

Critical Thinking Skills in Non-School Activities of Absentee Students

Clark B. Banabatac

Abstract

This qualitative research brought to light the critical thinking skills developed by the absentee students in one public secondary school in the Fifth District of the Province of Iloilo. Five participants were purposively selected based on their absences and responses to the checklist of non-school activities. Ethnography was used to determine the critical thinking skills manifested by the absentee students in their non-school activities, the non-school activities that developed their critical thinking skills, and the ways on how they developed their critical thinking skills. The principles of constructionism and interpretivism guided the domain, taxonomic, componential, and thematic analyses of data. Participant observation, ethnographic interview, and journal writing were used to triangulate the results. The themes revealed that the absentee students learned their interpretation, analysis, inference, explanation, and self-regulation skills as they engaged in non-school activities. It was shown that livelihood activities, household activities, and games developed the critical thinking skills of the absentee students. It was further revealed that the absentee students developed critical thinking skills through training and observation at home, through observation and participation in the activities in the community, through motivation and encouragement in school, and through the influence of social media and support of significant others.

Keywords: critical thinking skills, absentee students, non-school activities

Stagnant progress in education has consequences for the students who frequently miss their classes. Hence, it is crucial to reflect on and address the problems regarding absenteeism. It is also important to explore new approaches to determine whether the students have mastered the skills they are taught, and whether they are being taught of the skills they need in life. Among the central creation essential to the development of the skills of the learners are personalization, communication, and informal learning (Scott, 2015).

Informal learning could be an avenue to address a challenge to the teachers in inculcating critical thinking skills most especially that there are studies that show poor performance of the students in critical thinking skills. For instance, the Association of American Colleges and Universities (2005) reports that only 6% of the undergraduate seniors demonstrated critical thinking proficiency.

It is necessary to reflect on this instance of poor critical thinking performance along with the implementation of curriculum most especially that critical thinking is one of the two main goals of mathematics education under the K to 12 program (Department of Education, 2013). Critical thinking involves purposeful, self-regulatory judgment which results in interpretation, analysis, evaluation, and inference as well as explanation of the evidential, conceptual, methodological, ceteriological, or contextual considerations upon which the judgment is based (Facione, 2013).

Hence, critical thinking skills of the students can be explored within their local context. This study was conducted to explore the critical thinking skills of absentee students in their non-school activities.

Specifically, this study sought answers to the following questions:

- 1) What are the critical thinking skills manifested by the absentee students as they engage in non-school activities?
- 2) In what non-school activities do absentee students develop the critical thinking skills?
- 3) How do the absentee students develop the critical thinking skills in their non-school activities?

This study is based on the epistemology of constructionism. Its theoretical perspective was interpretivism which is also anchored on Bandura's Social Learning Theory.

Materials and Methods

This qualitative research employed ethnography which refers to an integration of first-hand empirical investigation of the culture and practices of the people and the interpretation of social organization and culture (Hammersley & Atkinson, 2007). Figure 1 shows the stages considered in the conduct of the study.

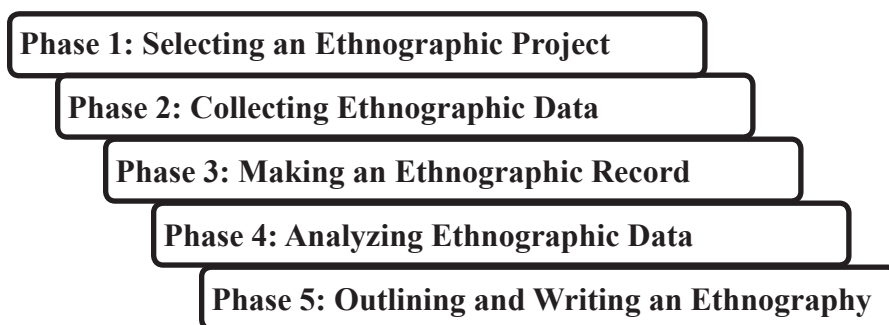


Figure 1. The Five Main Stages of the Study.

