Promoting Academic Achievement in Economics with Metacognitive Learning

Joemel P. Calderon, Ph.D.

Department of Education, Schools Division of Tarlac Province, Tarlac, Philippines, joemel.calderon@deped.gov.ph

Abstract – This classroom-based action research aimed to determine the effectiveness of metacognitive learning in Economics. A combination of qualitative and quantitative designs, this research employed observation and participation, journaling, mini-conferences, surveys, and weekly formal content-based assessments as data gathering instruments. There were 22 students of the Grade 10 Class, selected purposively, who participated in the study. The qualitative data obtained were interpreted using phenomenological methodology while the quantitative data were processed through Statistical Package for Social Sciences (SPSS) using the following: mean and paired t-test. Results revealed that metacognition has a positive impact on the improvement of attitude and academic achievement of students towards Araling Panlipunan (Economics) learning. Their scores in the weekly content-based assessment increased over time. It showed that students could better learn when they self-assess, valued, and empowered inside the classroom by listening to their voices and giving them opportunities to collaborate with their classmates as well as with their parents. Further, when practiced continuously, metacognition positively benefits the students and teachers as well.

Keywords – academic achievement; metacognitive learning

INTRODUCTION

Teachers should not teach but rather facilitate learning. By all means, as embodied in the 1987 Philippine Constitution, education must be by and for democracy. It is implicit that the youth or the students are not just puppets controlled by the state but instead they are given the opportunities to develop their potentialities with the guidance of institutions under the ideals of democracy (Calderon, 2011).

The child-centered educative process that the Department of Education advocates pushes for independent learning or the so-called learning how to learn. On that note, it is fitting that students be able to adopt the skills of "learning about learning" which is considered by Flavell (1979) as metacognition, a 21st Century learning skill.

Metacognition is the process or skill of thinking about thinking, knowing what we know, understanding how we learn, and being able to discern when and how to applystrategies for learning; a critical step in empowering students to take charge of their learning (Niderberg, et.al., 2013).

It has been said that when the motivation to learn comes from within the desire of the learner to learn, education will be more fruitful. Thus, this study considers highly metacognition as a learning approach, activity, process, assessment or strategy in fostering academic achievement, positive attitude and a decrease in disruptive behaviors among the Araling Panlipunan (Economics) learners of San Felipe High School.

Metacognition merely is thinking about thinking or as the researcher puts, learning about learning. When students are metacognitive, they have an understanding of learning in three areas: they understand themselves as learners, understand a given task, and they understand a variety of strategies and how to use them in a variety of situations (www.edugains.ca, 2013).

Theories of metacognition emphasize the importance of self-reflection as a means to improve one's ability to monitor, self-direct and evaluate one's learning processes (Gama, 2004).

It is a process whereby students take ownership of their learning. This should not be construed, however, the abdication of teachers' control of the classroom. It somewhat suggests the sharing of responsibility under the umbrella of the teaching-learning process.

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Further, metacognition can increase engagement or commitment. It has the potential to empower students to take charge of their learning and to improve the meaningfulness of students' learning.

In general, metacognition is seen as an effective solution to making a positive change because it promotes empowerment, which doesn't only cater students the status as beneficiaries, but as participants of change as well.

San Felipe High School, the school where the researcher undertakes his mission to educate, has its share of students who seem to disregard learning as an enjoyable and an empowering venture. Resulting problems such as low academic achievement, adverse attitude towards the learning areas, and disruptive behaviors such as absenteeism emerge in the process.

Nevertheless, such status quo could also be attributed to the fact that students are being deprived of empowerment inside the classroom, which roots from the seeming denial of students' empowerment through the discouraging learning activities or methodologies teachers employ.

Thus, the researcher was interested in undertaking a classroom-based action research to promote academic achievement in Economics with metacognitive learning.

OBJECTIVES OF THE STUDY

This study investigated the effectiveness of metacognitive learning in Economics. A corollary, it determined metacognitive learning's impact on students' attitudes and behaviors and academic achievement in *Araling Panlipunan* (Economics).

METHODS

This research is a blend of quantitative and qualitative designs as the researcher did not only gather data through surveys and content-based assessments but also made use of reflection and observation as tools.

The quantitative design focuses on the "what." It involves measures of values or counts and is expressed as numbers (http://www.abs.gov.au, 2013).

A qualitative design, on the other hand, is a way to interpret behavior or attitudes (Hamilton, 2015). It is multi-method in focus, involving an interpretive, naturalistic approach to its subject matter (Denzin and Lincoln, 1994). In short, it concentrates on the "why" and "how" of research. Thematic assessment of data was considered.

