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Classroom Management Approach Preferences of the Diverse Mathematics Learners

ABSTRACT: *Classroom management is considered as one of the most important aspects of teaching and a serious concern for teachers. Indigenous and non-indigenous students learn in different manner and need to manage differently. This diversity in learning styles calls for a variety of approaches to classroom management. This study is anchored with the seven primary classroom management approaches: Assertive, Business-Academic, Behavioral-Modification, Group Managerial, Group Guidance, Acceptance, and Success. This is a descriptive correlational research. There were five of R. Likert (1932)-scale questions that correspond in each approach needed to be rated by the freshmen students in State University, who are enrolled in their Mathematics class. H. Cramer (1946) of V was used to determine the association of the most preferred classroom management preferences among indigenous and non-indigenous Mathematics learner. The most preferred Classroom Management Approach of indigenous student is the Business-Academic approach, while the non-indigenous student is the Success approach. The results will help create a positive classroom climate for effective teaching and learning process for better understating in Mathematics appropriate to the indigenous and non-indigenous learners in Mathematics.*

KEY WORDS: *Indigenous Student; Non-Indigenous Student; Mathematics Learners; Classroom Management Approaches.*

INTRODUCTION

Given the increasing diversity of our classrooms, a lack of multicultural competence that novice teachers can exacerbate the difficulties with classroom management. Behavioral concern is the second most significant concern in classroom management (AEU, 2006; Egeberg, McConney & Price, 2016; and Ocampo, Jr., Ocampo & Cruz, 2018); and the most critical competency area for all Professors since they are related to students' success in Mathematics (Murray, Murr & Rabiner, 2012; Suviste, 2015; and Ocampo, Jr., Ocampo & Cruz, 2018). Good classroom management strongly influences academic learning (Good, & Grouws, 1979; Falsario, Muyong & Nuevaespaña, 2014; and Mastul & Hajilan, 2017). Moreover, teachers most significant job is managing the classroom effectively, which has the largest effect on student achievement (Mulford, 2003;

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Dasaradhi, Ramakrishna & Rayappa, 2016; and Blazar & Kraft, 2017).

In a poorly managed classroom, students usually learn less than they should, because of discipline issues (Martin & Sugarman, 1993; Dunne *et al*., 2007; and Sun & Shek, 2012); while a well-managed classroom provides an environment that can flourish in teaching and learning (Marzano, Marzano & Pickering, 2003; MCUE, 2008; and Hannah, 2013). Classroom management continues to be a serious concern for teachers. The culturally, responsive classroom management practices included the importance and centrality of teachers' (Milner & Tenore, 2010; Hannah, 2013; and Bailey-Ramos, 2016).

Classroom management principles have implications for the learning progress of all children, especially low-performing, poor, special education, and racial/ethnic minority children (Saphier & Gower, 1997; Dunne *et al*., 2007; and Hughes & Kwok, 2007). When teachers and students come from different cultural backgrounds culturally influenced, and conflicts are likely to occur (Weinstein, Tomlinson-Clarke & Curran, 2004; Hughes & Kwok, 2007; and Alsubaie, 2015).

CRCM (Culturally Responsive Classroom Management) is a pedagogical approach in running a culturally responsive classrooms that will provide equitable opportunities in the service of social justice (Weinstein, Tomlinson-Clarke & Curran, 2004:27; MCUE, 2008; and Dahlgren, 2015). Aside from psychological factors, classroom management for indigenous students, who are culturally different, is a challenge for some teachers (Mulford, 2003; Partington, 2006; and Belecina & Ocampo, Jr., 2016).

Indigenous and non-indigenous students learn in different manner; thus, strategies that have been successful for non-indigenous students are often ineffective for indigenous students. This diversity in learning styles calls for a variety of approaches to classroom management that would be beneficial if teachers will recognize the major interrelationship between learner's type and classroom management style (Doyle & Hill, 2008; Santoro *et al*., 2011; and Lloyd *et al*., 2015).

Indigenous learners are most at risk of performing poorly on literacy and numeracy (Jorgensen *et al*., 2010; Santoro *et al*., 2011; and Lloyd *et al*., 2015). Aboriginal students in Australia are still underperforming in Mathematics and Science (Abrams, Taylor & Guo, 2013; Sandhu, Kidman & Cooper, 2013; and Klenowski, 2018). Similar in Canada, aboriginal student achievement in K-12 (Kindergarten through 12th Grade) Mathematics courses is significantly lower than those of non-aboriginal students. It is clear that indigenous learners tend to have poorer educational outcomes than non-indigenous learners (*cf* Neel, 2007; Sterenberg & McDonnell, 2010; and Babaee, 2011).

In the Philippines, Mathematics performance of the indigenous learners, like the Aetas, is lower than the non-indigenous learners. However, these findings of the study showed the poor condition of the Mathematical ability of indigenous learners for some reasons. It, further, point out the effect of classroom management by the teacher to indigenous learners as key factor to their improvement (Ibañez, 2014; Sarra & Ewing, 2014; and Sicat & David, 2016).

Classroom management executed by Teachers (Professors) belonging to an indigenous group of a student play a vital role in their ways and styles of teaching-learning process is given importance. Their existence as Mathematics teachers is a serious concern in the expedition of Math learning and upgrading of student's Mathematical achievement (Timperley *et al*., 2007; Blazar & Kraft, 2017; and Guerriero *et al*., 2018).

Different approaches to classroom management discussed by Allan C. Ornstein (1995), a Professor of education, former Fulbright-Hayes Scholar, in government and education agencies, and author of books on education and social issues provide various ways to handle different types of learners, like assertive, business-academic, behavioral modification, group managerial, group guidance, acceptance, and success approach are grounded in research and are applicable to classrooms. They share common features and differ as to the relative importance of prevention and intervention, degree

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of control and supervision (*cf* Ornstein & Lasley, 1990; Ornstein, 1995; and Ornstein & Levine, 2008).

Instructional effectiveness and classroom management has an interactive relationship that increases the chance students to participate in class discussion and learn more, likewise if the teacher initiates his/her desired classroom management without considering student's choice may lessen the motivation of students to learn and hamper the accumulation of knowledge (Marzano, Marzano & Pickering, 2003; Macías & Sánchez, 2015; and Sieberer-Nagler, 2016).

Teachers of indigenous students, who lack cultural competence, often experience problems in the classroom. The culturally, sensitive pedagogy is fairly extensive, focuses primarily on curriculum content, and teaching strategies, but does not really focus on the issue of management, as stated by Steinhardt School of Culture, Education, and Human Development, in 2008 (*cf* MCUE, 2008; Lewthwaite *et al.*, 2015; and Lloyd *et al.*, 2015).

Nonetheless, through this research, Mathematics Teachers/Professors may purposefully discover how classroom management approach is conducive to learning. They will know some insights on the paramount importance of classroom management approach in teaching Mathematics. Any modifications and improvements brought about by this research may provide the students much efficient way of learning Mathematics through their preferred Classroom Management Approach, since they are the direct recipients of the output. As parents enrolled their children in this institution, through this study, they will come to know that children are given of much quality education (Marzano, Marzano & Pickering, 2003; Macías & Sánchez, 2015; and Sieberer-Nagler, 2016).

Statement of the Problem and Definition of Terms. The major thrust of this study was to find the association of CMAP (Classroom Management Approach Preferences) of the indigenous and non-indigenous learners in Mathematics. Specifically, it sought to answer the following questions: (1) What is the ethnicity of the respondents?; (2) What is the preferred classroom management approach of the indigenous and non-indigenous learners in Mathematics?; and (3) Is there a significant association between classroom management approach preferences of the indigenous and non-indigenous learners in Mathematics?

Classroom Management – integrates teacher actions to create, implement, and maintain a positive learning environment (Timperley *et al.*, 2007; Egeberg, McConney & Price, 2016; and Brioso, 2017).

Assertive – an assertive teacher takes charge of the classroom immediately, sets the ground rules, and interacts with students in calm yet forceful way (Ornstein & Lasley, 1990; Hughes & Kwok, 2007; and Hannah, 2013).

Business-Academic – a student always wants to involve in a high degree of "time on task" and "academic engage time" (Ornstein & Lasley, 1990; Shelton-Quinn, 2009; and Riffel & Eggleston, 2019).

Behavioral Modification – a teacher employ reinforcement and punishment inside the classroom to control misbehavior (Ornstein & Lasley, 1990; Sun & Shek, 2012; and Mather & Goldstein, 2018).

Group Managerial – responding immediately to group of student misbehavior in order to prevent problems rather than having to deal with them after they emerge (Ornstein & Lasley, 1990; Marzano, Marzano & Pickering, 2003; and Sun & Shek, 2012).