The stages are based from the ethnographic research cycle by Spradley (1980). The selection of an ethnographic project stage involved the identification of five participants based on the following criteria: (1) year level; (2) attendance; (3) number of non-school activities participated in based on the checklist; (4) relevance of the non-school activities and displayed behavior in the conduct of the study; (5) willingness of the participants to join in the said study. Purposive sampling was used.

Furthermore, the consent of five (5) participants as well as that of their parents were considered prior to the conduct of the study. They were requested to accomplish a consent form. Also, the participants were assured of their complete anonymity.

Triangulation by method (Denzin, 1970) was employed. The data were collected through immersion with participant observation, in-depth interview, and journal writing. Hence, the primary sources of the data included transcript of the interviews with the participants, observation or field

notes, and participants' journals. The data were analyzed based on Spradley's Developmental Research Sequence or DRS (1980; Dennis, Lee, & Joshi, 2011) analytic processes: domain, taxonomic, componential, and thematic.

The domain analysis included the identification of the semantic relationships salient to the participants' responses and activities, search for connections, patterns, and themes within the domains as well as between the domains, identification of the included terms that fit the given semantic relationships, and identification of the terms that informed critical thinking skills. These terms were highlighted in the transcripts of the interviews.

Moreover, the abbreviated codes of few letters were also indicated on the transcripts of the interviews to preserve the responses of the participants. JM was used for James, JN for Jane, JL for Juliana, MR for Mark, and MV for Marvin. In this stage, related terms were also collated and lumped together.

Taxonomic analysis included deeper analysis of the structures toward the development of a hierarchy of terms associated with each cover term for the identified domains. In this process, the activities that flourished the critical thinking skills of the absentee students were identified.

Furthermore, componential analysis focused on the ways on how a particular skill was developed. The differences on the ways of acquisition or development of the different critical thinking skills along the varied non-school activities were given into consideration. Hence, in this stage, the ways on how the absentee students developed their critical thinking skills were revealed.

Finally, thematic analysis focused on the identification of the cultural patterns implicit in the naturally occurring semantics of the participants' community. The major themes were further synthesized within and across the data to illustrate important aspects of the cultural milieu and to come up with the main theme that informed how the critical thinking skills of the students were influenced by the community.

Results and Discussion

The study of the critical thinking skills developed by the absentee students- James, Jane, Juliana, Mark, and Marvin (pseudonyms) – in non-school activities revealed the following findings.

Critical Thinking Skills in Non-school Activities

The absentee students manifested critical thinking skills as they engaged in non-school activities. The activities may be different from each other, but the emerging themes in the analysis reveal that the absentee students manifested the interpretation, analysis, inference, explanation, and self-regulation skills. The following entries include the examples of students' manifestation of these skills.

Interpretation. Interpretation sub skills that were shown by the absentees were: categorizing, applying alternatives in communicating measurement, decoding values and figures through estimation and representation, and clarifying quantities.

Categorizing. Jane grouped the cards by design in playing *Tong-its* as shown in Figure 2. She shared, “*Gahampang-hampang magpangbuobuo sang mga set. Pareho ang mga bulak nila (cards), parehas ambi ang pagpasunod. Parehas ambi kwan... alas-dos-tres nga mga balunggay, pakang. Dapat mapasunod na sila tapos dapat parehas bulak. Pwede man nga indi pareho bulak, pareho ang ila numero. [We play by forming sets. They (card) have the same flowers, have the same order. Like for example... one-two-three of clubs and spades. They should be orderly arranged and have the same design. It is also okay if they have different designs as long as they have similar numbers.]*”



Figure 2. Jane while Playing *Tong-its*: Jane categorizes the cards while she plays *Tong-its* with her cousins.

Applying alternatives in communicating measurement. Mark interpreted and conveyed information easily using alternatives. He communicated the amount involved as he does his non-school activities like cooking rice, washing clothes, and feeding the fishes in the pond.