The subjects of this study are 22 purposively sampled students of the Grade 10 Class of San Felipe High School enrolled for the S.Y. 2015-2016.

The samples were identified based on existing and current records to suit the objectives of this research. These students are those who academically perform the least, who have disruptive behaviors and seeming adverse attitude in Economics class. They were identified with the records kept by the teacher.

Qualitative and quantitative data are gathered in light of the objectives considered in this study. Qualitative data were based on the researcher's perspective obtained from observations and journal entries, and around the metacognitive activities undertaken by the students and even by the teacher. The students' journal entries were facilitated by the teacher through reflection prompts.

In hope of engendering dependable quantitative data, weekly formal content-based assessments were utilized. Moreover, surveys were floated among the students and their parents about the students' attitudes, and the improvement they think happened after the intervention stipulated in this study has been implemented. These were qualitatively and quantitatively treated.

Tracking of the weekly formal content-based assessments throughout the implementation was undertaken. Averages were computed and compared from week to week. The Dependent T-test for Paired Samples or Paired T-test was used to determine the significance of differences between the averages garnered by the students in the consecutive weeks of formal content-based assessments.

The qualitative data gathered were analyzed thematically. Related data were organized by theme and the emerging trends were discussed supported by sound pedagogies and philosophies. Frequencies and percentages were used to observe commonality.

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For the Survey on Attitude, evaluated on students' perceived enthusiasm, the means were computed and interpreted as Very Enthusiastic (4.21-5.00); Enthusiastic (3.41-4.20); Somewhat Enthusiastic (2.61-3.40); Unenthusiastic (1.81-2.60); and Very Unenthusiastic (1.00 – 1.80). Using the same preceding mean ranges, the Final Survey on students' perceived extent of *Araling Panlipunan* (Economics) learning as enriched by metacognition, was interpreted as Very High Extent, High Extent, Moderate Extent, Low Extent, and Very Low Extent.

RESULTS AND DISCUSSION

A. Students' Attitudes towards Economics

Statistically treated data as presented in Tables 1 and 2 specifically satisfy the following problems:

1. Do students' attitudes towards Economics improve in response to metacognitive learning?
2. Are disruptive student behaviors reduced by metacognitive learning?

To begin with, Table 1 shows the students' comparative perception on their enthusiasm in learning Economics. The findings under Post-Survey, specifically, are reflective of their attitude towards Economics learning as it purported to measure their self-assessed attitude as affected by metacognition.

Table 1. Comparative Means of Students' Perception on Enthusiasm in Learning Economics

Indicator	Pre-survey		Post Survey	
	Mean	Description	Mean	Description
How do you like Araling Panlipunan (Economics)? *(Gaano mo kagusto ang Araling Panlipunan (Ekonomiks?)*	3.36	Somewhat Enthusiastic	4.23	Very Enthusiastic
Do you do Araling Panlipunan (Economics) activities away from school? *(Nagsasagawa ka ba ng mga gawaing pang-Araling Panlipunan (Ekonomiks) sa labas ng paaralan?)*	3.05	Somewhat Enthusiastic	4.32	Very Enthusiastic
How have you like learning Araling Panlipunan (Economics) this school year? *(Gaano mo kagusto ang pag-aaral ng Araling Panlipunan (Ekonomiks) sa taong ito?)*	3.27	Somewhat Enthusiastic	4.41	Very Enthusiastic
Overall Mean	3.23	Somewhat Enthusiastic	4.32	Very Enthusiastic

The table reveals that the students have an improved perception on their enthusiasm in learning Economics with the computed post survey overall mean of 4.32, interpreted as "very enthusiastic" compared to its pre-survey overall mean of 3.23, described as only "somewhat enthusiastic". Even more, the pre-survey and post survey results in each of the indicators show enriched enthusiasm of the students. This, in general, is an indication that the students' attitude towards learning Economics has improved in the course of the implementation of the action research. Such attitude improved is also suggestive of the students' flight from disruptive behaviors observed before the implementation of this study.

The metacognitive activities they have undertaken, largely on self-reflection, redound to the improvement of their attitude towards learning.

In fact, most of them accepted the most important reason why they inclined to have had an improved attitude – that studying is the key to a brighter future. Envisioning their future, with a clear association of what they are doing right now – learning – and what they will become in the near future, emerged as one theme in their reflections. It means that they consider a goal in learning.