Group Guidance – a student hates to be address in particular by the teacher for misbehaving and mostly prefer in group/general basis in addressing proper disciplinary action (Ornstein & Lasley, 1990; Dunne *et al.*, 2007; and Marciniak, 2015).

Acceptance – some students prefer a warm better learning atmosphere, feeling accepted by their classmates (Ornstein & Lasley, 1990; Osterman, 2000; and Bucholz & Sheffler, 2009).

Success Approach – other students would learn in a more permissive environment, where they can exercise their freedom to choose and to make decisions (Ornstein & Lasley, 1990; Churchill, 2005;

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and Lyons, Ford & Arthur-Kelly, 2011).

Indigenous Learners – refers to a group of people or homogenous societies identified by self-ascription and ascription by others, who have continuously lived as organized community with 100% pure blood of ethnicity (Peralta, 2003; Molintas, 2004; and Reyes, Mina & Asis, 2017).

Non-Indigenous Learner – a student who belongs to majority ethnic group and whose parents are both non-indigenous (Lewthwaite *et al*., 2015; Maestri, 2017; and Klenowski, 2018).

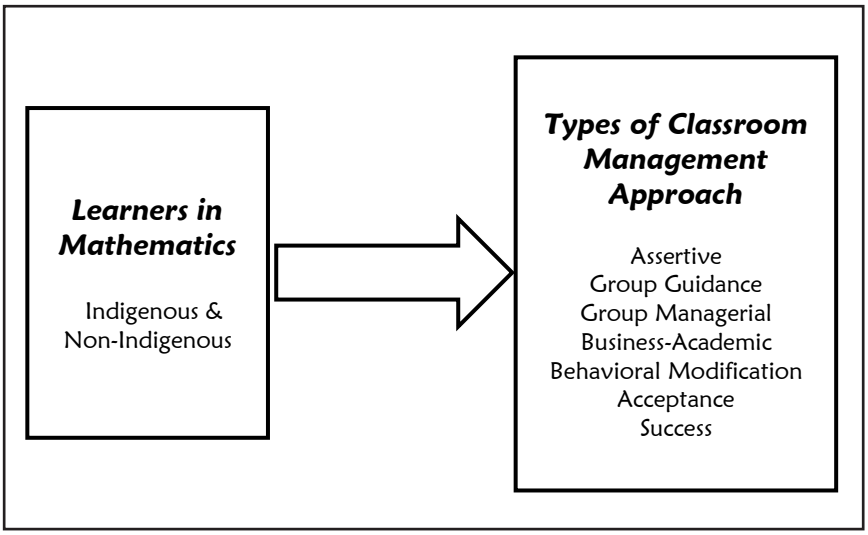

Figure 1:
The Research Paradigm

The respondents involved were categorized into two groups among freshman indigenous students coming from eleven ethnic groups: the Kankanaey, Kalanguya, Yogad, Gaddang, Itawes, Itneg, Ibalon, Tuwali, Ayangan, Kalinga, and Ybanag; and the second group are the non-indigenous students. Both types of students are enrolled in a Mathematics in the Modern World class in a State Universities found Northern Luzon, Philippines. See figure 1.

This study is anchored to the principles and arguments on the seven primary classroom management approaches discussed and defined by A.C. Ornstein & T.J. Lasley (1990), in their book entitled *Strategies for Effective Teaching*. The following are: *Assertive*, *Business-Academic*, *Behavioral-Modification*, *Group Managerial*, *Group Guidance*, *Acceptance*, and *Success Approaches* (Ornstein & Lasley, 1990). The most preferred classroom management approaches of the indigenous and non-indigenous learners in Mathematics will be revealed and their significant association will be established.

METHODS

The major thrust of this study was to find out if there is a significant association between CMAP (Classroom Management Approach Preferences) of the freshmen students who are indigenous and non-indigenous learners in Mathematics. Responses to questions were numeric in nature having the characteristic of a quantitative research; thus, a descriptive method was used in this study, specifically the use of survey and correlation techniques. Correlation techniques were designed to determine the extent to which the different variables are related to each other in the population interest. It ascertains how much variation is caused by one variable in relation to the variation caused by other variable (Williams, 2007; Sarra & Ewing, 2014; and Sullivan, 2018).

The respondents were selected through random sampling, specifically lottery method, of freshmen students enrolled in Mathematics in the modern world. The stratified proportional random sampling was considered with 5% margin of error in each stratum to identify the respondent. There were a total of 165 freshmen: there were 32 indigenous and 133 non-indigenous learners in Mathematics (Williams, 2007; Alvi, 2016; and Hayes, 2020).

This study utilizes an instrument in the form of questionnaire constructed by the researcher with a minimal division adapted to foreign authorities. It contains thirty-

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Table 1:
Perception of Students towards Assertive Approach in Managing a Mathematics Class

Item #	Items	Indigenous	Non-Indigenous	Mean
1	*The teacher enforces the classroom rules and procedures.*	3.13	2.98	3.06
8	*The teacher gives consequences for disobeying rules and communicates these consequences clearly.*	2.63	2.78	2.71
15	*The teacher gives warning to students who misbehave and then give sanction if the misbehavior continues.*	2.84	3.15	3.00
22	*The teacher displays a strict attitude towards classroom control.*	2.56	2.90	2.73
29	*The teacher encourages students' independence in Mathematics activity.*	3.13	3.18	3.16
	Unweighted Category Mean	2.86	3.00	2.93
	Weighted Category Mean	0.54	2.42	1.48
	Remarks	A	SA	A

five statements that needed to be rated by the students by R. Likert (1932)-scale by encircling the number that corresponds to their choice. There were five questions that correspond in each classroom management approach. The questions are arranged randomly in order to make the questionnaire unpredictable and free from pattern on responses (Likert, 1932; Carifio & Perla, 2007; and Derrick & White, 2017).

These responses will serve as a basis in identifying the association between CMAP and ethnicity of the learners using Harald Cramér (1946) of V in SPSS (Statistical Package for the Social Sciences). Harald Cramér (1946) of V is a statistical design used to measure the strength of the association between one nominal variable with either another nominal variable, or with an ordinal variable (*cf* Cramér, 1946; Miller *et al*., 2002; and Bergsma, 2013).

The questionnaire was developed and undergone validation by experts. The instrument is directly administered at different times the respondents are available. Most of the responses were gathered during their vacant time to ensure academics will not be sacrifice and greater time will be spent in answering the questionnaire. Maximum assistance to every respondent was given by the researchers to those with comprehension difficulty to ensure that all their responses will lead to what they really prefer (Williams, 2007; Bolarinwa, 2015; and Krosnick *et al*., 2015).

RESULTS AND DISCUSSION

What is the Ethnicity of the Respondents? There were 133 (80.61%) non-indigenous students and 32 (19.39%) indigenous students randomly selected. There were eleven ethnic groups from the 32 respondents. The largest number of respondents came from the ethnic group of Ybanag with 13 (40.63%). While the Gaddang has 4 (12.5%), followed by the Kankanaey with 3 (9.38%), and the Yogad and the Itneg has 2 each (6.25%). The least number with only one respondents were from the ethnic groups of Itawes, Ibalon, Tuwali, Ayangan, Kalinga, Kalanguya, Kankanaey-Itneg, and Gaddang-Ibanag.

The smaller number of indigenous students compared to non-indigenous students was attributed to the fact that they belong to the minor sector of the society having a small population in a certain place and belong to the mainstream.

What is the Preferred Classroom Management Approach of the Indigenous and Non-Indigenous Mathematics Learners? It will be analysed pertaining of: (1) *Assertive Approach;* (2) *Business-Academic Approach;* (3) *Behavioral Modification Approach;* (4) *Group Managerial Approach;* (5) *Group Guidance Approach;* (6) *Acceptance Approach;* (7) *Success Approach;* and (8) *Classroom Management Approach Preference in Mathematics of Freshman Students.* Each explanation is as following here:

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Table 2:
Perception of Students Towards Business-Academic Approach in Managing a Mathematics Class

Item #	Items	Indigenous	Non-Indigenous	Mean
2	*The teacher emphasizes organization of academic works.*	3.31	3.17	3.24
9	*The teacher explains clearly to students work assignments, features of the work, standards to be met, and procedures.*	3.13	3.16	3.15
16	*The teacher monitors first the work of the students from time to time in group then in individual basis to encourage students to keep working.*	2.97	3.12	3.05
23	*The teacher records strictly every single score obtain by his students.*	2.97	2.98	2.98
30	*The teacher gives assignment from time to time to supplement student's learning.*	3.09	2.95	3.02
	Unweighted Category Mean	3.09	3.08	3.09
	Weighted Category Mean	0.60	2.48	1.54
	Remarks	SA	SA	SA

Firstly, *Assertive Approach*. As seen in table 1, all the respondents rated item #22: *The teacher displays a strict attitude towards classroom control*, with the lowest mean of 2.78 for the non-indigenous students and the second lowest mean with 2.56 by the indigenous students. Item #8: *The teacher gives consequences for disobeying rules and communicates these consequences clearly*, has the lowest mean from indigenous students which is 2.63 and second the lowest mean of 2.78 from the non-indigenous students. This means that both type of freshmen students were not in favor in giving consequences for disobeying classroom rules during their Mathematics class. See table 1.

