Grade 7 Learners' Difficulties with Integers

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Abstract

This paper aimed to determine the difficulties encountered by Grade 7 Students in solving integers at Domingo Lacson National High School for the School Year 2019-2020. Variables in focus were sex, average family income, and family size, together with teacher factor, study habits, and peer support as additional key areas that were further inputted into the discussion. Data needed came from the responses of 287 subject-respondents and was later transformed into numerical codes to hasten data processing via Statistical Package for Social Sciences (SPSS). Subsequent data analysis showed that the degree of difficulties encountered by students in solving integers according to teacher factors, study habits, and peer support was largely due to the fast-paced instructional methods and lack of ample sample exercises for learners to substantially comprehend allied principles and theories. The same data also found a more pressing challenge for stakeholders to revive that waning interest in students to learn Mathematics and get motivated once more to attend their classes. Interestingly, a compelling footnote has surfaced that peer support is not fully encouraged inside the classroom. As a final point, this paper found no significant difference in the degree of difficulties of subject-respondents in solving integers in terms of the just-mentioned variable groupings. This paper calls for teachers to adjust their lesson delivery pacing, innovate their teaching styles to break the seeming learners' prejudice against the subject, and use a game-based approach to enhance engagement and learning in Mathematics by activating that peer support system in class.

Keywords: *Mathematics, integers, junior high school, learning enhancement activities*

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Introduction

Nature of the Problem

Students have always experienced difficulty with integers, whole numbers that can be negative, positive, or zero. Khalid & Embong (2020), Fuadiah & Suryadi (2017), and Stephan & Akyuz (2012) claimed that in the course of the study of mathematics, the development of the integers has always been considered a complicated endeavor for educational stakeholders.

Several past research articles detail mathematicians' struggle with integers, particularly with what it means to have numbers less than zero. In an apparent effort to remedy this problem, there were countless attempts to devise instructions on integer concepts and operations. Still, instructional success in this department has so far been elusive. Stephan and Akyuz (2012) bluntly call it troublesome.

Current State of Knowledge

Rubin et al. (2014) believed that many students enter high school level with severe gaps in their concepts and skills in mathematics. One of this basic foundational knowledge and skills is the integers, a prerequisite skill to solve. Performing operations on integers involves signs of the numbers and the signs of the required operation. Students get confused and struggle when asked to perform operations on integers. Moreover, in a study conducted on children aged 8 to 13, Grootenboer and Hemmings (2015) uncovered similar factors contributing to students' mathematics performance. The study factored in the potency of a number of mathematical affective factors and background characteristics (gender, ethnicity, and socio-economic status) on children's mathematics performance.

There appears to be a growing interest in mathematics study across all grade levels (Makonye, 2016; Soga, 2018, etc.). Back home, the dismal low scores in both quizzes and exams of Grade 7 Students at a school in a medium-sized school division in a highly-urbanized city in Central Philippines have amplified our interest in this research work.

Objectives

This paper aimed to determine the difficulties encountered by Grade 7 students in solving integers at a school in medium-sized school division in a highly-urbanized city in Central Philippines during the School Year 2019-2020.

Specifically, it sought answers to the following questions:

1.   What are the difficulties students encounter in solving integers according to teacher factors, study habits, and peer support?
2.   What are the difficulties students encounter in solving integers when grouped according to sex, family income, and family size?
3.   Is there a significant difference in the degree of difficulties students encounter in solving integers when they are grouped and compared according to the abovementioned variables?

Methods

Research Design

This paper used the descriptive research design to determine the difficulties encountered by Grade 7 Students in solving integers in Mathematics in the above-mentioned research environment for the period covered.

Subject-Respondents

Subject respondents were proportionately sampled from twenty-eight (28) sections of Grade 7 Students of the above-mentioned research environment during the School Year 2019-2020 (N=1,016; n=287).

