support the program</li> </ul>
Team Sikatuna	<ul style="list-style-type: none"> <li>• Produce globally competitive graduates</li> <li>• Level up the educational systems of the world.</li> <li>• It is an additional burden.</li> <li>• Parents are complaining.</li> </ul>	<ul style="list-style-type: none"> <li>• Happy because theeconomy will be booming</li> <li>• More money will be coming in</li> </ul>	<ul style="list-style-type: none"> <li>• Implement K to 12 with a heart</li> <li>• Increase more compensation of the teacher.</li> </ul>
Team Leon Kilat	<ul style="list-style-type: none"> <li>• Answer the EFA goals</li> <li>• Answer the need of the society</li> </ul>	<ul style="list-style-type: none"> <li>• Positive feeling</li> <li>• Interested</li> <li>• Excited</li> <li>• Challenging</li> <li>• Doubtful for possible downfall of the program</li> </ul>	<ul style="list-style-type: none"> <li>• Need for varied materials</li> <li>• Strict implementation of the program</li> <li>• Impart skills with a passion</li> <li>• Apply varied strategies</li> <li>• Be resourceful</li> <li>• Attend trainings and workshops and apply them</li> </ul>

Source: 2015 Central Visayas K to 12 Mass Training Output for Day 1, Session 1

Secondly, the *K to 12 is both boon and bane*. The participants have shown great excitement and commitment in the implementation of the program despite fear and ambivalence crucial for the next political leaders whether or not to continue granting popular support with the incumbent administration.

Thirdly, the participants see the *K to 12 as a rainbow in midnight summer*. They are hopeful for its implementation and willing to cooperate despite the ambivalence of some. This represents their healthy outlook toward the curriculum.

Table 3 K to 12 Program Updates

Responsible Teams	K to 12 Program Updates	
	Retrospects	Prospects
Team Lapu-lapu	<ul style="list-style-type: none"> <li>• New grading system</li> </ul>	<ul style="list-style-type: none"> <li>• Updating of teachers</li> </ul>
Team Tamblot	<ul style="list-style-type: none"> <li>• New grading system</li> </ul>	<ul style="list-style-type: none"> <li>• How to compute the grades</li> </ul>
Team Sikatuna	<ul style="list-style-type: none"> <li>• A New system</li> </ul>	<ul style="list-style-type: none"> <li>• Support the K to 12</li> </ul>
Team Leon Kilat	<ul style="list-style-type: none"> <li>• A burden because of additional two years in basic education</li> </ul>	<ul style="list-style-type: none"> <li>• Updating of teachers</li> </ul>

Source: 2015 Central Visayas K to 12 Mass Training Output for Day 1, Session 2

As regards to program updates (see Table 3), the participants perceived *K to 12 as a budding sunflower in a scorching summer breeze*. They are fully aware about RA 10533 (K to 12 Law) and DepEd Order, No. 8, s. 2015 [10]. But, few participants see the new curriculum as a burden in terms of time and financial resources. The prospect of learning how to compute the grades is embodied in the DepEd Order No. 8 with clear instructions. In terms of teacher updating, the participants are responsible to echo what they have learned during the training, to other teachers waiting in designated work stations, before the beginning of classes.

In terms of the learning areas in Grade 10 (see Table 4), the participants see *seeds that sprout in the ground promising to provide a bountiful harvest*. They know that Grade 10 is Economics, but they still need to know its contents, the learning modules, updates in the computation of the national income.

They also need updates on the new strategies in teaching. All these expectations are provided with answers during the plenary and break-out sessions. Regarding the teaching strategies, intensification of the KPUP Model of Teaching has been exemplified in the workshop.

*Butterfly that hatches from the cocoon* refers to the participants' quest for the latest instructional strategies. They want to engage in learning activities that develop 21<sup>st</sup> century learners. This quest is essential to what De Leon calls as critical pedagogy in teaching social studies [11]. In critical pedagogy, De Leon explains that teachers need to engage in a paradigmatic shift from their fossilized knowledge to a more radical or orthodox style of teaching that fits 21<sup>st</sup> century teaching, like ethno-biography, direct action and sabotage with students as primary actors in the learning process.