This is attributed to the fact that most students are not well-convinced with teachers who manage the classroom during Mathematics class in a strict and less permissive manner. Anxiety in Mathematics is also attributed not only in the nature of the subject, but also with the teachers' behavior towards classroom control. Furthermore, J. Martin & J. Sugarman (1993), and other scholars, revealed that students usually learn less than they should, because of discipline issues (*cf* Martin & Sugarman, 1993; Sheryl *et al*., 2014; and Rahimi & Karkami, 2015).

On the other hand, item #29: *The teacher encourages students' independence in Mathematics activity*, received the highest rating on both indigenous and non-indigenous students with a mean of 3.13 and 3.18 respectively, and a mean of 3.16 as perceived by all the respondents. It can be inferred that most of the students were confident with their solution to a certain type of problem. It may be noted that indigenous students agree with the use of assertive approach in Mathematics class.

However, the combined unweighted and weighted category means for the indigenous and non-indigenous students falls under agree. This is attributed to the fact that students at some point permit the use of a teacher centered set up of classroom during a Mathematics class (*cf* Mpho, 2018; Ocampo, Jr., Ocampo & Cruz, 2018; and DAE, 2019).

Secondly, *Business-Academic Approach*. Table 2 revealed that all respondents rated item #2: *The teacher emphasizes organization of academic works*, with the highest mean of 3.31 for indigenous students and 3.17 for non-indigenous students. This will affirm the reason that Mathematics being a logical subject must be thought in a systematic way to be understood by learners. See table 2.

Item #9: *The teacher explains clearly to students work assignments, features of the work, standards to be met, and procedures*, on the other hand, received the second highest mean score of 3.13 and 3.16 from indigenous students and non-indigenous students respectively with 3.15 mean score as perceived by all the respondents. Still, this has something to do with the nature of

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Table 3:
Perception of Students towards Behavioral Modification Approach in Managing a Mathematics Class

Item #	Items	Indigenous	Non-Indigenous	Mean
3	*The teacher rewards students who listen during math class discussion and punishes those inattentive ones.*	2.15	2.54	2.35
10	*The teacher calls inattentive students to recite.*	2.75	2.92	2.84
17	*The teacher gives incentives to students who recite in class such as points.*	3.22	3.17	3.20
24	*The teacher disregards students past experiences and emphasizes on motivation.*	2.91	2.94	2.93
31	*The teacher deducts points for inappropriate behavior.*	2.22	2.36	2.29
	Unweighted Category Mean	2.65	2.79	2.72
	Weighted Category Mean	0.51	2.25	1.38
	Remarks	A	A	A

Mathematics as a discipline that even the communication of different types of tasks to the students must be in an orderly manner.

It can be thought that students least preferred for their Professor to focus on their scores in every written work. This is supported by the lowest rate of item #23: *The teacher records strictly every single score obtain by his student*, among the items under Business-Academic approach with 2.98 mean as perceived by all the respondents. It is one of the lowest items rated by indigenous students as well with only 2.97 mean and second lowest item as perceived by non-indigenous students with 2.98 mean.

Moreover, non-indigenous students are least in favor with Mathematics Professors, who often give assignments in every lesson tackled. This is evident with item #30: *The teacher gives assignment from time to time to supplement student's learning*, with 2.95 mean, the lowest among the items rated by the non-indigenous students.

It may be noted that indigenous students strongly agree with the use of Business-Academic approach in a Mathematics class. This was affirmed with the study of Seda Yaşar (2008), and other scholars, that primary school teachers prefer to use student centered management approach rather than teacher-centered approach. That is teachers' management approaches are consistent with the constructivist instruction (Garrett, 2008; Yaşar, 2008; and Mpho, 2018). There are several management techniques (binders/ notebooks, note-taking, and homework policies) proven to be successful in the classroom to increase student motivation, success, and confidence in the classroom (Kobus, Maxwell & Provo, 2008; Igbinoba & Marvelous, 2015; and Mpho, 2018).

Thirdly, *Behavioral Modification Approach*. As seen in table 3, respondents rated item #17: *Teacher gives incentives to students who recite in class such as points*, with the highest mean 3.20 as perceived by all the respondents, 3.22 and 3.17 for indigenous and non-indigenous students respectively. This means that even at their freshmen days as college students, they are still encourage to learn by extrinsic motivation, such as extra points for the extra effort they exert on learning Mathematics.

Consequently, the reverse manner of giving point for good behavior, the deduction of points for inappropriate behavior, is perceived by most respondents as least favorable in a Mathematics class. This is reflected by item #31: *The teacher deducts points for inappropriate behavior*, with the lowest mean score of 2.29 as perceived by all the respondents. It also marked the lowest rating for non-indigenous students with 2.36 mean and second lowest item rated by non-indigenous students with 2.22 mean. See table 3.

It may be noted that both indigenous and non-indigenous students agree with the use of Behavioral Modification approach in a Mathematics class. Furthermore, Behavioral Modification approach has 2.72 unweighted category mean and 1.38 weighted category mean as perceive by all the respondents. This implies that the utilization of Behavioral

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Table 4:
Perception of Students towards Group Managerial Approach in Managing a Mathematics Class

Item#	Items	Indigenous	Non-Indigenous	Mean
4	*The teacher makes sure that the students understand the topic well before proceeding to the next lesson.*	3.06	3.08	3.07
11	*The teacher responds immediately to group student behavior that might be inappropriate or undesirable like creating unnecessary noise.*	3.00	3.14	3.07
18	*The teacher avoids interrupting students when they are busy doing work.*	2.75	3.08	2.92
25	*The teacher monitors student's class work by walking around their seats.*	3.06	3.11	3.09
32	*The teacher always able to meet his students even if he is busy.*	2.72	2.89	2.81
	Unweighted Category Mean	2.92	3.06	2.99
	Weighted Category Mean	0.57	2.47	1.52
	Remarks	A	SA	A

Modification approach in a Mathematics class must be of moderate level.

Novice teachers identified behaviour management as the second most significant concern, after workload as cited by the AEU (Australian Education Union) in 2006, behaviour problems in the classroom as a significant factor in the stress and burnout for both novice and experienced teachers (*cf* Ingersoll, 2002; Ingersoll & Smith, 2003; and AEU, 2006).

Fourthly, *Group Managerial Approach*. In table 4, *The teacher monitors student's class work by walking around their seats*, item #25, topped all other item with 3.06, 3.11, and 3.09 means as perceived by indigenous students, non-indigenous students, and both category of respondents respectively. This is associated with the fact that students still need assistance from their Mathematics Professor, when solving problems at some point. Mathematics is perceived as difficult subject by many students that's why the continuous monitoring of the Professor helps them to overcome some difficulties immediately (Dowker, 2004; Belecina & Ocampo, Jr., 2016; and Ocampo, Jr., Ocampo & Cruz, 2018). See table 4.

Very near to the mean of item #25 is the mean of item #4: *The teacher makes sure that the students understand the topic well before proceeding to the next lesson*, and item #11: *The teacher responds immediately to group student behavior that might be inappropriate or undesirable like creating unnecessary noise*. Item #4 has the mean of 3.06, 3.08, and 3.07 as perceived by indigenous students, non-indigenous students, and both category of respondents respectively.

As mentioned earlier, Mathematics being perceived as a difficult subject by many students needs to be fully understood well by explaining each lesson clearly. There are also lessons in Mathematics that are prerequisite in other topic that's why moving to the next lesson where students understood the prerequisite is a key to understand the lesson that follows (Dowker, 2004; Belecina & Ocampo, Jr., 2016; Acharya, 2017; Ocampo, Jr., Ocampo & Cruz, 2018; and Li & Schoenfeld, 2019).

On the other hand, item #11: *The teacher responds immediately to group student behavior that might be inappropriate or undesirable like creating unnecessary noise*, has the mean of 3.00, 3.14 and 3.07 as perceived by indigenous students, non-indigenous students, and both category of respondents respectively. This is attributed to the changing environment of classroom as one move from secondary to tertiary school. Students become mature and understand the conventions of a school as they step on higher education.