Academic goal orientation is based on the contemporary goal-as-motives theory where it is posited that all actions are given meaning, direction, and purpose by the goals that individuals seek out, and that the quality and intensity of behavior will change as these goals

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change (Covington as cited in Mc Grew, 2008). Achievement goal theory is particularly important in education as it is believed that by differentially reinforcing some goals (and not others), teachers can influence (change) the reasons why students learn—that is, change their motivation (Covington, 2000). Motivation is one of the most potent factors that influence student learning (Svincki, 2005).

"Sisikapin kong mag-aral nang mabuti para sa kinabukasan ko" (I strive to study better for my future).

"Bilang mag-aaral napakahalaga ng itinuturo ng aming guro dahil ang mga hindi natin alam ipinaaalam ng ating guro gaya na lang ng wastong pag-uugali, atbp. Kaya ang masasabi ko lang, napakahalaga ang lahat ng ito sa akin dahil gusto kong makapagtapos ng pag-aaral" (The things the teacher facilitate are very important to a student especially the things we do not know such as good manners, etc. I consider all these things very important because I wanted to finish my studies).

Further, focus and independence in learning materialized as other themes in their reflections. These are clear images of the positive changes in their adverse attitude and apathy toward learning in the course of the metacognition. One student had put:

"Hindi ko inakala na masasagutan ko ang mga gawain namin na hindi ako nangongopya" (I did not expect that I can perform our activities without copying from my classmates).

These themes are indicative of the students' metacognitive learning. They learn about learning. This is the most important output any learning process could have because it is "education" which should permeate among the students. As the great Albert Einstein postulated, "Education is what remains, when everything learned in school is forgotten". This can be construed as students develop positive attitudes beneficial to better learning outcomes.

Next, Table 2 displays the parents' comparative perception on their children's enthusiasm in learning Economics.

Table 2. Comparative Means of Parents' Perception on their Children's Enthusiasm in Learning Economics

Indicator	Pre-survey		Post Survey	
	Mean	Description	Mean	Description
Is your child enthusiastic about learning Araling Panlipunan (Economics)? *(Ang inyo bang anak ay interesado sa pag-aaral ng Araling Panlipunan (Ekonomiks)?)*	3.32	Somewhat Enthusiastic	4.64	Very Enthusiastic
Does your child do Araling Panlipunan (Economics) Activities at home? *(Ang inyo bang anak ay nagsasagawa ng mga gawaing pang-Araling Panlipunan (Ekonomiks) sa bahay?)*	3.09	Somewhat Enthusiastic	4.27	Very Enthusiastic
How does your child like learning Araling Panlipunan (Economics) this school year? *(Gaano kagusto ng inyong anak ang pag-aaral ng Araling Panlipunan (Ekonomiks) sa taong ito?)*	3.41	Enthusiastic	4.64	Very Enthusiastic
Overall Mean	3.27	Somewhat Enthusiastic	4.52	Very Enthusiastic

A growing body of researches shows that parental involvement not only improves students' behavior and attendance but also encouragingly influences students' achievement (The Center for Comprehensive School Reform and Improvement, 2005). Consequently, this investigation involves parents in the assessment of the enthusiasm of their children in learning Economics.

In a way, the parents' involvement in this study, although quite nominal, is still seen an important factor in the improvement of students' attitude as discussed previously. Their participation in the study served as an

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avenue for them to be incorporated in the learning process of the students.

Students' comments in their reflections indicate the importance of parents and other family members' participation in achieving positive outputs in their education. One of which is literally exemplified below.

"Kapag nahihirapan ako sa mga lessons nagpapaturo ako sa aking mama. Minsan din sa aking mga kapatid" (When I find difficulty in our lessons, I let my mother help me understand. Sometimes with my siblings as well).

Johnson and Duffett (2003) reported that in a 2003 analysis of more than 25 public opinion surveys by Public Agenda, 65 percent of teachers believed that students would do better in school if their parents were more involved, and 72 percent of parents feel that children whose parents are not involved sometimes "fall through the cracks" in school.

The comments of the parents, examples are stated below, indicate their belief that parental involvement is an essential ingredient in the schooling success of learners.

"Para lalong magkainteres sa leksiyon at mag-aral nang mabuti ay kailangan pa siyang higpitan sa mga aralin" (He should be closely supervised for him to have more interest in his studies).

"Tutulungan namin ang aming anak na mag-aral pa nang mabuti" (We will help our child to study better).

Fittingly, the parents' perception as shown by Table 2 ostensibly agrees with their children's perception on enthusiasm in learning Economics with the improving trend revealed by the pre-survey mean of 3.27 or only "somewhat enthusiastic" to post survey overall mean of 4.52 or "very enthusiastic."