Research Instrument

This paper used a 30-item self-made questionnaire to gather all the needed data. It was divided into two parts: Part 1 contains queries on respondents' profiles like sex, family income, and family size; Part 2 contains the questionnaire proper on students learning difficulties encountered in solving integers, which were proportionately distributed by ten items per area on teacher factor, study habits, and peer support.

Procedures

The data gathered were tallied and tabulated using the appropriate statistical tools. The raw data were transformed into numerical code guided by a coding manual. This allowed computer processing, statistical derivations, and tabular presentation. The Statistical Package for Social Sciences (SPSS) was used in the computer processing of the encoded data.

Data Collection

Prior approval was sought from the Schools Division Superintendent for the conduct of the study in the research environment. Questionnaires were thereafter administered to target respondents.

Data Analysis/Statistical Treatment

Objective no. 1, which aimed to determine the degree of difficulties encountered by students in solving integers according to the aspects of teacher factor, study habits, and peer support, used the descriptive analytical scheme and mean as its statistical tool. Objective no. 2, which determined the degree of difficulties encountered by students in solving integers when they were grouped according to sex, family income, and family size, likewise made use of the same descriptive analytical scheme and meant as its statistical tool. Finally, objective no. 3, which analyzed the significant difference, if any, in the degree of difficulties encountered by students in solving integers when they are grouped and compared according to the same variables on sex, family income, and family size, used the comparative analytical scheme and Mann-Whitney U test as its statistical tool.

The resultant mean scores were interpreted using the range score and subsequent verbal interpretation: (4.50-5.00= Very high degree; 3.50-4.49= High degree; 2.50–3.49= Moderate degree; 1.50–2.49= Low degree; and .00–1.49= Very low degree).

Results and Discussion

This section analyzes and interprets the data gathered to carry out the predetermined objectives of this study.

Profile of the Respondents

Demographic data show that 53.0% of the respondents were male, while 47.0% were female. Regarding family income, 64.5% belong to the lower income bracket (earning below Php 6,600), while 35.5% belong to the higher income bracket (earning Php 6,600 and above). Regarding family size, 52.3% fell under the category of small (below six members), while 47.7% were categorized as big (6 members and above). Overall, the results showed that most of the respondents are male, belong to a lower income bracket, and have a smaller family size.

Degree of Student Difficulties in Solving Integers based on Teacher Factor

The degree of difficulty experienced by subject-respondents registered an overall mean score of 4.68. This suggests the inability of teachers to provide sample integer problems to make students understand their lessons better. This seems to pose the highest difficulty in terms of the teacher factor. On the one hand, teachers' approachability and accommodating are two of the least difficulties experienced by learners. These teacher traits help remove students' anxiety from the teacher's side. Incidentally, the same findings were reported by Ulug et al. (2015).

Degree of Student Difficulties in Solving Integers based on Study Habits

 The degree of difficulties encountered by subject-respondents in terms of study habits recorded a mean score of 3.84 overall. This implies that students are spending less time in Math classes, which could be interpreted as a sign of diminishing interest in the subject. This means further that students, on their own, are less likely to spend critical hours reading and re-study problem-solving items to make it easier for them to understand the formula and word problems. Incidentally, the same finding was reported by Odire (2015).

Degree of Student Difficulties in Solving Integers according to Peer Support

Regarding peer support, data was recorded at a high degree of 4.11 overall. This shows that peer support through sharing of ideas is least practiced among learners. The result further reveals that most students work and study on their own without the assistance of peers, an identical finding reported by Garba et al. (2020).

Degree of Student Difficulties in Solving Integers based on Teacher Factor and Groupings by Sex

This analysis bared varying overall mean scores for both male and female counterparts at 4.66 and 4.24, respectively. Not surprisingly, this difficulty referred to here came from the same three items in the questionnaire but varied in order.