Indigenous and non-indigenous students both give the lowest mean to item #32: *The teacher always able to meet his students*

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Table 5:
Perception of Students towards Group Guidance Approach in Managing a Mathematics Class

Item#	Items	Indigenous	Non-Indigenous	Mean
5	*The teacher allows the students to learn to work in group.*	3.38	3.22	3.30
12	*The teacher always sees the root cause of the difficulty of a child by attending to his/her past problems.*	2.44	2.89	2.67
19	*The teacher tries to balance too easy or too difficult classroom work.*	2.91	3.14	3.03
26	*The teacher encourages peer discussion in every lesson.*	3.00	3.02	3.01
33	*The teacher guides students in group basis.*	3.22	3.11	3.17
	Unweighted Category Mean	2.99	3.08	3.04
	Weighted Category Mean	0.58	2.48	1.53
	Remarks	A	SA	SA

even if he is busy, with 2.72, 2.89, and 2.81 mean as perceived by indigenous students, non-indigenous students, and both category of respondents respectively. This depicts that it is just fine for the students for their Mathematics Professor to attend first his other obligation, such as meeting and spare that time to them for their vacant to be utilize in other matter, be it academic task or co-curricular in nature (*cf* Acharya, 2017; Ocampo, Jr., Ocampo & Cruz, 2018; and Li & Schoenfeld, 2019).

As a result the indigenous students agree while the non-indigenous students strongly agree with the use of GMAM (Group Managerial Approach to Mathematics) class. Overall, the respondents strongly agree with the use of Group Managerial approach. This means that students desire for an immediate responding Professor to whatever circumstances inside a Mathematics class (*cf* Sarra & Ewing, 2014; Juarez *et al*., 2018; and Mendezabal & Tindowen, 2018).

Fifthly, *Group Guidance Approach*. Table 5 reveals that item #5: *The teacher allows the students to learn to work in group*, has the highest mean from the indigenous and non-indigenous students with 3.38 and 3.22 mean respectively and a 3.30 mean from the two category of respondents. Though it is revealed earlier that students are in favour of being independent in Mathematics activity under Assertive approach, there are still instances where students are willing to work in group in order to understand better the nature of a problem and the way to solve it through peer discussions. See table 5.

Item #12: *The teacher always sees the root cause of the difficulty of a child by attending to his/her past problems*, revealed this fact as it obtained the lowest means of 2.44, 2.89, and 2.67 from the indigenous students, non-indigenous students, and both category of respondents respectively.

The indigenous students agree with the practice of Group Guidance approach to Mathematics class. On the other hand, non-indigenous students are strongly agree. The Group Guidance approach is close to strongly agree, the unweighted and weighted category means, 3.04 and 1.53 means, for both the indigenous and non-indigenous students respectively fall under strongly agree (*cf* Sarra & Ewing, 2014; Sicat & David, 2016; and Dolatre & Ortiz-Luis, 2019).

Sixthly, *Acceptance Approach*. Table 6 shows that students mostly in favour with item #6: *The teacher gives equal opportunity for students to recite and become involved in instruction*, since it has the highest mean of 3.19 as perceived by the indigenous students, 3.29 as perceived by non-indigenous students, and 3.24 as perceive by both category of respondents.

This is supported by the claim that students always strive for self-worth and acceptance from their teachers. Furthermore, they feel that they belong in a class if they are involved in classroom activities and instruction. No one would be isolated from the class if the Professor is an observant of fairness and equality (UNESCO, 2006; Dunne *et al*., 2007; and Hurst, Wallace &

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Table 6:
Perception of Students towards Acceptance Approach in Managing a Mathematics Class

Item #	Items	Indigenous	Non-Indigenous	Mean
6	*The teacher gives equal opportunity for students to recite and become involved in instruction.*	3.19	3.29	3.24
13	*The teacher confronts immediately students who hurt other students.*	2.50	2.77	2.64
20	*The teacher makes sure that students work with other student.*	3.00	3.20	3.10
27	*The teacher considers cultural diversity as one of the major factor in Mathematics proficiency.*	3.16	3.09	3.13
34	*The teacher makes students feel confident in Mathematics.*	2.97	3.11	3.04
	Unweighted Category Mean	2.96	3.09	3.03
	Weighted Category Mean	0.57	2.49	1.53
	Remarks	A	SA	SA

Nixon, 2013). See table 6.

On the other hand, it can be inferred that both types of respondents are least in favour with item #13: *The teacher confronts immediately students who hurt other students*, with 2.50 mean as perceived by indigenous students, 2.75 as perceived by non-indigenous students, and 2.64 as perceived by both category of respondents. The indigenous students are agree with the use of Acceptance approach to Mathematics class, while non-indigenous students strongly agree with the use of such approach.

Above all, both categories of respondents strongly agree with the use of Acceptance approach. So, Acceptance approach as widely utilized in classroom management is known to be permissive to students. With this, it is apt to say that students are able to operate and learn under such approach (Ornstein & Lasley, 1990; Osterman, 2000; and Bucholz & Sheffler, 2009).

Seventhly, *Success Approach*. As seen on table 7, respondents has the highest mean on item #21: *The teacher encourages trial and error in solving in order for the students to learn from their mistake*, with 3.06 mean as perceived by indigenous students, 3.40 as perceived by non-indigenous students, and 3.23 as perceive by both category of students. This means that although students want their Mathematics Professor to emphasize organization of work as mentioned earlier, it is wiser to allow them solve problems using their desired method, in which they can produce the answer with great ease (*cf* SEI-DOST & MATHTED, 2011; UNESCO, 2012; and OECD/ADB, 2015).

This is also attributed to the fact that in Success approach, students are allowed to make their own decision in any undertakings such as choosing their own method of solving a problem. The Professor's task is to direct into positive outcome the failure that might be cause by their choice in order for them to learn from their mistakes (Mulford, 2003; Timperley *et al*., 2007; and Belecina & Ocampo, Jr., 2016). See table 7.

The indigenous students agree with the use of Success approach, while the non-indigenous students on the other hand strongly agree. Overall, the indigenous and non-indigenous students' perception toward Success approach lies under strongly agree with 3.07 unweighted category mean and 1.57 weighted category mean. This means that freshmen students wanted their Mathematics Professor to let them decide on any circumstances under their Mathematics class, but be guided by them in understanding with whatever result it might bring (Amato, 2004; Timperley *et al*., 2007; and Ingvarson *et al*., 2013).

Eighthly, *Classroom Management Approach Preference in Mathematics of Freshman Students*. It can be gleaned that the most preferred classroom management approach of indigenous students is the Business-Academic approach with frequency of 11. This is because of the fact stated by

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Table 7:
Perception of Students towards Success Approach in Managing a Mathematics Class

Item #	Items	Indigenous	Non-Indigenous	Mean
7	*The teacher allows students use their own solution in solving a problem.*	2.84	2.96	2.90
14	*The teacher asks students' opinion in solving problems to his students.*	3.06	3.20	3.13
21	*The teacher encourages trial and error in solving in order for the students to learn from their mistake.*	3.06	3.40	3.23
28	*The teacher demands an indefinite solution for a problem.*	2.97	3.05	3.01
35	*The teacher allows late students to enter in class.*	2.94	3.17	3.06
	Unweighted Category Mean	2.97	3.16	3.07
	Weighted Category Mean	0.58	2.55	1.57
	Remarks			

R.K. Crocker & G.M. Brooker (1986), and other scholars, that higher achievement is attained in classrooms that function in a businesslike manner, under high teacher direction, with a minimum of lost time or task disruption (Crocker & Brooker, 1986; Hughes & Kwok, 2007; and Abrams, Taylor & Guo, 2013); while non-indigenous students' most preferred classroom management approach is the Success approach with frequency of 33. See table 8.

On the other hand, both categories of respondents marked Assertive approach and Behavioral Modification approach as their least preferred Classroom Management Approach. One Indigenous Student preferred Assertive approach, while the same number of respondent from them was tallied on Behavioral Modification approach. The same equal frequency was counted for non-indigenous students with 6 respondents, who preferred Assertive approach and 6 respondents for Behavioral Modification approach.

According to L. Canter & M. Canter (1979), and other scholars, the Assertive approach is appropriate for two types of learners, immature students, and those who profit from repetition as a learning tool. This clearly explains that both categories of freshmen are now on their right level of maturity and self-control that an Assertive type of teacher would not work anymore (Canter & Canter, 1979; Ornstein & Lasley, 1990; Hughes & Kwok, 2007; Hannah, 2013; and Suviste, 2015).

With this, it is apt to claim the hypothesis on the least preferred Classroom Management of indigenous student which is the Assertive approach. However, the hypothesis on the most preferred Classroom Management of indigenous students, Acceptance approach, and the most and least preferred Classroom Management of non-indigenous students, Business-Academic and Success respectively were off beam (*cf* SEI-DOST & MATHTED, 2011; Suviste, 2015; Acharya, 2017; Brioso, 2017; and Leon, Medina-Garrido & Nunez, 2017).

Moreover, Group Managerial approach is the preference of 4 indigenous students and 20 non-indigenous students; Group Guidance approach with 3 indigenous students and 17 non-indigenous students; Business-Academic approach with 25 non-indigenous students; and Success approach with 7 indigenous students.