For instance, he used the empty can of condensed milk (shown in Figure 3) and his finger to convey information about the amount of rice and level of water, respectively. “*Gasukob ako anay (bugas)...mga lima, lima kasukob (empty can of condensed milk). Dayon butangan ka tubi, takson ka kamot kag iluto.* [I measure first (the amount of rice)... approximately five, five scoops (empty can of condensed milk). Then pour water on it, and cook it.]” When he was asked about the level of water used in cooking rice, he added, “*Asta sa una nga kurit sang kamot, sa ikatatlo (tudlo).* [Until the first line mark of the middle finger.]”

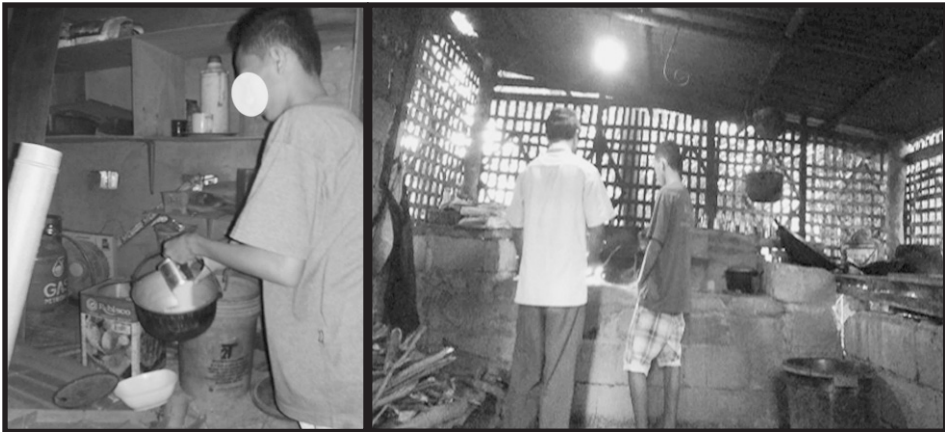


Figure 3. Mark while Cooking Rice: Mark measures the amount of rice to be cooked using the empty can of condensed milk. On the left side, I assist him in the preparation of the fire.

Decoding values and figures through estimation and representation. Jane manifested the skill in decoding in playing Lucky-9 (Figure 4). For her, decoding includes the skills in counting. She said, “*Isipon mo na siya (sum of the numbers in the cards) ...Kon magnoybi ka, ti ikaw ang daog.* [You have to count it (sum of the numbers in the cards)...If those add up to nine, you are the winner.]”

Similarly, she reflected in her journal, “...*Sa hampang nga Lucky-9, isipon mo man lang na ang 2 ka baraha nga ginhatag sa imo if 9 or indi. [... In the game Lucky-9, you just merely add the numbers reflected on the two cards given to you if their sum is nine or not.]*”

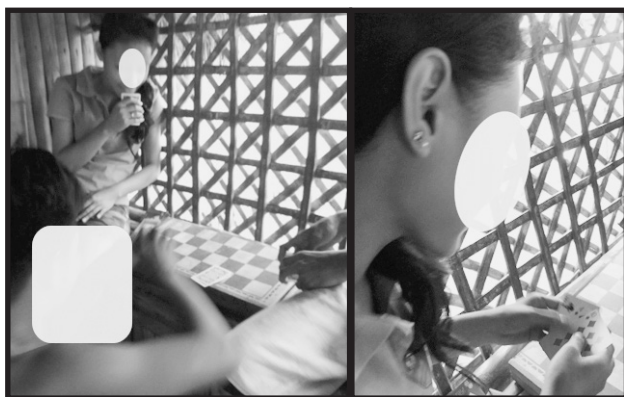


Figure 4. Jane while Playing Lucky-9: Jane enjoys decoding the sum of the figures on the cards while she plays Lucky-9 with her cousins.