Table 4 Grade 10 Learning Area Contents

Responsible Teams	Retrospects	Prospects
Team Lapu-lapu	<ul style="list-style-type: none"> <li>Economics</li> </ul>	<ul style="list-style-type: none"> <li>Need to have the scope &amp; sequence of Grade 10 (Economics)</li> </ul>
Team Tamblot	<ul style="list-style-type: none"> <li>Economics</li> </ul>	<ul style="list-style-type: none"> <li>New learning strategies</li> </ul>
Team Sikatuna	<ul style="list-style-type: none"> <li>Economics</li> <li>Contemporary Issues</li> </ul>	<ul style="list-style-type: none"> <li>Process on how to compute the national income</li> </ul>
Team Leon Kilat	<ul style="list-style-type: none"> <li>Economics</li> </ul>	<ul style="list-style-type: none"> <li>Teacher's guide and learning modules</li> </ul>

Source: 2015 Central Visayas K to 12 Mass Training Output for Day 1, Session 3

Table 5 Teaching Approaches and Strategies

Responsible Teams	Retrospects	Prospects
Team Lapu-lapu	<ul style="list-style-type: none"> <li>Discussion strategies</li> </ul>	<ul style="list-style-type: none"> <li>New teaching strategies</li> </ul>
Team Tamblot	<ul style="list-style-type: none"> <li>Debate</li> <li>Brainstorming</li> <li>Graphic organizers</li> </ul>	<ul style="list-style-type: none"> <li>Latest strategies in teaching</li> </ul>
Team Sikatuna	<ul style="list-style-type: none"> <li>Varied teaching approaches</li> </ul>	<ul style="list-style-type: none"> <li>New innovative approaches</li> </ul>
Team Leon Kilat	<ul style="list-style-type: none"> <li>Varied teaching approaches</li> </ul>	<ul style="list-style-type: none"> <li>Approaches for 21<sup>st</sup> century skills</li> </ul>

Source: 2015 Central Visayas K to 12 Mass Training Output for Day 1, Session 4

Table 6. Classroom Assessments

Responsible Teams	Retrospects	Prospects
Team Lapu-lapu	<ul style="list-style-type: none"> <li>Formative and summative assessment</li> </ul>	<ul style="list-style-type: none"> <li>The need for learning questioning techniques</li> </ul>
Team Tamblot	<ul style="list-style-type: none"> <li>PAPET – paper-pencil test</li> </ul>	<ul style="list-style-type: none"> <li>How to use rubrics</li> </ul>
Team Sikatuna	<ul style="list-style-type: none"> <li>Pre-test/post test</li> </ul>	<ul style="list-style-type: none"> <li>More application on the new grading system</li> </ul>
Team Leon Kilat	<ul style="list-style-type: none"> <li>PAPET – paper-pencil test</li> </ul>	<ul style="list-style-type: none"> <li>Home visitation</li> <li>New grading system</li> </ul>

Source: 2015 Central Visayas K to 12 Mass Training Output for Day 1, Session 5

Part of the paradigm shift is the participants' prospects for assessment. Just like, *a lily in the pond* that becomes dependent with water; yet it needs other nourishment to yield a colorful bloom. These teachers recognize the value of the traditional form of assessment; but they are also required to produce authentic and other alternative forms of assessment like the use of rubrics. They also need to enhance their skill in questioning techniques, the new grading system, and the practice of home visitation. According to Luistro, home visitation is one of the major tasks that teachers undertake in DepEd's Drop-out Reduction Program (DORP), in order to support students' learning success [12].

In terms of localization and contextualization (see Table 7) as provided in RA 10533, *teaching in the K to 12 is like a territorial pet dog*. Pet dogs protect their territories and become our best friend from any

possible harm. Dogs despise any stranger on their territories by continuously barking and barking. With this simile, localized teaching is simply being aware of our resources in our local territories. We use them in meaningful contexts to make learning Economics more useful during everyday life experiences.

*Teaching in the K to 12 is just like recognizing the bounty of the ecosystem*. Students in the classroom are compared like the diversity of living organisms in the ecosystem. Each of the major species provides balance in the web of life. There is no big difference of students' diversity in the classroom to the diverse living organisms in the ecosystem. Identifying their multiple intelligences is not enough; but engaging them to all these multiple intelligence makes sense to everybody through the use of differentiated instruction and assessment (See Table 8).