Is there a Significant Association between Classroom Management Approach Preferences of the Indigenous and Non-Indigenous Mathematics Learners? Table 9 supports the validity of the data tabulated and interpreted using the SPSS (Statistical Package for the Social Sciences). It has 165 respondents with 100% validity with 0% missing data. This also signifies that the sample size utilized in this study meets the required number of respondents to be processed by the SPSS, particularly the use of Harald Cramér (1946) of V, Cross Tabulation of Classroom Management Approach and the Students

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Table 8:
Frequency Distribution of Indigenous and Non-Indigenous Students' Preference in Classroom Management Approach in Mathematics

Classroom Management Approach	Frequency		Total
	Indigenous Students	Non-Indigenous Students	
Assertive	1	6	7
Business-Academic	11	25	36
Behavioral Modification	1	6	7
Group Managerial	4	20	24
Group Guidance	3	17	20
Acceptance	5	26	31
Success	7	33	40
Total	**32**	**133**	**165**

Table 9:
Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Classroom Management Approach Preference and Indigenous and Non-Indigenous Mathematics Learners	165	100.0%	0	0%	165	100.0%

Table 10:
Relation of Classroom Management Approach of the Indigenous and Non-Indigenous Students

Nominal by Nominal	Value	Approx. Sig
Cramer's V	0.15	0.71
N of Valid Cases	165	-

(Cramér, 1946; Miller *et al*., 2002; and Bergsma, 2013). See table 9.

Table 10 presents the summary of Harald Cramér (1946)'s V Measure of Association of the Classroom Management Approach preference of the indigenous and non-indigenous students. See table 10.

The value between the two variables is 0.15, means that the level of association between Classroom Management Approach and Ethnicity of Student in the society is weak and minimally acceptable. This means that there is little to nothing in terms of the relationship between the two variables correlated. The Classroom Management Approach preference of a student is not related to their Ethnicity in the Society. This implies that indigenous students in the college level are now capable of learning the way a non-indigenous student learn and they are well adapted to any classroom anagement to be utilized by their Professor. In contrary, H.C. Hill, B. Rowan & D.L. Ball (2005); L. Doyle & R. Hill (2008); and other scholars, revealed that indigenous students and non-indigenous students learn in different manner (*cf* Perso, 2003; Hill, Rowan & Ball, 2005; Doyle & Hill, 2008; Purdie *et al*., 2011; Sarra & Ewing, 2014; and Aikenhead, 2017).

The level of significance under $p < 0.05$ with 95% confidence interval level is 0.71. Meaning there is no significant relationship between Classroom Management Approach preference, whether indigenous or non-indigenous learner in Mathematics.

CONCLUSION

The most preferred CMA (Classroom Management Approach) of indigenous student is the Business-Academic, while Success approaches for the non-indigenous

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Mathematics learners. The least preferred were the Assertive and Behavioral Modification for both the indigenous and non-indigenous learners. Based from the mentioned result, Mathematics Professors must put a little emphasis in the utilization of Assertive and Behavioral Modification approach for these are sets of CMA that places greater emphasis on teacher-centered instructions. Indigenous and non-Indigenous student respondents are both classified as 21st century learners regardless of their cultural sector; therefore, a student-centered approach to classroom management were more appropriate method to used.

Mathematics Professors must place a greater emphasis on Business-Academic approach for indigenous and Success approach for non-indigenous learners. However, there was no significant association between the approaches and the ethnicity of the learners. Mathematics Professors must not consider the isolation of indigenous students in any activity, since their ethnicity does not affect their perception and attainment towards a certain CMA, rather the Professor must instill in his mind that the two types of learners learns in identical manner.[1]

References

Abrams, E., P.C. Taylor & C.J. Guo. (2013). "Contextualizing Culturally Relevant Science and Mathematics Teaching for Indigenous Learning" in *International Journal of Science and Mathematics Education*, Volume 11(1), pp.1-21.

Acharya, Bed Raj. (2017). "Factors Affecting Difficulties in Learning Mathematics by Mathematics Learners" in *International Journal of Elementary Education*, Vol.6, No.2, pp.8-15. doi: 10.11648/j.ijeedu.20170602.11.

AEU [Australian Education Union]. (2006). *Beginning Teachers List Workload, Behaviour Management, Pay and Class Size as Top Concerns*. Melbourne: Australian Education Union, Federal Office, Canberra.

Aikenhead, Glen S. (2017). "School Mathematics for Reconciliation: From a 19th to a 21st Century Curriculum". Available online at: https://education.usask.ca/documents/profiles/aikenhead/School-Mathematics-for-Reconciliation-vB11.pdf [accessed in North Luzon, Philippines: July 3, 2019].

Alsubaie, Merfat Ayesh. (2015). "Examples of Current Issues in the Multicultural Classroom" in *Journal of Education and Practice*, Vol.6, No.10, pp.86-90. Available online also at: https://files.eric.ed.gov/fulltext/EJ1081654.pdf [accessed in North Luzon, Philippines: June 15, 2019].

Alvi, Mohsin. (2016). "A Manual for Selecting Sampling Techniques in Research" in *MPRA [Munich Personal RePEc Archive] Paper*, No.70218. Available online also at: https://mpra.ub.uni-muenchen.de/70218/1/MPRA [accessed in North Luzon, Philippines: June 29, 2019].

Amato, Solange Amorim. (2004). "Improving Student Teachers' Attitudes to Mathematics". *Paper* for the 28th International Conference of the International Group for the Psychology of Mathematics Education, Volume 2, on 14–18 July, in Bergen, Norway, pp.25-32. Available online also at: https://files.eric.ed.gov/fulltext/ED489632.pdf [accessed in North Luzon, Philippines: July 3, 2019].

Babaee, Naghmeh. (2011). "Language Challenges of Aboriginal Students in Canadian Public Schools" in *First Nations Perspectives*, Volume 4(1), pp.110-130. Available online also at: https://mfnerc.org/wp-content/uploads/2012/11/7_Babaee.pdf [accessed in North Luzon, Philippines: June 15, 2019].

Bailey-Ramos, Erica. (2016). "Who Matters?: Effective Classroom Management Strategies for Multicultural Elementary Education" in *University Honors Theses*. Paper 221. Available online also at: https://pdxscholar.library.pdx.edu/cgi/viewcontent.cgi?article=1256&context=honorstheses [accessed in North Luzon, Philippines: June 8, 2019].

Belecina, Rene R. & Jose M. Ocampo, Jr. (2016). "Mathematical Curiosity, Epistemological Beliefs, and Mathematics Performance of Freshman Preservice Teachers" in *MIMBAR PENDIDIKAN: Jurnal Indonesia untuk Kajian Pendidikan*, Volume 1(1), Maret, pp.123-136. Bandung, Indonesia: UPI [Indonesia University of Education] Press.

Bergsma, Wicher. (2013). "A Bias Correction for Cramér's V and Tschuprow's T" in *Journal of the Korean Statistical Society*, Volume 42(3), pp.323-328

Blazar, David & Matthew A. Kraft. (2017). "Teacher and Teaching Effects on Students' Attitudes and Behaviors" in *Educational Evaluation and Policy Analysis*, Volume 39(1), pp.146-170. Available online also at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5602565/ [accessed in North Luzon, Philippines: June 8, 2019].

Bolarinwa, O.A. (2015). "Principles and Methods of Validity and Reliability Testing of Questionnaires Used in Social and Health Science Researches" in *Nigerian Postgraduate Medical Journal*, Volume 22, Issue 4, pp.195-201. Available online also at: http://www.npmj.org/article.asp?issn=1117-1936 [accessed