For instance, items 3, 1, and 8 posted the highest difficulty for males. These three items in the questionnaire relate to 1) needed teacher innovations in giving more samples to help male students understand the lesson, 2) teacher patience in explaining in step-by-step sequence allied theories and principles on integers, and 3) seeming lack of teacher generosity in providing extra review time and giving of pointers before the examinations. However, on the part of the females, the difficulty level came in exact order from items 8, 3, and 1 in the questionnaire. But they all relate to the same concerns regarding teacher innovations, patience, and seeming lack of teacher generosity when it comes to lesson review and giving of examination pointers, an identical finding reported by Pantziara and Philippou (2015).

In general, however, data suggest that the male group finds solving integers more difficult than the female group.

Degree of Student Difficulties in Solving Integers based on Teacher Factor and Groupings by Family Income

Table 2 summarizes the result of this particular analysis.

Table 2

Degree of Student Difficulties in Solving Integers based on Teacher Factor and Groupings by Family Income

	Items	**Lower**		**Higher**	
		Mean	Interpretation	Mean	Interpretation
1	Very patient in explaining, step by step, the theories, and principles of integers.	4.44	High Degree	4.17	High Degree
2	Helping us understand each lesson on integers by slowly, repetitively explaining.	5.00	Very High Degree	4.50	Very High Degree
3	Innovative in giving more samples to help us understand lessons on integers.	4.89	Very High Degree	4.75	Very High Degree
4	Ensure we understand the lesson by asking back questions after each discussion.	4.22	High Degree	4.42	High Degree
5	Providing us with the drill in integers before the lesson proper.	4.11	High Degree	4.50	Very High Degree
6	Cordial and accommodating.	4.33	High Degree	4.25	High Degree
7	Ready to provide coaching to low scorers/bottom performers.	4.33	High Degree	4.33	High Degree
8	Generous in providing extra review time and giving pointers on what to study before the exam.	4.94	Very High Degree	4.58	Very High Degree
9	Always asks students which part of the discussion on integers they find difficult so he can discuss it back.	4.17	High Degree	4.25	High Degree
10	Always spends time reviewing exam questions afterward.	4.39	High Degree	4.50	Very High Degree
	Overall Mean	**4.48**	**High Degree**	**4.42**	**High Degree**

In the area of the teacher factor, according to family income recorded a mean score of 4.48 and 4.42 overall for both lower-income and higher-income groups. A closer look at Table 2 shows item 2 posted the highest degree of difficulty for the lower-income group. On the part of the higher income group, the difficulty level comes from item 3. Data show that the lower income group was mainly concerned with the pacing of their Mathematics teachers, as many of them require a slower pace, and some may require additional time for their lessons to be re-explained, an identical finding reported in Paul and Ngirande (2015).

Degree of Student Difficulties in Solving Integers based on Teachers Factor and Groupings by Family Size

Table 3 presents the results of the analysis of this particular variable.

Table 3
Degree of Student Difficulties in Solving Integers based on Teachers Factor and Groupings by Family Size

	Items	Small		Big	
		Mean	Interpretation	Mean	Interpretation
1	Very patient in explaining, step by step, the theories, and principles of integers.	4.37	High Degree	4.27	High Degree
2	Helping us understand each lesson on integers by slowly, repetitively explaining.	4.84	Very High Degree	5.00	Very High Degree
3	Innovative in giving more samples to help us understand lessons on integers.	4.68	Very High Degree	4.82	Very High Degree
4	Ensure we understand the lesson by asking back questions after each discussion.	4.53	Very High Degree	3.91	High Degree
5	Providing us with the drill in integers before the lesson proper.	4.53	Very High Degree	3.82	High Degree
6	Cordial and accommodating.	4.42	High Degree	4.09	High Degree
7	Ready to provide coaching to low scorers/bottom performers.	4.16	High Degree	4.64	Very High Degree
8	Generous in providing extra review time and giving pointers on what to study before the exam.	4.79	Very High Degree	4.82	Very High Degree
9	Always asks students which part of the discussion on integers they find difficult so he can discuss it back.	4.32	High Degree	4.00	High Degree
10	Always spends time reviewing exam questions afterward.	4.63	Very High Degree	4.09	High Degree
	Overall Mean	**4.53**	**Very High Degree**	**4.35**	**High Degree**