Table 7 Localization and Contextualization

Responsible Teams	Retrospects	Prospects
Team Lapu-lapu	<ul style="list-style-type: none"> <li>Resources available in the local setting</li> </ul>	<ul style="list-style-type: none"> <li>Process on how to utilize localization</li> </ul>
Team Tamblot	<ul style="list-style-type: none"> <li>Resources in local setting</li> </ul>	<ul style="list-style-type: none"> <li>Identification of what local resources can be made applicable</li> </ul>
Team Sikatuna	<ul style="list-style-type: none"> <li>Students' realizations</li> </ul>	<ul style="list-style-type: none"> <li>Finding for local resources</li> </ul>
Team Leon Kilat	<ul style="list-style-type: none"> <li>Resources in the locality</li> </ul>	<ul style="list-style-type: none"> <li>Finding for the best local resources</li> </ul>

Source: 2015 Central Visayas K to 12 Mass Training Output for Day 1, Session 6

Table 8 Differentiation of Instruction

Responsible Teams	Retrospects	Prospects
Team Lapu-lapu	<ul style="list-style-type: none"> <li>Use of multiple intelligences</li> </ul>	<ul style="list-style-type: none"> <li>Need to identify learners' multiple intelligences</li> </ul>
Team Tamblot	<ul style="list-style-type: none"> <li>Cater multiple intelligences</li> </ul>	<ul style="list-style-type: none"> <li>Identify multiple intelligences</li> </ul>
Team Sikatuna	<ul style="list-style-type: none"> <li>Multiple intelligences</li> </ul>	<ul style="list-style-type: none"> <li>Value multiple intelligences</li> </ul>
Team Leon Kilat	<ul style="list-style-type: none"> <li>Multiple intelligences</li> </ul>	<ul style="list-style-type: none"> <li>Identify the interest of the students</li> </ul>

Source: 2015 Central Visayas K to 12 Mass Training Output for Day 2, Session 1

Table 9 Glimpses in the Actual Teaching Demonstration

Demonstrator	Lesson	21 <sup>st</sup> century Skills	Differentiated Instruction	Contextualization	Localization	Remarks
Lady A from Talisay City Division represented the Tamblot Team	The Market and Its Structure (a lesson in the 2 <sup>nd</sup> quarter)	The four 21 <sup>st</sup> century skills of critical thinking, communication, collaboration and creativity were evident.	There was differentiation of activities	Contextualization was evident in Groups 1 and 4 activities.	Localization was made evident in group 3 activities.	Don't give the importance of market to the class; but rather draw it out and ask questions.

Table 9 (cont.) Glimpses in the Actual Teaching Demonstration

Demonstrator	Lesson	21 <sup>st</sup> century Skills	Differentiated Instruction	Contextualization	Localization	Remarks
Lady B from Cebu Province Division represented the Lapu-lapu Team	Fiscal Policy ( a lesson in the 3 <sup>rd</sup> quarter)	The four 21 <sup>st</sup> century skills of critical thinking, communication and collaboration.	There is the use of differentiation but, it is fixed by the teacher with no choice in the part of the students.	Contextualization is used.	Localization is less likely used.	Creativity is less emphasized. Provide ample learning activities in the list for student to choose from.
Lady C from the Cebu Province Division represented the Lapu-lapu Team	The Difference of Needs and Wants (a lesson in the 1 <sup>st</sup> quarter)	3 of the four 21 <sup>st</sup> century skills are not utilized. Creativity was less likely used.	Evidence of differentiation was only in the lesson plan, but no observed in the actual demonstration.	The attempted use of contextualization was not fully processed. It was made hanging.	The attempted use of localization was not fully processed. It was made hanging.	The lesson objectives were carried out because the teacher only made a lecture.

Source: 2015 Central Visayas K to 12 Mass Training Output for Day 3, Session 1

The teacher demonstrators try their best to integrate what they have learned about 21<sup>st</sup> century skills in actual teaching demonstration. The teaching impact of the K to 12 Training is compared to an aphorism that *“it is easy to bend the trunk of young tree than the old one”*. Ladies A and B, on their 20s and 30s, have successfully defended it with minor suggestions, unlike Lady C, on her 50s, who have struggled a lot in the demonstration, following the clutches of traditionalism in teaching. She has a hard

time catching up with what is covered during the four day discussions and workshops. This means that younger teachers are compliant with new trends in teaching and they can easily catch up. Some teachers, staying in the profession for quite a long time, have tendencies to be hooked with status quo, toward traditional teaching, ending their difficulties to catch the primary tenets of K to 12. Obviously, these are the teachers that need immediate instructional remediation.