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ISSN 2621-1653 (print), ISSN 2621-3621 (online)**, and **www.journals.mindamas.com/index.php/honai

in North Luzon, Philippines: June 29, 2019].
Brioso, John Oliver P. (2017). "An e-Classroom Management System Implementation: Contextualization, Perception, and Usability" in *Review of Integrative Business and Economics Research*, Volume 6, Issue 1, pp.229-249. Available online also at: http://buscompress.com/uploads/3/4/9/8/34980536/riber_6-s1_sp_s17-011_229-249.pdf [accessed in North Luzon, Philippines: June 22, 2019].
Bucholz, J.L. & J.L. Sheffler. (2009). "Creating a Warm and Inclusive Classroom Environment: Planning for All Children to Feel Welcome" in *Electronic Journal for Inclusive Education*, Volume 2(4). Available online also at: https://corescholar.libraries.wright.edu/cgi/viewcontent.cgi?article=1102&context=ejie [accessed in North Luzon, Philippines: June 22, 2019].
Canter, L. & M. Canter. (1979). *Assertive Discipline*. Los Angeles: Canter Associates.
Carifio, James & Rocco J. Perla. (2007). "Ten Common Misunderstandings, Misconceptions, Persistent Myths and Urban Legends about Likert Scales and Likert Response Formats and their Antidotes" in *Journal of Social Sciences*, Volume 3(3), pp.106-116.
Churchill, Winston. (2005). "Managing the Classroom Environment: Leadership Means Not Having to Be Completely in Harmony with Everyone Else". Available online at: https://us.corwin.com/sites/default/files/upm-binaries/4932_Moore_Chapter_13.pdf [accessed in North Luzon, Philippines: June 22, 2019].
Cramér, Harald. (1946). *Mathematical Methods of Statistics*. Princeton: Princeton University Press.
Crocker, R.K. & G.M. Brooker. (1986). "Classroom Control and Student Outcomes in Grades 2 and 5" in *American Educational Research Journal*, Volume 23(1), pp.1-11.
DAE [Deloitte Access Economics]. (2019). *Unpacking Drivers of Learning Outcomes of Students from Different Backgrounds*. Canberra: Australian Government Department of Education. Available online also at: https://docs.education.gov.au/system/files/doc/other/dae [accessed in North Luzon, Philippines: January 15, 2020].
Dahlgren, Aaron Ross. (2015). "Culturally Responsive Classroom Management". *Unpublished Doctoral Dissertation*. Washington: Department of Teaching and Learning, Washington State University. Available online also at: https://research.libraries.wsu.edu/xmlui/bitstream/handle/2376/5506/Dahlgren_wsu_0251E_11402.pdf [accessed in North Luzon, Philippines: June 15, 2019].
Dasaradhi, K., S. Ramakrishna & D. Rayappa. (2016). "Strategies for Effective Classroom Management" in *International Journal of English, Language, Literature, and Humanities*.
Derrick, B. & P. White. (2017). "Comparing Two Samples from an Individual Likert Question" in *International Journal of Mathematics and Statistics*, Volume 18(3), pp.1-13.
Dolatre, Isobel Ranulfa S. & Maria Johanna Pia G. Ortiz-Luis. (2019). "Relevant Learning for Indigenous Filipinos" in *Childhood Explorer*. Available online also at: https://www.childhoodexplorer.org/relevant-learning-for-indigenous-filipinos [accessed in North Luzon, Philippines: January 15, 2020].
Dowker, Ann. (2004). "What Works for Children with Mathematical Difficulties?". Available online at: https://www.researchgate.net/publication/253032270_What_Works_for_Children_with_Mathematical_Difficulties [accessed in North Luzon, Philippines: July 1, 2019].
Doyle, L. & R. Hill. (2008). *Our Children, Our Future: Achieving Improved Primary and Secondary Education Outcomes for Indigenous Students*. Australia: AMP Foundation, Effective Philanthropy and Social Ventures Australia.
Dunne, Máiréad *et al*. (2007). "Effective Teaching and Learning for Pupils in Low Attaining Groups". *Unpublished Research Report*, DCSF-RR011. UK [United Kingdom]: University of Sussex. Available online also at: https://dera.ioe.ac.uk/6622/1/DCSF-RR011.pdf [accessed in North Luzon, Philippines: June 8, 2019].
Egeberg, H.M., A. McConney & A. Price. (2016). "Classroom Management and National Professional Standards for Teachers: A Review of the Literature on Theory and Practice" in *Australian Journal of Teacher Education*, Volume 41(7), pp.1-10.
Falsario, Herminia N., Raul F. Muyong & Jenny S. Nuevaespaña. (2014). "Classroom Climate and Academic Performance of Education Students". *Paper* presented at the DLSU Research Congress, organized by De La Salle University, Manila, Philippines, on March 6-8. Available online also at: https://www.dlsu.edu.ph/wp-content/uploads/pdf/conferences/research-congress-proceedings/2014/LLI/LLI-I-003-FT.pdf [accessed in North Luzon, Philippines: June 8, 2019].
Garrett, Tracey. (2008). "Student-Centered and Teacher-Centered Classroom Management: A Case Study of Three Elementary Teachers" in *Journal of Classroom Interaction*, Volume 43(1), pp.34-47. Available online also at: https://files.eric.ed.gov/fulltext/EJ829018.pdf [accessed in North Luzon, Philippines: July 1, 2019].
Good, T.L. & D.A. Grouws. (1979). "The Missouri Mathematics Effectiveness Project: An Experimental Study in Fourth-Grade Classrooms" in *Journal of Educational Psychology*, Volume 71(3), pp.355-368.
Guerriero, Sonia *et al*. (2018). "Teachers' Pedagogical Knowledge and the Teaching Profession: Background Report and Project Objectives". Available online at: http://www.oecd.org/education/ceri/Background_document_to_Symposium_ITEL-FINAL.pdf [accessed in North Luzon, Philippines: June 15, 2019].
Hannah, Ryan. (2013). "The Effect of Classroom Environment on Student Learning" in *Honors Theses*, Paper 2375. Available online also at: https://scholarworks.wmich.edu/cgi/viewcontent.

ISSN 2621-1653 (print)**, **ISSN 2621-3621 (online)**, and **www.journals.mindamas.com/index.php/honai

cgi?article=3380&context=honors_theses [accessed in North Luzon, Philippines: June 8, 2019].

Hayes, Adam. (2020). "Stratified Random Sampling" in *INVESTOPEDIA*, on March 3. Available online also at: https://www.investopedia.com/terms/stratified_random_sampling.asp [accessed in North Luzon, Philippines: March 24, 2020].

Hill, H.C., B. Rowan & D.L. Ball. (2005). "Effects of Teachers' Mathematical Knowledge for Teaching on Student Achievement" in *American Educational Research Journal*, Volume 42, pp.371-406.

Hughes, Jan & Oi-man Kwok. (2007). "Influence of Student–Teacher and Parent–Teacher Relationships on Lower Achieving Readers' Engagement and Achievement in the Primary Grades" in *Journal of Educational Psychology*, Volume 99(1), February, pp.39-51. Available online also at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2140005/ [accessed in North Luzon, Philippines: June 8, 2019].

Hurst, B., R. Wallace & S.B. Nixon. (2013). "The Impact of Social Interaction on Student Learning" in *Reading Horizons: A Journal of Literacy and Language Arts*, Volume 52(4). Available online also at: https://scholarworks.wmich.edu/reading_horizons/vol52/iss4/5 [accessed in North Luzon, Philippines: July 3, 2019].

Ibañez, Jayson C. (2014). "Knowledge Integration and Indigenous Planning in the Philippines". *Unpublished Ph.D. Thesis.* Australia: Faculty of Engineering, Health, Science, and the Environment, CDU [Charles Darwin University]. Available online also at: https://ris.cdu.edu.au/ws/portalfiles/portal/22711697/Thesis_CDU_59828_Ibanez_J.pdf [accessed in North Luzon, Philippines: June 15, 2019].

Igbinoba, O. & A. Marvelous. (2015). "The Impact of Classroom Management on Students' Academic Performance in Selected Junior Secondary Schools in Municipal Area Council, Abuja" in *International Journal of Education and Research*, Vol.3, No.9.

Ingersoll, R.M. (2002). "The Teacher Shortage: A Case of Wrong Diagnosis and Wrong Prescription" in *NASSP Bulletin*, Volume 86(631), pp.16-30. Available online also at: http://dx.doi.org/10.1177/019263650208663103 [accessed in North Luzon, Philippines: June 1, 2019].

Ingersoll, R.M. & T.M. Smith. (2003). "The Wrong Solution to the Teacher Shortage" in *Educational Leadership*, Volume 60(8), pp.30-33.

Ingvarson, Lawrence *et al*. (2013). *An Analysis of Teacher Education Context, Structure, and QualityAssurance Arrangements in TEDS-M Countries: Findings from the IEA Teacher Education and Development Study in Mathematics (TEDS-M).* Amsterdam, the Netherlands: International Association for the Evaluation of Educational Achievement (IEA). Available online also at: https://www.iea.nl/sites/default/files/2019-04/TEDS-M_Findings.pdf [accessed in North Luzon, Philippines: July 3, 2019].

Jorgensen, R. *et al*. (2010). "Challenges for Teacher Education: The Mismatch between Beliefs and Practice in Remote Indigenous Contexts" in *Asia-Pacific Journal of Teacher Education*, Volume 38(2), pp.161-175.

Juarez, Mary Jo-ann A. *et al*. (2018). "Readiness in Mathematics Flipped Classroom of Filipino Secondary School Teachers" in *International Educational Research*, Vol.1, No.2, pp.95-103. Available online also at: https://pdfs.semanticscholar.org/6b50/7d0bf0466c4dd4ed049d51e95543e1868dcc.pdf [accessed in North Luzon, Philippines: July 3, 2019].