Table 3 presents varying overall mean scores for small and big family groups at 4.53 and 4.35, respectively. The results further revealed that the highest difficulty among respondents belonging to the small family size is with the pace at which the Mathematics teachers deliver lessons. On the one hand, the respondents from bigger families indicated that some Mathematics teachers might need to provide additional exercises on integers to ensure that they are properly ready for the assessments. Incidentally, the same findings were reported by Kurgat (2014).

Degree of Student Difficulties in Solving Integers based on Study Habits and Groupings by Sex

Table 4 summarizes the result of the analysis.

Table 4
Degree of Student Difficulties in Solving Integers based on Study Habits and Groupings by Sex

	Items	Male		Female	
		Mean	Interpretation	Mean	Interpretation
1	Study Mathematics and practice on my own at home.	3.81	High Degree	3.79	High Degree
2	Use multiple references to perfectly capture and understand theories and principles of integers.	4.12	High Degree	3.71	High Degree

3	Spend more time analyzing integer-related formulas & worded problems.	3.69	High Degree	3.93	High Degree
4	Don't memorize formulas; I train myself to learn them by heart.	4.00	High Degree	3.86	High Degree
5	Participate in the class, ask questions, and volunteer to answer some questions.	4.38	High Degree	3.93	High Degree
6	Make sure that I am always present in our Math class.	4.25	High Degree	4.29	High Degree
7	Always ready to listen and participate in our Math class.	4.06	High Degree	4.36	High Degree
8	Read books and cross-reference using online resources	3.62	High Degree	3.71	High Degree
9	Consider difficult lessons in integers as challenges to improve my Mathematical skills.	3.56	High Degree	3.57	High Degree
10	Double my study time on topics that I find difficult to study	3.81	High Degree	3.64	High Degree
	Overall Mean	**3.93**	**High Degree**	**3.88**	**High Degree**

In the area of study habits according to sex recording, the overall mean scores for both male and female counterparts at 3.93 and 3.88, respectively. Results show that across gender groups, both male and female respondents indicated that participating in the class or volunteering to answer questions is a big challenge for them. This means that some learners see difficult issues and topics as it is; they cannot circumvent the situation by doing an advanced study of integer-related topics, an identical finding reported by Pantziara and Philippou (2015).

Degree of Student Difficulties in Solving Integers based on Study Habits and Groupings by Family Income

Table 5 summarizes the findings of the analysis on this variable.

Table 5
Degree of Student Difficulties in Solving Integers based on Study Habits and Groupings by Family Income

	Items	Lower		Higher	
		Mean	Interpretation	Mean	Interpretation
1	Study Mathematics and practice on my own at home.	3.67	High Degree	4.00	High Degree
2	Use multiple references to perfectly capture and understand theories and principles of integers.	3.61	High Degree	4.42	High Degree
3	Spend more time analyzing integer-related formulas & worded problems.	3.78	High Degree	3.83	High Degree
4	Don't memorize formulas; I train myself to learn them by heart.	3.72	High Degree	4.25	High Degree
5	Participate in the class, ask questions, and volunteer to answer some questions.	4.28	High Degree	4.00	High Degree
6	Make sure that I am always present in our Math class.	4.11	High Degree	4.50	Very High Degree
7	Always ready to listen and participate in our Math class.	4.06	High Degree	4.42	High Degree
8	Read books and cross-reference using online resources	3.61	High Degree	3.75	High Degree

9	Consider difficult lessons in integers as challenges to improve my Mathematical skills.	3.44	Moderate Degree	3.75	High Degree
10	Double my study time on topics that I find difficult to study	3.67	High Degree	3.83	High Degree
	Overall Mean	**3.79**	**High Degree**	**4.08**	**High Degree**

Table 5 presents varying overall mean scores for lower and higher income groups at 3.79 and 4.08, respectively. This implies that the respondents from both income brackets rarely volunteer in class to answer their lessons, and neither they tend to volunteer in class to answer the teacher's questions. Learners who are seriously thinking about improving their skills in Math subject would double their time studying and exercising, even on their own, to overcome some of the difficulties they encounter.