Table 10 Process Observation

Demonstrator	Lesson	Remarks	Suggestions
Lady A represented the Talisay City Division	The Market and Its Structure (a lesson in the 2 <sup>nd</sup> quarter)	Observer 1 saw that the learning competencies are carried out. Learning activities follow differentiated instruction. There was active participation of the participants. The use of multimedia in the demonstration was commendable. Observer 2 commented that the use of multimedia is only a dream for teachers teaching in the remote islands of the region. The demonstrator was creative and open-ended questions were used. Observer 3 observed some group participants had no contribution. Observer 4 There is involvement of higher-order-thinking skills with 4Cs.	1. Do not limit the drawing of definition of the market with the use of a concept map only. 2. Vary questions more especially on the use of open-ended questions. 3. Monitor the activities of the group. There should be more pictures to use to represent the veracity of market concepts. 4. Modify the activities for the slow learners. Do not allow the bright students to monopolize the interaction. Call other students to express their perspectives.

Table 10 (cont.) Process Observation

Demonstrator	Lesson	Remarks	Suggestions
Lady B represented the Cebu Province Division	Fiscal Policy ( a lesson in the 3 <sup>rd</sup> quarter)	Observer 1 Too many activities, not attainable in real life setting. Observer 2 There is student engagement. Observer 3 Some students are not properly oriented on what to do. Observer 4 The teacher is conscious about her time management.	1. Relate the present inflation policy to present realities. 2. Go deeper with the questions. 3. Make sure to finish all the activities first, before the output presentation. 4. Provide written instruction in the venn diagram.
Lady C represented the Cebu Province Division	The Difference of Needs and Wants (a lesson in the 1 <sup>st</sup> quarter)	Observer 1 The teacher has a tendency to manipulate the discussion. Observer 2 There was plenty of fragmentation that affected smoothness and momentum in lesson delivery. Observer 3 There was less participation of everybody in the demonstration. Observer 4 The demonstration is dragging and boring.	1. Observe the proper K to 12 teaching. 2. Diffuse the lesson to the class. Do not conduct lengthy fragmentation. 3. Encourage more participation of the members of the class. 4. Create a lively and interesting teaching demonstration.

Source: 2015 Central Visayas K to 12 Mass Training Output for Day 3, Session 2

The three teaching demonstrations are monitored by four process observers, who are selected members among the training participants, in order to make suggestions for improvement. These process observers represent the *army of ants*, who is willing to help carrying the load of foods to protect the queen from hunger and any other battle that threatens their

territorial domain. Vis-à-vis, their observations and suggestions are very vital to prepare for the actual learning battle in the field. Their suggestions concentrate on student-centered learning enhancement, in order to protect the “queen”, our students.

Table 11 Facilitators' Validation of Process Observation

Demonstrator	Lesson	Remarks	Suggestions
Lady A from the Talisay City Division	The Market and Its Structure (a lesson in the 2 <sup>nd</sup> quarter)	1. The use of visual materials like pictures is very commendable. 2. Concept was also used in the demonstration. 3. Knowledge objective was derived from the concept map. 4. Differentiated activities are fully utilized. 5. Processed questions were used to deepen the skills.	1. Don't give the importance of market to the class. Ask questions to draw it out. 2. Tangible market design is needed in a specific product.
Lady B from the Cebu Province Division	Fiscal Policy ( a lesson in the 3 <sup>rd</sup> quarter)	1. The use of a jigsaw puzzle is a learner-centered activity. 2. Unlocking of concepts and terminologies was conducted. 3. The use of Venn diagram is commendable to have contrast between expansionary policy and contractionary policy in responding inflation.	1. Don't mention the concept on inflation. Proceed right on the jigsaw puzzle for the students to discover it. 2. Learning activities by group are prescriptive; give students the freedom to choose learning activities from the list of options.
Lady C from Cebu Province Division	The Difference of Needs and Wants (a lesson in the 1 <sup>st</sup> quarter)	1. The participants in the demonstration are noisy. 2. The teacher fails to have eye contact with her students. 3. The teacher's demonstration is not learner-centered contradicting the essence of the K to 12 tenets.	1. Don't discuss about the picture. Draw out questions what you want students to tell about the pictures. 2. Questioning techniques are should be used to generate the two concepts of need and want. 3. It needs acceptance and focus in K to 12 teaching in the proper way.