Klenowski, Val. (2018). "Australian Indigenous Students: Addressing Equity Issues in Assessment". Available online at: https://www.qcaa.qld.edu.au/downloads/approach2/indigenous_research_klenowski.pdf [accessed in North Luzon, Philippines: June 15, 2019].

Kobus, Tina, Lee Maxwell & Jeanette Provo. (2008). "Increasing Motivation of Elementary and Middle School Students through Positive Reinforcement, Student Self-Assessment, and Creative Engagement". *Unpublished Action Research Project*. Chicago, Illinois: Field-Based Master's Program, Saint Xavier University & Pearson Achievement Solutions, Inc. Available online also at: https://files.eric.ed.gov/fulltext/ED498971.pdf [accessed in North Luzon, Philippines: July 1, 2019].

Krosnick, Jon A. *et al*. (2015). "The Future of Survey Research: Challenges and Opportunities". Available online at: https://www.nsf.gov/sbe/AC_Materials/The_Future_of_Survey_Research.pdf [accessed in North Luzon, Philippines: June 29, 2019].

Leon, J., E. Medina-Garrido & J.L. Nunez. (2017). "Teaching Quality in Math Class: The Development of a Scale and the Analysis of its Relationship with Engagement and Achievement" in *Frontiers in Psychology*, Volume 8:895 [June]. Available online also at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5487448/ [accessed in North Luzon, Philippines: July 3, 2019].

Lewthwaite, B.E. *et al.* (2015). Seeking a Pedagogy of Difference: What Aboriginal Students and Their Parents in North Queensland Say about Teaching and Their Learning" in *Australian Journal of Teacher Education*, Volume 40(5). Available online also at: http://dx.doi.org/10.14221/ajte.2015v40n5.8 [accessed in North Luzon, Philippines: June 22, 2019].

Li, Y. & A.H. Schoenfeld. (2019). "Problematizing Teaching and Learning Mathematics as 'Given' in STEM Education" in *International Journal of STEM Education*, Volume 6, Article number 44. Available online also at: https://doi.org/10.1186/s40594-019-0197-9 [accessed in North Luzon, Philippines: January 15, 2020].

Likert, R. (1932). "A Technique for the Measurement of Attitudes" in *Archives of Psychology*, Volume 140, pp.1-55.

Lloyd, N.J. *et al.* (2015). "Effective Teaching Practices for Aboriginal and Torres Strait Islander Students: A Review of the Literature" in *Australian Journal of Teacher Education*, Volume 40(11). Available online also at: http://dx.doi.org/10.14221/

ajte.2015v40n11.1 [accessed in North Luzon, Philippines: June 15, 2019].
Lyons, Gordon, Margot Ford & Michael Arthur-Kelly. (2011). *Classroom Management: Creating Positive Learning Environments*. Australia: Cengage Learning Australia Pty Limited, third edition. Available online also at: https://www.sgcs.k12.in.us/userfiles/96/Classes/280/classroom%20management%20theories%20pdf [accessed in North Luzon, Philippines: June 22, 2019].
Macías, D.F. & J.A. Sánchez. (2015). "Classroom Management: A Persistent Challenge for Pre-Service Foreign Language Teachers" in *PROFILE Issues in Teachers' Professional Development*, Volume 17(2), pp.81-99. Available online also at: http://dx.doi.org/10.15446/profile.v17n2.43641 [accessed in North Luzon, Philippines: June 22, 2019].
Maestri, Virginia. (2017). "Can Ethnic Diversity Have a Positive Effect on School Achievement?" in *Journal of Education Economics*, Volume 25, Issue 3, pp.290-303. Available online also at: https://www.tandfonline.com/doi/full/10.1080/09645292.2016.1238879 [accessed in North Luzon, Philippines: June 22, 2019].
Marciniak, Anna. (2015). "Effective Ways of Dealing with Discipline Problems When Teaching Adolescent Learners" in *World Scientific News*, Volume 7, pp.53-72. Available online also at: http://www.worldscientificnews.com/wp-content/uploads/2015/06/WSN-7-2015-53-72.pdf [accessed in North Luzon, Philippines: June 22, 2019].
Martin, J. & J. Sugarman. (1993). *Models of Classroom Management: Principles, Applications, and Critical Perspectives*. USA [United States of America]: Temeron Books, Inc.
Marzano, R.J., J.S. Marzano & D. Pickering. (2003). *Classroom Management that Works: Research-Based Strategies for Every Teacher*. USA [United States of America]: ASCD [Association for Supervision and Curriculum Development].
Mastul, Al-Rashiff H. & Kaberl O. Hajilan. (2017). "Secondary School Teachers' Classroom Management Practices: Their Implications for the Academic Performance of Grade 10 Students" in *Journal of Social Sciences (COES&RJ-JSS)*, Vol.6, No.3, pp:558-583. Available online also at: https://doi.org/10.25255/jss.2017.6.3.558.583 [accessed in North Luzon, Philippines: June 8, 2019].
Mather, N. & S. Goldstein. (2018). "Behavior Modification in the Classroom". Available online at: http://www.ldonline.org/article/6030/ [accessed in North Luzon, Philippines: June 22, 2019].
MCUE [Metropolitan Center for Urban Education]. (2008). "Culturally Responsive Classroom Management Strategies" in *Metropolitan Center for Urban Education*, Edition of October, pp.1-10. Available online also at: https://doi.org/10.1207/s15430421tip4204_2 [accessed in North Luzon, Philippines: June 1, 2019].
Mendezabal, Marie Jean N. & Darin Jan C. Tindowen. (2018). "Improving Students' Attitude, Conceptual Understanding and Procedural Skills in Differential Calculus through Microsoft Mathematics" in *Journal of Technology and Science Education*, Vol.8, No.4. Available online also at: http://www.jotse.org/index.php/jotse/article/view/356/346 [accessed in North Luzon, Philippines: July 3, 2019].
Miller, Robert L. *et al*. (2002). *SPSS for Social Scientists*. New York: Palgrave Macmillan.
Milner, H. Richard IV & F. Blake Tenore. (2010). "Classroom Management in Diverse Classrooms" in *Urban Education*, Vol.45, No.5 [September], pp.560-603. Available online also at: https://eric.ed.gov/?id=EJ894618 [accessed in North Luzon, Philippines: June 8, 2019].
Molintas, Jose Mencio. (2004). "The Philippine Indigenous Peoples' Struggle for Land and Life: Challenging Legal Texts" in *Arizona Journal of International & Comparative Law*, Vol.21, No.1, pp.269-306. Available online also at: http://www.arizonajournal.org/wp-content/uploads/2015/11/Molintas.pdf [accessed in North Luzon, Philippines: June 22, 2019].
Mpho, Otukile-Mongwaketse. (2018). "Teacher Centered Dominated Approaches: Their Implications for Today's Inclusive Classrooms" in *International Journal of Psychology and Counselling*, Volume 10(2), February, pp.11-21. Available online also at: https://academicjournals.org/journal/IJPC/article-full-text-pdf/FC6961D56085 [accessed in North Luzon, Philippines: July 3, 2019].
Mulford, Bill. (2003). "School Leaders: Challenging Roles and Impact on Teacher and School Effectiveness" in *OECD [Organization for Economic Co-operation and Development] Commissioned Paper*, on April, pp.1-65. Available online also at: https://www.oecd.org/education/school/37133393.pdf [accessed in North Luzon, Philippines: June 8, 2019].
Murray, D.W., N. Murr & D.L. Rabiner. (2012). "Preliminary Effects of the Incredible Years Teacher Training Program on Classroom Management Skills" in *Society for Research on Educational Effectiveness*.
Neel, K.I.S. (2007). "Numeracy in Haida Gwaii, BC: Connecting Community, Pedagogy, and Epistemology". *Unpublished Doctoral Dissertation*. Philippines: Simon Fraser University.
Ocampo, Jr., Jose M., Laura V. Ocampo & Melody P. Cruz. (2018). "Learning Struggles in Math and Their Behavior Manifestations among Children at Home" in *ATIKAN: Jurnal Kajian Pendidikan*, Volume 8(1), Juni, pp.1-10. Bandung, Indonesia: Minda Masagi Press, ISSN 2088-1290.
OECD/ADB [Organization for Economic Co-operation and Development/Asian Development Bank]. (2015). *Education in Indonesia: Rising to the Challenge*. Paris: OECD Publishing. Available online also at: http://dx.doi.org/10.1787/9789264230750-en [accessed in North Luzon, Philippines: July 3, 2019].
Ornstein, A.C. & T.J. Lasley. (1990). *Strategies for Effective Teaching*. New York: Harper & Row.

ISSN 2621-1653 (print)**, **ISSN 2621-3621 (online)**, and **www.journals.mindamas.com/index.php/honai

Ornstein, Allan C. (1995). *The New Paradigm in Research on Teaching*. USA [United States of America]: Loyola University Press.