She could also decode if the sum of the numbers in two cards exceeded 10. She added, “*Isipon mo man lang na (numbers on the cards) kon ang duha ka baraha mag-abot sa imo. Isipon mo man lang na kon pila. Amo na dayon. Pero kon maglapaw sa diyas...parehas ambi may mga onse, ti lapaw sa diyas ang imo nga kwan (sum). Ti, uno ka lang eh. Kon magdose, ti, dos ka lang. Pwede ka pa kahirit. [If the two cards are with you, add those (numbers on the cards). Add those to determine the sum. Then, that is it. However, if it exceeds 10...just like 11, then your sum exceeds 10. Hence, yours is equivalent to 1. If it is 12, yours is equivalent to 2. You can ask for an additional card.]*”

Moreover, Jane can identify combinations or pairs of numbers with equal significant values in the game Lucky-9. Likewise, she could identify the number in the additional card that she needs in order to win in the game. When she was asked about the number in the card that she needs in order to win the game having the cards at hand marked with 8 and 4, she replied, “*Kwan, syete. [It is 7.]*”

Clarifying Quantities. There are several ways of clarifying meaning. In mathematics, these ways may include the use of numbers, measurements, and ranks. These numbers, measurements, and ranks support some descriptions so as to convey a big picture of what a person is trying to say.

Marvin used number to clarify meaning in his non-school activities. For instance in his haircut service (Figure 5), he mentioned the word equivalent to the word “much” which he further clarified with a number. He said, “*Kon supton ko lang (income in haircut services) sir, damo na guro sir...Mga lab-ot guro 200.* [If I just save it (income in haircut service), it is probably much sir... Approximately, it reaches to 200.]” The specific amount made the statement clear.



Figure 5. Marvin Offering a Haircut Service: Marvin offers haircut services for the people in the community. He is serious while doing the task.

Analysis. The analysis subskills that were applied by the absentee students were examining quantities and identifying reasons.

Examining quantities. In playing computer games, James considered the relationship between time and number of hours of rental. Based on the relationship discovered, James was able to identify the amount he would pay for a particular number of hours of using a computer. He said, “Half hour sir, *pulo. Tapos ang isa ka oras, baynte. Tatlo (oras), magtatlo guro sir, sixty sir eh.* [Half hour is worth 10. Then, 1 hour is worth 20. Three (hours), if it reaches 3, 60 sir.]” After knowing that an hour of rental was worth twenty pesos, he applied the idea on a particular case to solve other cases.

Identifying reasons. Juliana identified some actual relationships among variables or descriptions intended to express reasons. For instance, according to her, the amount of water to be applied in cooking rice depends on the variety of rice. She said, “*Depende sir sa bugas...Kay kon kis-a may*

maluto, matig-a man mo. [It depends on the variety of rice sir... Because there are times when a rice turns harder when cooked.]” She pointed out the texture of the cooked rice as the reason behind the differences in the amount of water to be used in cooking rice.

Inference. James used his experience in cooking rice to infer what would happen to the rice if the amount of water used in cooking is increased or decreased. He used his finger to determine the level of water enough to cook the rice. He said, “*Nabutangan tubig asta di* (pointing to the first line mark from the tip of his middle finger) *kag ibutang (pot) sa tig-angan.* [Place water up to this level (pointing to the first line from the tip of his middle finger) and placed it (pot) in the pot intended for cooking.]”

When he was asked further what would happen to the rice if the water level is increased, he replied, “*Malata, mabasa, sir eh.* [Overcooked, watery sir.]” However, when he was asked the other way around, he said, “*Malagos, sir.* [Uncooked, sir.]”

Explanation. Marvin explained some mathematical processes involved as he played various games. For example in basketball, he explained the possible increase in an amount one used as bet for the game. He mentioned, “*Parehas abi, traynta bi sir. Magdaog, traynta. Mag-ikaduwa nga game, itudo mo, magiging sisinta. Tudo mo pagid sa ikatatlo, magiging one-twenty.* [For example, you have 30 sir. If you win, it (amount won) is 30. In the second game, if you will place your capital as well as the amount you have won as a deal, it (amount won) will become 60. If you will again place your capital as well as the accumulated amount you won as a deal, it (amount won) will become 120.]” Though Marvin was unaware, he had formulated a pattern which could be described by an exponential equation: $A = 30(2)^{n-1}$ where n is the number of times he placed an amount as a deal and A as the amount he won.