Source: 2015 Central Visayas K to 12 Mass Training Output for Day 3, Session 3

Table 12. A Converge of Paul &amp; Elder's Higher-Order-Thinking Skills &amp; Herman's Brain Quadrants

<b>Quadrant A Attributes</b>			<b>Quadrant D Attributes</b>		
1A Logic	+ Purpose	= Confidence in Reason	8D Accuracy	+ Assumptions	= Courage
2A Clarity	+ Question	= Fair-mindedness	7D Precision	+ Inferences	= Perseverance
<b>Quadrant B Attributes</b>			<b>Quadrant C Attributes</b>		
3B Depth	+ Concepts	= Integrity	6B Fairness	+ Implications	= Humility
4B Breadth	+ Information	= Autonomy	5B Relevance	+ Point of view	= Empathy

*Inocian's Model in Teaching Economics (2015)*

**Teaching a man to fish rather than giving him fish** represents the facilitators' remarks and suggestions, an adage; that is directed for the improvement of teaching pedagogies, the use of instructional materials, and teacher facility in the learning process. This means that facilitators look for the enhancement of the demonstrators' teaching effectiveness including the rest of the participants to teach more creatively.

### Triangulation to Ensure Objectivity

The 89 percent positive remarks and suggestions of the training facilitators indicate a strong belief on the demonstrators' performance to chart success for Grade 10 curriculum implementation. Based on expert judgment, training facilitators see 11 % improvement on the participants' weakness in the areas of learning activities that develop creative thinking skills. On the part of the teacher demonstrators, their strengths (self-

### Spiral Instructional Modelling (SIM) in Teaching Economics

The foregoing finding of the study, Table 12 provides the Spiral Quadrant Model in teaching economics. Paul and Elder [13] pose a jigsaw puzzle on standards, elements, and intellectual skills whether or not these contribute the holistic development. Using the Outcomes-based Curriculum, Instruction and Assessment (OBCIA) context, the standards for higher-order-thinking are non-negotiable curriculum intent because this defines the quality of students we want to produce as our ends. The elements of higher-order-thinking guide the teacher in the actual implementation of the curriculum, as means, with the use of differentiated approaches, methods, and techniques. The intellectual skills describe the enduring outcomes that describe the desirable virtues that shape the ends. With Ned Hermann's four brain quadrants, the Paul & Elder's Critical Thinking Skills

efficacy) are pegged on 75% in terms on integrating new updates in the K to 12. Their individual lesson plans are scrutinized, in order to ascertain the strengths and weakness. The result is added with their actual observation as perceived by the other participants. It takes only 25% to improve on their weaknesses in the aspects of shifting paradigm, lesson planning, implementing, and evaluating. The process observers see 67% of their colleagues' teaching effectiveness, vis-à-vis extend their collaboration during the success of the demonstration. It takes 33% to improve their weaknesses in the aspects of facilitating learning. Though, the facilitators' assessment on their strengths is higher compared than the process observers, this means that they are stricter and become more serious in the actual implementation of the curriculum. In the outset, it takes a long way to go in order to harness a 100% percent excellent implementation of the K to 12.

in Table 12 can be realigned in 8 Spiral Instructional Modeling (SIM).

#### 1. The Blue Quadrant LPC Model

Logic, Purpose and Confidence (LPC) Model adapts the QA learning dimension. This model is highly abstract that develops the learners' ability to think correctly with confidence leading them to think critically in a logical and most objective direction. In economics, the students are posed with inflation as basic concept. They are asked to give various ideas of this concept with the use of meta-card that is given to each one of them in the class. Each meta-card represents one idea, the more ideas they have, the more meta-cards they use. These meta-cards are to be mounted on the board in order to logically cluster and contrast common and different ideas. Getting settled, they are asked to identify the factors and the consequences of inflation in different market contexts. Finally, they will have to reason out confidently on inflation's impact to both producers and consumers.

This model requires the use of high and complex levels of thinking [5].