Ornstein, Allan C. & Daniel U. Levine. (2008). *Foundations of Education*. Boston New York: Houghton Mifflin Company, tenth edition.

Osterman, Karen F. (2000). "Students' Need for Belonging in the School Community" in *Review of Educational Research*, Vol.70, No.3 [Autumn], pp.323-367.

Partington, G. (2006). *Better Classroom Management*. Thousand Oaks, CA: Corwin Press.

Peralta, Jesus T. (2003). "In Focus: Tenacity of Identity or Where are the People?". Available online at: https://ncca.gov.ph/about-culture-and-arts/in-focus/tenacity-of-identity-or-where-are-the-people/ [accessed in North Luzon, Philippines: June 22, 2019].

Perso, T. (2003). *Improving Aboriginal Numeracy: A Book for Education Systems, School Administrators, Teachers, and Teacher Educators*. Perth, Australia: Mathematics, Science & Technology Education Centre, Edith Cowan University.

Purdie, Nola *et al.* (2011). "Literacy and Numeracy Learning: Lessons from the Longitudinal Literacy and Numeracy Study for Indigenous Students" in *ACER [Australian Council for Educational Research] Research Monograph*, No.65. Available online also at: https://research.acer.edu.au/cgi/viewcontent.cgi?article=1006&context=acer_monographs [accessed in North Luzon, Philippines: July 3, 2019].

Rahimi, Mehrak & Fatemeh Hosseini Karkami. (2015). "The Role of Teachers' Classroom Discipline in Their Teaching Effectiveness and Students' Language Learning Motivation and Achievement: A Path Method" in *IJLTR: Iranian Journal of Language Teaching Research*, Volume 3(1), January, pp.57-82. Available online also at: https://files.eric.ed.gov/fulltext/EJ1127336.pdf [accessed in North Luzon, Philippines: October 1, 2019].

Reyes, Celia M., Christian D. Mina & Ronina D. Asis. (2017). "Inequality of Opportunities among Ethnic Groups in the Philippines" in *Discussion Paper Series*, No.42. Available online also at: https://pidswebs.pids.gov.ph/CDN/PUBLICATIONS/pidsdps1742.pdf [accessed in North Luzon, Philippines: June 22, 2019].

Riffel, Laura A. & Jessica R. Eggleston. (2019). "Evidence-Based Interventions for Classroom Management: Research to Practice". Available online at: https://www.rcboe.org/site/handlers/filedownload.ashx?moduleinstanceid=92987&dataid=102458&File [accessed in North Luzon, Philippines: January 15, 2020].

Sandhu, Satwant, Gillian Kidman & Tom Cooper. (2013). "Overcoming Challenges of Being an in-Field Mathematics Teacher in Indigenous Secondary School Classrooms" in V. Steinle, L. Ball & C. Bardini [eds]. *Mathematics Education: Yesterday, Today, and Tomorrow (Proceedings of the 36th Annual Conference of the Mathematics Education Research Group of Australasia)*. Melbourne, Victoria: MERGA [Mathematics Education Research Group of Australasia], Inc. Available online also at: https://files.eric.ed.gov/fulltext/ED572999.pdf [accessed in North Luzon, Philippines: June 15, 2019].

Santoro, N. *et al*. (2011). "Teaching Indigenous Children: Listening to and Learning from Indigenous Teachers" in *Australian Journal of Teacher Education*, Volume 36(10). Available online also at: http://dx.doi.org/10.14221/ajte.2011v36n10.2 [accessed in North Luzon, Philippines: June 15, 2019].

Saphier, J. & R. Gower. (1997). *The Skillful Teacher: Building Your Teaching Skills*. Carlisle, MA: Research for Better Teaching, Inc.

Sarra, Grace & Bronwyn Ewing. (2014). "Indigenous Students Transitioning to School: Responses to Pre-Foundational Mathematics" in *Springer Plus*, Volume 3:685 [November]. Available online also at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4447772/ [accessed in North Luzon, Philippines: June 15, 2019].

SEI-DOST [Science Education Institute – Department of Science and Technology] & MATHTED [Mathematics Teacher Education]. (2011). *Mathematics Framework for Philippine Basic Education*. Metro Manila, Philippines: Science Education Institute – Department of Science and Technology, and Philippine Council of Mathematics Teacher Educators. Available online also at: http://www.sei.dost.gov.ph/images/downloads/publ/sei_mathbasic.pdf [accessed in North Luzon, Philippines: July 3, 2019].

Shelton-Quinn, Anitra. (2009). "Increasing Positive Peer Reporting and on-Task Behavior Using a Peer Monitoring Interdependent Group Contingency Program with Public Posting". *Unpublished Ph.D. Dissertation*. Mississippi: Department of Counseling and Educational Psychology, Mississippi State University. Available online also at: http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.474.9183&rep=rep1&type=pdf [accessed in North Luzon, Philippines: June 22, 2019].

Sheryl, A.H. *et al*. (2014). "Student and School Factors Associated with School Suspension: A Multilevel Analysis of Students in Victoria, Australia, and Washington State, United States" in *Children and Youth Services Review*, Volume 36(1), January, pp.187-194. Available online also at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4028069/ [accessed in North Luzon, Philippines: October 1, 2019].

Sicat, L.V. & M.D. David. (2016). "Performance in Basic Mathematics of Indigenous Students" in *Universal Journal of Educational Research*, Volume 4(2), pp.320-325.

Sieberer-Nagler, Katharina. (2016). "Effective Classroom-Management & Positive Teaching" in English Language Teaching, Vol.9, No.1, pp.163-172. Available online also at: https://files.eric.ed.gov/fulltext/EJ1087130.pdf [accessed in North Luzon, Philippines: June 22, 2019].

Sterenberg, G. & T. McDonnell. (2010). *Learning Indigenous, Western, and Personal Mathematics from Place*. Ottawa: Canadian Council on Learning.

ISSN 2621-1653 (print), ISSN 2621-3621 (online)**, and **www.journals.mindamas.com/index.php/honai

Sullivan, Lisa. (2018). *Correlation and Linear Regression*. USA [United States of America]: Boston University School of Public Health, revised edition.

Sun, Rachel C.F. & Daniel T.L. Shek. (2012). "Student Classroom Misbehavior: An Exploratory Study Based on Teachers' Perceptions" in *The Scientific World Journal*, Volume 2012, pp.1-8. Available online also at: http://downloads.hindawi.com/journals/tswj/2012/208907.pdf [accessed in North Luzon, Philippines: June 8, 2019].

Suviste, Reelika. (2015). *Students' Mathematics Knowledge and Skills, and its Relations with Teachers' Teaching and Classroom Management Practices: Comparison between Estonian- and Russian-Language Schools*. Estonia: University of Tartu Press, originally from Ph.D. Dissertation. Available online also at: http://dspace.ut.ee/bitstream/handle/10062/48637/suviste_reelika.pdf [accessed in North Luzon, Philippines: June 8, 2019].

Timperley, H. *et al*. (2007). *Teacher Professional Learning and Development: Best Evidence Synthesis Iteration*. Wellington, New Zealand: Ministry of Education. Available online also at: http://educationcounts.edcentre.govt.nz/goto/BES [accessed in North Luzon, Philippines: June 15, 2019].

UNESCO [United Nations Education, Scientific, and Cultural Organization]. (2006). *Positive Discipline in the Inclusive, Learning-Friendly Classroom: A Guide for Teachers and Teacher Educators*. Bangkok, Thailand: UNESCO. Available online also at: https://unesdoc.unesco.org/ark:/48223/pf0000149284 [accessed in North Luzon, Philippines: July 3, 2019].

UNESCO [United Nations Education, Scientific, and Cultural Organization]. (2012). *Challenges in Basic Mathematics Education*. Paris, France: UNESCO. Available online also at: https://unesdoc.unesco.org/ark:/48223/pf0000191776_eng [accessed in North Luzon, Philippines: July 3, 2019].

Weinstein, C., S. Tomlinson-Clarke & M. Curran. (2004). "Toward a Conception of Culturally Responsive Classroom Management" in *Journal of Teacher Education*, Volume 55(1), pp.25-38.

Williams, Carrie. (2007). "Research Methods" in *Journal of Business & Economic Research*, Vol.5, No.3 [March], pp.65-72.

Yaşar, Seda. (2008). "Classroom Management Approaches of Primary School Teachers". *Unpublished M.Sc. Thesis*. Turkey: The Graduate School of Social Sciences, Middle East Technical University. Available online also at: https://etd.lib.metu.edu.tr/upload/12610051/index.pdf [accessed in North Luzon, Philippines: July 1, 2019].

ISSN 2621-1653 (print)**, **ISSN 2621-3621 (online)**, and **www.journals.mindamas.com/index.php/honai