Self-regulation. Jane developed self-regulation skills. In particular, she developed the self-monitoring skill. She would double check the information before she did the task further. For instance, in preparing milk for her nephew, her mother and grandmother told her about the ratio of the amount of water to the number of scoops of powdered milk. However, she still checked the idea on the label indicated on the box of the milk. After that, she did the task that way. She shared, “*Sila (Mama kag Lola) naghambal na amo na (mga 210 ml kada seven scoops), tapos may sa karton man sa gatas may nakabutang man*

nga ano nga amo na ang ibutang. Ti amo na ka...amo na kadamo nasukob ko eh. [They (my mother and grandmother) said that it is (210 ml for seven scoops), then it is also indicated in the box of milk. Hence, that is, that is the amount that I measure.]”

Likewise, she wrote in her journal, “As always, *ga timpla ako gatas. Una gina measure ko ang tubig asta sa 210 ml. Kag butangan sang 7 ka scoop nga gatas kag ei shake-shake. Kay kung magtimpla ka ang tubig mo abi 150 ml tapos butangan 7 ka scoop tam-an naman na guro katam-is kay ang nakabutang sa karton sang gatas 210 ml, 7 scoop mo. Kag sa pagtimpla sang gatas may ara nga kinaalam ikaw nga matun-an, measuring, natun-an ko ang measuring sa pagtakos palang daan sang tubig ma measure ka na kag sa pagsukob sang gatas* that is also measuring. [As always, I prepare milk. First, I measure the amount of water up to 210 ml. Then, I place 7 scoops of milk and shake it. If you will prepare milk with the 150 ml amount of water mixed with 7 scoops (of milk), then, it will probably become too sweet because the instruction says 210 ml water for 7 scoops. Also, in preparing milk, I learn the skill in measuring because in determining the amount of water, you measure. Likewise, determining the amount of milk involves measuring.]”

Non-school Activities that Developed the Critical Thinking Skills of Absentee Students

Livelihood activities, household activities, and games developed the critical thinking skills of the absentee students. These activities provided them opportunities to develop their skills while accomplishing tasks.

Livelihood activities. Poverty, material lifestyle, and degree of livelihood diversification influenced the engagement of the absentee students in livelihood activities. Through years of engagement in livelihood activities, the absentee students developed some critical thinking skills. Some livelihood activities that developed their critical thinking skills are harvesting rice, taking care of animals, gardening, charcoal-making, fishing, feeding fishes, taking care of mini-store, and haircutting.

Household activities. Maintaining the household is an amusing but useful activity. It is somehow spending valuable time while accomplishing a task and learning essential life skills. It makes an individual active and involved. Although the participants were absentee students, they also had their hearts in household activities. They pleasantly took part in cooking rice, washing

clothes; taking care of younger sister, brother, niece, or nephew, fetching water, and cleaning the house. Aside from gaining pleasure in completing the task, they also gained critical thinking skills.

Games. Absentee students viewed games as stress-releasing and pleasurable activities. They became more active as they were engaged in games. The games that enticed them to join were ball games (basketball, volleyball, and soccer), card games (*Tong-its*, Lucky-9, bingo, *Pusoy Dos*, and Forty-one), board games (chess and *Dama*), racket game (badminton), computer or cellular phone games, and *Laro ng Lahi (Taksi)*.

Aside from making them physically active, the absentee students developed their mental skills through games. They found ways in order to win. They designed strategies so that they would always be at the advantage, specifically one directed towards the winning goal. They even analyzed the sequence of events. Hence, they acquired critical thinking skills.

How the Absentee Students Developed Critical Thinking Skills

Through training and observation at home. It is within the family where the skills essential in meeting the challenges in life begin to develop. Also, through the interaction with family members, a child begins to communicate his or her ideas and reactions to events he or she encounters everyday. Definitely, the absentee students learn the concepts that boost their critical thinking skills through the examples and guidance of the persons closer to their hearts: their father, mother, and siblings.