Degree of Student Difficulties in Solving Integers based on Study Habits and Family Size

Table 6 summarizes the result of this particular analysis.

Table 6
Degree of Student Difficulties in Solving Integers based on Study Habits and Family Size

	Items	Small		Big	
		Mean	Interpretation	Mean	Interpretation
1	Study Mathematics and practice on my own at home.	3.89	High Degree	3.64	High Degree
2	Use multiple references to perfectly capture and understand theories and principles of integers.	3.79	High Degree	4.18	High Degree
3	Spend more time analyzing integer-related formulas & worded problems.	3.68	High Degree	4.00	High Degree
4	Don't memorize formulas; I train myself to learn them by heart.	4.11	High Degree	3.64	High Degree
5	Participate in the class, ask questions, and volunteer to answer some questions.	4.00	High Degree	4.47	High Degree
6	Make sure that I am always present in our Math class.	4.06	High Degree	4.45	High Degree
7	Always ready to listen and participate in our Math class.	4.05	High Degree	4.45	High Degree
8	Read books and cross-reference using online resources	3.68	High Degree	3.60	High Degree
9	Consider difficult lessons in integers as challenges to improve my Mathematical skills.	3.42	Moderate Degree	3.82	High Degree
10	Double my study time on topics that I find difficult to study	3.53	High Degree	4.09	High Degree
	Overall Mean	**3.83**	**High Degree**	**4.04**	**High Degree**

In the area of study habits, according to family size recording, an overall mean score for both smaller and bigger family sizes at 3.83 and 4.04, respectively. This implies that learners from both smaller and bigger size of the family were having difficulties learning formulas by heart, meaning not by mere memorization. This mostly happens if learners don't understand what they are memorizing. The same findings were reported by Kloosterman (2015).

Degree of Student Difficulties in Solving Integers based on Peer Support and Groupings by Sex

Table 7 summarizes the findings of the analysis on this particular variable.

Table 7
Degree of Student Difficulties in Solving Integers based on Peer Support and Groupings by Sex

	Items	Male		Female	
		Mean	Interpretation	Mean	Interpretation
1	Sharing ideas and understanding of lessons related to integers	4.62	Very High Degree	4.09	High Degree
2	Allowing oneself support to those who don't understand the lessons quite well	4.06	High Degree	3.93	High Degree
3	Creating an active support system for one another	4.00	High Degree	3.93	High Degree
4	Not allowing a friend to be left behind in the class	3.88	High Degree	3.64	High Degree
5	Extending help with assignments and projects even outside the school	4.19	High Degree	4.07	High Degree
6	Providing strong moral support to each other	4.06	High Degree	3.64	High Degree
7	Influencing one another to study well and perform assigned tasks	4.06	High Degree	3.57	High Degree
8	Helping those who can't understand through group or cell studying	3.88	High Degree	4.04	High Degree
9	Constantly asking one another about their difficulties and challenges in understanding lessons in integers	4.12	High Degree	3.79	High Degree
10	Ensure that each one within the closed circle of peers does their homework, assigned tasks, and others.	3.94	High Degree	3.43	Moderate Degree
	Overall Mean	**4.08**	**High Degree**	**3.82**	**High Degree**

Table 7 shows the degree of difficulties encountered by students in solving integers in the area of peer support according to sex, recording an overall mean score of 4.08 for the male group and 3.82 for the female group. This implies that across gender groups, the respondent indicated that sharing ideas among peers to help each of them understand better is a challenge. This is one of the highest difficulties they are currently facing. This is particularly true if each one is working on his own and is never mindful of the needs of their peers in Mathematics, an identical finding reported by Kean (2015).