The parents affirm the positive changes that happened in their children's learning on the subject at hand. This is a clear reinforcement to the finding that students' perception of their enthusiasm in learning Economics is improving.

B. Academic Achievement Affected by Metacognition

Figures in Tables 3, 4, and 5 concentrate on answering these problems:

1. Is academic achievement in Araling Panlipunan (Economics) affected by metacognition?
2. Is there a significant difference between the scores in the weekly formal content-based assessments as basis of the academic achievement of the sample-students?

Quantitatively and phenomenologically, relevant interpretations were made.

Firstly, Table 3 shows the scores obtained by the students in the weekly formal content-based assessments, which served as the primary tool in gathering quantitative data for the purposes of this research.

Table 3. Scores of Students on the Weekly Formal Content-Based Assessments

Student	Content-based Assessment					Mean
	1	2	3	4	5	
1	4	6	8	10	10	7.60
2	8	9	8	10	10	9.00
3	5	9	7	10	10	8.20
4	6	7	9	10	10	8.40
5	6	7	7	9	10	7.80
6	6	6	8	8	10	7.60
7	4	5	6	10	9	6.80
8	5	7	9	9	10	8.00
9	7	7	8	10	9	8.20
10	6	7	8	10	10	8.20
11	2	8	8	9	9	7.20
12	6	9	10	10	10	9.00
13	6	7	10	10	10	8.60
14	7	7	8	9	9	8.00
15	6	5	9	6	8	6.80
16	5	6	8	9	10	7.60
17	5	6	6	10	10	7.40
18	7	4	6	8	9	6.80
19	6	6	7	7	9	7.00
20	4	7	7	9	9	7.20
21	5	6	6	6	10	6.60
22	5	9	10	10	10	8.80
Mean	5.50	6.82	7.86	9.05	9.59	7.76

Although some of the students are with scores that fluctuate in some periods, it could still be gleaned from the table that overall with the obvious perfect scores of 10 students obtain in the content-based assessments, the students mean scores are generally increasing from the first to the final content-based assessment (5.50, 6.82, 7.86, 9.05, 9.59).

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These show that the students' performance in Economics has improved in the course of their exposure to metacognitive learning which includes reflection, mini-conferences, and think-a-loud sessions.

Table 4 ascertains above-stated finding with the analysis of the significance of the paired differences of the content-based assessments in a tiered series.

Table 4. Paired Difference between the Scores of Students on the Weekly Formal Content-Based Assessments

Content-Based Assessment	Mean Difference	t	Sig. (2-tailed)
CBA1 vs. CBA2	-1.31818	-3.277	.004*
CBA2 vs. CBA3	-1.04545	-3.697	.001*
CBA3 vs. CBA4	-1.18182	-3.548	.002*
CBA4 vs. CBA5	-.54545	-2.238	.036*

**significant at 0.05*

The table clearly reveals that there is a positive changing trend in the performance of the students in Economics learning as indicated by their obtained scores in content-based assessments. All the significance values are below the set alpha level of 0.05 which direct the rejection of the null hypothesis. These mean that there is undeniably a significant difference between the scores in the weekly formal content-based assessments as a basis of the academic achievement of the sample-students.

Foregoing findings collaborate the discoveries of Homik, M. & Melis, E. (2007); Johnson, S., (n.d.); and RMIT (2006) that the art of reflection can help boost students' critical thinking skills, encourage students to think about their thinking (metacognition), and help students prepare for assignments and examinations.

Because the lessons they have taken were of greater difficulty as they were a part of the second quarter, the students performed well in the content-based assessments. In other words, the students have certainly improved their academic achievement in Araling Panlipunan (Economics). This can be attributed to the students taking part in metacognitive learning where they have realized significant aspects of successful learning.

Appositely, the students seemed to enjoy learning with collaborative work. Social learning emerged as another theme in their reflections. They highly regard it to be very advantageous to their academic achievement.

"Higit akong natuto sa mga group activity dahil para sa akin hindi lang matututo, magkakaroon rin ng bonding-time sa mga kaklase" (I learned the most in group activities because for me one will not just learn but will also have bonding-time with his classmates).

"Higit akong natuto sa mga group activity dahil dito kami nagtutulungan, dito lumalabas ang ibat ibang opinion ng bawat kasapi sa grupo" (I learned the most in group activities because we cooperate, we share opinions).

In fact, the students have set the need for collaboration as one of their expectations in learning.