For instance, James developed the skills in examining the ratio of milk to water and identifying the reason behind the small amount of hot water used in preparing milk for his younger sister through the request and training of his mother. He said. “*Kon kis-a nasugo niya (Mama) ako matimpla ka kwan, matimpla ka gatas niya (manghod na babaye), mailis ka diaper, mapaligo... Kon kis-a natudlo-an niya man ako sir.* [Sometimes, my mother requested me to prepare the milk for my younger sister, change her diaper, and guide her in taking a bath... Sometimes, my mother also teaches me.]”

Through motivation and encouragement in school. The school is composed of caring teachers and friendly students who serve as strong foundations for learning to take place in school. It also is considered as a reservoir of thoughts, ideas, and skills essential in riding with the rapid

changing society. It is where learning begins through an encouraging and conducive environment.

For example, James started playing badminton through the encouragement of his teacher to join in the District Meet. As he continued playing, he also learned the skills in interpreting the significance of the lines to determine the attempts which are in or out, estimating the force enough to land the shuttlecock in the intended location, assessing the credibility of the statement about the result of the game, and describing the methods or strategies in order to win in the badminton game. He said, “*Ti kay nag-umpisa na siya (paghampang badminton) sir sang pag District Meet sa amon sir sa San Miguel sang ti ginkwa ako sir, ginkwa ako sir, ginkwa ako sang maestra sir. Ti amo to sige-sige na ko badminton sir. [It (playing badminton) started during the District Meet in our place in San Miguel, when I was invited to join, sir, I was invited to join by my teacher sir. From then on, I kept on playing badminton.]*”

Through observation and participation in activities in the community. The absentee students developed critical thinking skills as they socialize with other people in their community. For instance, Jane developed critical thinking skills associated in the games Lucky-9, *Tong-its*, and *Dama* through the influence of her cousins and peers. In Lucky-9, she developed the skills in categorizing the cards to determine which to include in the game, decoding the sum of the figures on the cards, examining the number of years of her involvement in the game, identifying the reason behind the preparation of a particular amount for the deal, inferring the possibilities of receiving a card that would lower the sum of the cards at hand, and describing the methods of decoding and the advantage and disadvantage of being the head of the game Lucky-9 as she went around the community. She said, “*Sa mga pakaisa ko sir kay sang sadto mahilig bala ako maglagaw. Amo na gintudlo-an nila ako. Hambal nila amo ni, isipon mo man lang na kon pila. Amo na dayon. Pero kon maglapaw sa diyas, amo na eh... Parehas ambi may mga onse. Ti, lapaw sa diyas ang imo nga kwan, ti uno ka lang eh. [From my cousins, sir, because I used to roam around before. That was, they taught me. They said that you just merely count if the two cards are with you. You just merely count for the sum. That was, but if it sums up to more than ten, that is... For example, there is a case with 11. Since it (sum of the figures on the cards) is more than 10, so it is equivalent to one only.]*”

Through the influence of social media and support of significant others. Television has served as an avenue for learning critical thinking skills. For instance, the time that James and his father had spent in watching television together was beneficial not only because they established a stronger bond, but also because James started to develop critical thinking skills, like examining and explaining ideas involved on the deal that they would agree for the winning group, examining the number of years of his involvement in the game, identifying arguments against the usual way in playing basketball to support some changes they have decided in conducting the game, and describing the methods that lead to the successful shooting of the ball.

However, James never denies that his peers have also contributed to his development of the aforementioned skills. He said, “*Mga migo ko, mga migo ko man sir. Kon kis-a sir sa paglantaw ko man sir sa TV sir eh. Maglantaw kami ka TV, ti basketball ginalantaw namon kay si Papa mahilig man sa basketball mo. Ti, sa amon to may ring sir, ti gabasket-basket man ako to sir eh. Tapos amo to dayon kabalo ron ako magbasket.* [(I learned from) my friends also, sir, sometimes, as I watched television, sir. Every time we watch television shows, we watch basketball game because my father is interested in basketball. Also, in our place there is a ring, so I also play basketball there. Hence, I learned how to play basketball.]”