### **2. The Blue Quadrant CQF Model**

Clarity, Question and Fairness (CQF) Model observes the QA learning dimension also; but requires a safe validation of information by asking questions in the mind in order to look for the answers in any reading material or from anybody in the classroom. Using the same concept on inflation, the learners clarify the types of inflation through individual reading in conventional and unconventional sources of information. Out of this, they can answer the questions they raise in mind. In order to establish fairness they find additional readings in the internet to provide validation of their pre-conceived notions. By then, they can analyze the contextual realities of how many are affected with cost-push, demand pull and spiraling types of inflation. Generating relationship is required in this model in order to establish fairness. To Johnson [5] students look for similarities between one or more person, item, or event, which works especially well when trying to make personal connections with the subject matter.

### **3. The Green Quadrant DCI Model**

Depth, Concepts and Integrity (DCI) Model follows the QB learning dimension. Being regarded as procedural, the learners who have self-regulation learn inflation by making connections of the causes and effects of inflation in relation to the aforementioned types of cost-push and demand-pull inflation. Students can trace the impact or implications of inflation in small business management, industry and production, and in international trade relations, in a most vertical process of integration. Learning on this process provides students the regard for integrity. To Johnson [5] flexibility is required in this model that helps students generate a variety of ideas looking for a number of different ways or approaches.

### **4. The Green Quadrant BIA Model**

Breadth, Information and Autonomy (BIA) Model follows the QB learning attributes also a little twist toward integration. Using the same lesson on inflation, the students gather different information related to these concepts like: peso depreciation, devaluation, and deflation. They engaged in lateral integration of this co-related information on how this impacts in the development of science and technology, art and advertising, media and communication, education,

culture and lifestyles. Learning on this process builds students' autonomy. Elaboration is required in this model to make the original better, more interesting, more detailed, or more complex, or more refined [5].

### **5. The Red Quadrant RPE Model**

Relevance, Point of view and Empathy (RPE) Model follows the QC learning domains, which consider students' social interaction and collaboration. They tend to be more practical to treat inflation in a most relevant way. They share about the advantages and disadvantages of inflation to the life of the producers and consumers. They empathize to the poor sector of the economy to try meeting both ends meet for survival. They recommend measures for the government for poverty reduction, in order to maintain sustainable development. Fluency is required in this model with the use brainstorming in multiple perspectives [5].

### **6. The Red Quadrant FIH Model**

Fairness, Implication and Humility (FIH) Model follows also the QC learning domains with emphasis to more equitable distribution of wealth and the observance of human rights equality. In the discussion for inflation, the students are also exposed to the social realities of poverty in the countryside, in order to see the impact of political administration and governance. By doing this, they learn humility as the most important value for better community life. They have the heart for the poor and offer employment opportunities to cope with inflation.

### **7. The Yellow Quadrant PIP Model**

Precision, Inferences and Perseverance (PIP) Model follows the QD learning potentials. The students are precise on their judgment issues on inflation. They do research and use their inferences to create a new model for development in inflation reduction. They need to persevere in the research process, in order to produce the best contribution for knowledge development. They can find, perhaps, the best contribution to curb inflation favorable to both the producers and the consumers. To integrate is required in this model that is to create something new and interesting by integrating the salient elements of two or more existing things [5].

### **8. The Yellow Quadrant AAC Model**

Accuracy, Assumptions and Courage (AAC) Model follows also the QD learning domains with

emphasis on normative judgement. Like the PIP Model, the students are taught to be accurate on their inventions or creations to prevent wastage of material resources. With inflation as a lesson, they create a mechanism for inflation reduction. They remain steadfast and courageous about their cause for transformation. This model requires originality – a thinking skill to design or create something new such as a product, poster, or performance [5].

### CONCLUSION AND RECOMMENDATION

The integration of the 21<sup>st</sup> century skills in teaching economics was aptly carried out in the areas of critical thinking, communication, and collaboration. Teacher demonstrators were aware of its integration; however, the integration of creativity as one of the four skills is found insufficient, which needed utmost attention, with full academic administrative support. Thus, a limitation that DepEd officials like: the principals, supervisors, and superintendents will observe those teachers who are not properly implementing the required standards for teaching economics in the K to 12 and may observe the following: (1) follow up classroom observation of the trained teachers regarding propensity and sustainability on what they have learned in the mass training for teachers, (2) identify the best teachers who can sustain the K to 12 principles and orient new teachers and tenured teachers who did not participate in the mass training of teachers in the K to 12 way, (3) encourage teachers to take up their master's degree in Economics in order to develop content expertise in the field.

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