Degree of Student Difficulties in Solving Integers based on Peer Support and Groupings by Family Income

Table 8 summarizes the result of this particular analysis.

Table 8
Degree of Student Difficulties in Solving Integers based on Peer Support and Groupings by Family Income

	Items	Lower		Higher	
		Mean	Interpretation	Mean	Interpretation
1	Sharing ideas and understanding of lessons related to integers	4.39	High Degree	4.33	High Degree
2	Allowing oneself support to those who don't understand the lessons quite well	3.94	High Degree	4.08	High Degree
3	Creating an active support system for one another	4.11	High Degree	3.75	High Degree
4	Not allowing a friend to be left behind in the class	3.78	High Degree	3.75	High Degree
5	Extending help with assignments and projects even outside the school	4.06	High Degree	4.25	High Degree
6	Providing strong moral support to each other	3.89	High Degree	3.83	High Degree
7	Influencing one another to study well and perform assigned tasks	3.72	High Degree	4.00	High Degree
8	Helping those who can't understand through group or cell studying	4.00	High Degree	4.00	High Degree
9	Constantly asking one another about their difficulties and challenges in understanding lessons in integers	3.78	High Degree	4.25	High Degree
10	Ensure that each one within the closed circle of peers does their homework, assigned tasks, and others.	3.78	High Degree	3.58	High Degree
	Overall Mean	**3.94**	**High Degree**	**3.98**	**High Degree**

In the area of peer support, according to average family monthly income, recording an overall mean score of 3.94 for the lower income group and 3.98 for the higher income group. Results show that regardless of the average monthly income of the family, the respondents indicated the absence of sharing of ideas among peers and their ability to share their understanding of the subject to ensure that those who don't understand can keep up with the pace of everyone in the class, the same findings were reported in Bartolome (2017).

Degree of Student Difficulties in Solving Integers based on Peer Support and Groupings by Family Size

Table 9 summarizes the findings of the analysis on this particular variable.

Table 9
Degree of Student Difficulties in Solving Integers based on Peer Support and Groupings by Family Size

	Items	Small		Big	
		Mean	Interpretation	Mean	Interpretation
1	Sharing ideas and understanding of lessons related to integers	4.26	High Degree	4.55	Very High Degree
2	Allowing oneself support to those who don't understand the lessons quite well	3.84	High Degree	4.27	High Degree

3	Creating an active support system for one another	3.89	High Degree	4.09	High Degree
4	Not allowing a friend to be left behind in the class	3.68	High Degree	3.91	High Degree
5	Extending help with assignments and projects even outside the school	3.89	High Degree	4.50	Very High Degree
6	Providing strong moral support to each other	3.79	High Degree	4.00	High Degree
7	Influencing one another to study well and perform assigned tasks	3.79	High Degree	3.91	High Degree
8	Helping those who can't understand through group or cell studying	3.79	High Degree	4.36	High Degree
9	Constantly asking one another about their difficulties and challenges in understanding lessons in integers	3.68	High Degree	4.45	High Degree
10	Making sure that each one within the closed circle of peers does their home work, assigned tasks, and others.	3.53	High Degree	4.00	High Degree
	Overall Mean	**3.82**	**High Degree**	**4.21**	**High Degree**

Table 9 shows the degree of difficulties encountered by students in solving integers in the area of peer support according to family size, recorded at a high degree of an overall mean score of 3.82 for a smaller family and 4.21 for a bigger family. This implies that regardless of the size of the family, the results showed that respondents were having difficulties in sharing their ideas with peers and their ability to share their understanding of the subject to ensure that those who don't understand can keep up with the pace of everyone in the class. The same findings were recorded in the study of Chohan and Khan (2015).

Up next is an analysis of the next variable groupings.