Furthermore, the absentee students also learned critical thinking skills based on the four key components of Bandura’s (1977) Observational Learning: attention processes, retention processes, motor reproduction processes, and motivational processes. They consider their parents, siblings, grandparents, aunts, uncles, classmates, friends, and television icons as models after whom they pattern their ways in accomplishing the task. They retain the information and ways gathered in accomplishing the task, enact these ways, and do the task several times within a particular degree of motivational force.

Moreover, this study also confirmed Dewey’s (1938) Experiential Learning. The absentee students learned critical thinking skills as they engaged themselves in the activity. For example, Jane recognized the appropriate ratio of the amount of rice in can to the amount of water in can because she was engaged in cooking rice. Her first-hand experiences in particular activity had honed her critical thinking skills in concepts involving ratio.

Conclusions

In view of the foregoing findings of the study, the following conclusions were drawn.

Non-school activities like livelihood activities, household activities, and games develop the critical thinking skills of the absentee students. These activities enable them to think, to find solutions to some problems encountered, and to search for the most efficient ways of accomplishing tasks. Similarly, the accomplishment of these activities embeds the abilities and skills of the students to decide and reflect on how things are done. These activities also give opportunity for the students to socialize with others and react to their ideas and practices.

Significant persons in the community such as parents, siblings, grandparents, friends, and peers can influence the practices and the ways of the students in accomplishing a task. They also contribute to the development of the skills of the students. Definitely, they are the persons, with whom the students spent most of their time.

The students may follow whatever practices they have witnessed. Similarly, the students may opt to consider them as models most especially if the students found their practices satisfying. In addition, the power of intimacy contributes to the development of the shared practices and skills of the cultural group.

Critical thinking skills related to mathematics can be developed by establishing the link between the mathematics concepts and community practices. If the students have developed a kind of awareness of the use or existence of mathematics concepts and principles in their daily practices, they may interpret, examine, and evaluate their accomplishments and experiences with some mathematical notions.

Furthermore, the students can easily learn critical thinking skills once they are taught within their context. If the students are familiar with a situation, then it is easy for them to learn the skills associated with it.

Recommendations

The administrator may encourage the teachers to consider the non-school activities of the absentee students in designing instructional materials appropriate for them. The mathematics teachers may utilize students' non-school activities in designing instructional activities that address the concepts and skills that they missed during the classroom instruction. Moreover, the instructional materials designed based on the students' non-school activities may also be used by the teachers to make introduction of math concepts more interesting and familiar. Lastly, research practitioners may design instructional materials patterned from students' non-school activities and test their effectiveness to dig deeper knowledge about the critical thinking skills and mathematics principles available in the community. The continuous method of searching and bringing knowledge from the community into the classroom instruction can lead to better education and improve students' regard to education.

References

- Association of American Colleges and Universities (2005). *A preliminary report on student achievement in college*. Retrieved from http://www.aacu.org>LEAP_Report_2005
- Bandura, A. (1977). *Social learning theory*. Englewood Cliffs: Prentice Hall.
- Dennis, B., Lee, J. & Joshi, V. (2011). Progressing through the haze in science and mathematics education research: Contemporary use of Spradley's qualitative inquiry in two case studies. *International Journal of Qualitative Methods*, 10(1), 42-56 (Original work published 2010). Retrieved from <http://www.creativecommons.org/licenses/by2.0>
- Denzin, N. K. (1970). *The research act in sociology*. Chicago: Aldine.
- Department of Education. (2013). *K to 12 curriculum guide (mathematics)*. Retrieved from <http://www.lrmids.deped.gov.ph/download/3273>
- Dewey, J. (1938). *Experience and education: The meaning of purpose*. London: Sage.
- Facione, P. A. (2013). *Critical thinking: What it is and why it counts*. Mibrae, CA: The California Academic Press.
- Hammersley, M., & Atkinson, P. (2007). *Ethnography principles in practice*. Great Britain: The Cromwell Press.
- Scott, C. L. (2015). *The future of Learning 2: What kind of learning for the 21st Century?* Retrieved from <http://www.unesdoc.unesco.org/images/0024/002429/242996E.pdf>
- Spradley, J. P., (1980). *Participant observation*. New York: Holt, Rinehart, and Winston.