"Nais kong magkaroon ng pagpapalitan ng ideya ang guro at estudyante at maraming mga estudyante ang makihalubilo tuwing may gawin na grupo ang kalahok" (I expect that teachers and students exchange questions and answers and that many students will mingle every time there are group activities).

Finally, Table 5 exhibits the results of the final survey administered among the students. It shows the extent of students' Economics learning as enriched by metacognition based on their assessments.

Table 5. Extent of Students' *Araling Panlipunan* (Economics) Learning as Enriched by Metacognition

Indicator	Mean	Description
How much do you feel like you learned in the past 5 weeks? *(Gaano ang iyong natutunan sa nakaraang limang Lingo?)*	4.14	High Extent
Did you feel that your views were valued in the classroom? *(Naramdaman mo ba na ang iyong mga saloobin ay pinahahalagahan sa klase?)*	4.14	High Extent
Did honestly assessing your own learning progress help you learn better? *(Nakatulong ba sa iyong pag-unlad ang matapat na pagtaya sa iyong sariling pagkatuto?)*	4.27	Very High Extent
Did honestly assessing your own learning progress make you feel that your viewpoint was valued? *(Nakatulong ba ang matapat na pagtaya sa iyong pagkatuto na maramdamang pinahahalagahan ang iyong saloobin?)*	4.64	Very High Extent

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Do you feel that you were able to learn more effectively when honestly assessing your own learning progress? *(Nararamdaman mo ba na higit kang natututo kung matapat mong tinataya ang sarili mong pagkatuto?)*	4.55	Very High Extent
Would you prefer the teacher to exert less control in assessing your own learning progress? *(Ninanais mo ba na ang iyong guro ay higit na pamahalaan ang pagtaya sa sarili mong pagkatuto?)*	4.14	High Extent
Overall Mean	4.31	Very High Extent

Economics learning has been perceived "very high extent" by the students with the computed overall mean of 4.31. Noticeably, the indicators with the highest means (4.27, 4.64, and 4.55) focus on students' perception that "honestly assessing their own learning progress" made them feel valued inside the classroom, and learn better.

This finding apparently puts metacognition to be one of the most significant learning tools we can model for students (Desautels, 2014). Ultimately, we want our learners to become self-assessors of their work, dispositions, and goals.

Reflectively, the students had a realization of the importance of sacrifice for any benefit they would have in the end. Specified by their statements is purpose-driven learning which does not succeed without patience and perseverance.

"Nalaman ko na kailangan ng tiyaga at pagsisikap para matuto" (I realized that to learn, there is a need for determination and perseverance).

The students considered in this study may have a slow learning pace but with their realization in the process of metacognition, they made themselves better their learning achievement. As Charles Spurgeon had put, it is "by perseverance the snails reach the ark."

Furthermore, the table shows that the students consider their learning "very high extent" when their teachers have less control in assessing their learning. The students see empowerment, as its emerging theme, an important factor in ensuring achievement. Nevertheless, as they acknowledge the importance of being heard they also recognize the power of listening. They realized that to learn is two-way. It takes two to tango as we say.

"Nalaman ko na dapat makinig nang mabuti para malutas ang gawain" (I discovered that listening helps in performing activities/answering problems).

"Mahirap pa lang matuto kung hindi ka nakikinig" (It's hard to learn if you are not listening).

In addition, they also acknowledge the teacher's personality as an important factor to their learning.

"Ginaganahan ang klase kapag 'jolly' o masayahin ang guro" (The class becomes motivated when the teacher is good-humored).

"Nasasayahan kami sa mga pagtuturo ng aming guro dahil minsan siya'y joker" (We are happy when our teacher facilitates our lessons because sometimes he is a joker).

These comments made by the students in their reflections agree with Alazzi & Chiodo (2004). They found out in a phenomenological study on students' perceptions of Social Studies that students enjoyed class when a teacher is enthusiastic and excited about the subject.

All of these are contributory to the improvement of their learning indicated by no less than themselves.

CONCLUSIONS

Metacognition has a positive impact on the improvement of attitude, behavior and academic achievement of students towards Araling Panlipunan (Economics) learning. Students can better learn when they self-assess, valued inside the classroom by listening to their voices and giving them opportunities to collaborate with their classmates as well as with their parents. When metacognition is continuously practiced, its benefits would be cultivating on the part of the students and teachers as well. Goal-orientation, collaborative or social learning, focused and independent learning, parental involvement, and teacher's personality are factors of the promotion or improvement of learning.

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