A Comparative Analysis of the Degree of Student Difficulties in Solving Integers based on Teacher Factor, Study Habits, and Peer Support and Groupings by Sex, Family Income, and Family Size

Table 10 summarizes the result of this particular analysis.

Table 10
Difference in the Student Difficulties in Solving Integers based on Teacher Factor and Selected Variables

Variable	Category	Mean	Mann Whitney U test	*p*-value	Sig level	Interpretation
Sex	Male	4.66	48.5	0.007		Significant
	Female	4.24				
Average Monthly Income	Lower	4.48	103.0	0.828	0.05	Not Significant
	Higher	4.42				
Family Size	Small	4.53	85.0	0.390		Not Significant
	Big	4.35				

Table 10 shows the comparative analysis of the difficulties encountered by students in solving integers in the area of teacher factor according to variables. In terms of sex, the result shows that it significantly affects the difficulties encountered by students in solving integers in the area of teacher factor. This implies that the Male group has a different opinion in assessing the degree of difficulties in

Mathematics in the area of teacher factor compared to the Female group. Furthermore, the male group is likely to believe that the teacher factor affects the difficulty they encounter in Mathematics. Additionally, the result showed that the average family monthly income and size do not significantly affect the difficulties students face in solving integers in the area of teacher factor. The same findings were reported in Enu et al. (2015) study.

Difference in the Student Difficulties in Solving Integers based on Study Habits and Selected Variables

Table 11 summarizes the findings of the analysis of this particular variable.

Table 11
Difference in the Student Difficulties in Solving Integers based on Study Habits and Selected Variables

Variable	Category	Mean	Mann Whitney U test	p-value	Sig level	Interpretation
Sex	Male	3.93	98.5	0.573		Not Significant
	Female	3.88				
Average Monthly Income	Lower	3.79	83.5	0.297	0.05	Not Significant
	Higher	4.08				
Family Size	Small	3.83	87.5	0.462		Not Significant
	Big	4.04				

Table 11 shows the comparative analysis of the difficulties encountered by students in solving integers in the area of study habits according to variables. Results reveal that sex, average family monthly income, and family size do not significantly affect the difficulties encountered by students in solving integers in the study habits. Furthermore, the results showed that the respondents' opinion in assessing the degree of difficulties in terms of study habits is mostly the same throughout. Their opinions were not affected by their sex, family income, and family size; the same findings were reported by Rabia et al. (2017).

A Comparative Analysis of Student Difficulties in Solving Integers based on Peer Support and Selected Variables

Subsequent data analysis on this variable grouping showed that in terms of peer support- sex, family income, and family size do not significantly affect the difficulties encountered by students in solving integers. Respondents appear to have a uniform assessment of their difficulty in Mathematics. Incidentally, Reich (2015) recorded an analogous finding.

Conclusion

In hindsight, this paper analyzed the difficulties encountered by Grade 7 Students in solving integers at a school under a medium-sized school division in a highly-urbanized city in Central Philippines for the School Year 2019-2020. Variables in focus were sex, family income, and family size, with teacher factor, study habits, and peer support duly added to further broaden and deepen the analysis. Data needed comes from the responses of 287 subject-respondents through a self-made 30-item questionnaire that has passed the rigorous validity and reliability tests. The ensuing data analysis showed that students' difficulty in

solving integers according to teacher factors, study habits, and peer support registered at a towering mean score of 4.68 on a scale of 5. This was ostensibly caused by fast-paced instructional delivery and a lack of ample sample exercises for learners to substantially comprehend allied principles and theories. Subsequent analysis found no significant difference in the degree of difficulties of subject-respondents in solving integers on the oft-mentioned variable groupings on teacher factors, study habits, and peer support. This paper calls for teachers to adjust their lesson delivery pacing, innovate their teaching styles and instructional tools to break the seeming learners' prejudice against the subject, and use a game-based approach coupled with a peer support system to enhance engagement and learning in Mathematics.

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