

Teachers' Preventive, Supportive and Corrective Discipline Styles as Predictors of Students' Achievement in Mathematics

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Abstract

This study investigated Teachers' preventive, supportive and corrective discipline styles as predictors of students' achievement in Mathematics. Three (3) research questions and three (3) corresponding null hypotheses were raised to guide the study. The correlational research design was adopted. Multistage sampling procedure were used to select a sample of 369 participants from a population of 4783 senior secondary class two (SS11) students in the thirty-one (31) public secondary schools in Etinan Education Zone of Akwa Ibom State. Two instruments were used for data collection namely; Teachers' Preventive, Supportive and Corrective Discipline Styles Questionnaire (TPSCDSQ) and Mathematics Achievement Test (MAT). The instruments were validated by three expert from measurement and evaluation, mathematics and educational administrations unit. The reliability coefficient of 0.93 was obtained for TPSCDSQ using Cronbach alpha method while reliability coefficient value of 0.73 was obtained for MAT using Kuder Richardson 20. The data collected were analysed using regression analysis (correlation). The "r" obtained was used to answer all the research questions. However, the hypothesis were tested at 0.05 level of significance using the regression t-test for simple linear regression. Findings from the study revealed that there is a significant predictive power of teachers' preventive, supportive and corrective discipline styles on students' academic achievement in mathematics. It was recommended among others that teachers should deliberately adopt an effective style of discipline in the mathematics classroom since they can significantly predict students' academic achievement in mathematics.

KEYWORDS: Teachers, Discipline styles (preventive, supportive & corrective) and Mathematics

Introduction

The totality of what happens in a conventional classroom is being controlled by the teacher because it is expected that they have been trained to instil the right attitudes to the learners. These attitudes guides the way the learner acquire knowledge which invariably enhances their achievement especially in mathematics classroom which is termed difficult by some students following the foundation derived from the mathematics teacher. A nation's social and economic progress depends on the foundation of science and technology, which is provided by mathematics (Ayebale, Habaassa, & Tweheyo 2020). According to Esuong (2021), mathematics is the language of science and technology. It is the scientific discipline that works with quantities, numbers and shapes, Ekweme (2016).

Since mathematics is used in every day field of human activity, it is a crucial topic in schools and the language of science and technology. A strong achievement in mathematics improves the quality of the certificates, claims (Obiweluzo, 2014). Understanding the fundamentals of other academic fields such as arts, physical sciences, engineering,

social sciences, fashion, finance, technology and economics require a strong foundation in mathematics (Phonapichat, Wongwanich & Sujiva 2014; Patena & Dinglasun, 2013). According to these claims, students' academic achievement in mathematics can be defined as a degree of learning outcome they have achieved throughout a specific learning session.

Achievement is something that has been successfully completed, particularly, via hard work, skill development or persistence. Researchers continue to highlight the low achievement of students in mathematics; despite the subject's significance, students are still having trouble grasping the notion of mathematics. Studies have shown that a number of factors contributes to students' struggle when learning some topics such as Geometry in Mathematics such factors include; student's inability to understand the proof of some theorem (Hasibe & Ashen, 2023); teaching methods used by teachers (Nzeakor 2022); lack of instructional materials and gender disparities in mathematics education (Kemi & Duru 2021). These challenges students have when learning

mathematics could be detrimental to their achievement in mathematics.

Mathematics as an important subject in Nigeria Educational system is perceived by many as the inability of the teacher to employ good discipline style in teaching and learning of this subject. For more than 6 years report by examination council of Nigeria have disclosed the current and endemic failure of students in both internal and external examinations especially in mathematics (WAEC) annual reports; (2016-2023). Rising from the negative report, researchers have undertaken studies to ascertain what may likely be the reasons for the negative report. There has been a lot of research touching on the concept of discipline but this paper realized that the effect of teachers disciplining styles to improve students' achievement in Mathematics remains unknown and thus the need for this study. Findings from the related empirical studies showed that discipline is about changing behaviour, not about punishing children (Yang, 2009). Discipline allows children to develop self-discipline, and that affects a child's moral and psychological development.

By definition, discipline ideally means more than adhering to rules and regulations and entails the learner's ability to discern what is right or wrong (Gitome, Katola, & Nyabwari, 2013). It is understood to be that abstract quality in a human being which is associated with and manifested by a person's ability to do things well at the right time, in the right circumstance, without or with minimum supervision (Ngonyani, 2016). According to Wahlig (2019), the type of discipline styles adopted by teachers in the classroom can be classified into three, namely; preventive discipline, supportive discipline and corrective discipline. Teachers with effective mathematics classroom discipline strategies establish expectations, guidelines and rules for behaviour during the first few days of class. In this study, the researcher investigated these three discipline components with regards to mathematics teaching and learning.

Preventive aspect of discipline involves establishment of expectations, guidelines and rules for behaviour change during the first schooling days of a pupil. The ultimate goal of preventive disciplining style is to provide proactive interventions to potential disruptive behaviors by clearly explaining to students what good behaviors are. Supportive aspect of discipline provides a student with suggestions and options for correcting behaviour before a consequence is necessary such as verbal warning, suggestions for correcting behaviour, reminders, redirection and nonverbal communication. Corrective aspect of discipline may be the alternative

when the student has failed to redirect his/her behaviour after repeated attempts (Nyongesa, Chonge & Yegon 2016). It refers to the set of consequences delivered to students following an infraction.

The vital role of discipline in students' academic performance is revealed or implied by a number of previous studies carried out in Kenya (Dawo & Simatwa, 2010; Gitome et al., 2013) and in other African countries (Ehiane, 2014; Keating & Rossouw, 2009). This is supported and corroborated by a number of studies in European, Asian and American countries (Duckworth & Seligman, 2006; Bodovski, Nahum-Shani, & Walsh, 2013; Ning, Van-Dammme, Yang, & Gielen, 2013; Pasternak, 2013; Whisman & Hammer, 2014; Zhao & Kuo, 2015). A few studies however suggest that discipline has minimal, uncertain or non significant influence on students' academic performance or achievement (Gakure et al., 2013; Zimmerman & Kitsantas, 2014). Therefore, findings on impact of discipline on students' academic performance are inconsistent and somehow inconclusive. Nyongesa, Chonge and Yegon (2016) point out that teachers are using preventive discipline style to ensure that students behave well in school as voiced by Kounin (1970) who assents that teachers should organize and manage school activities. Similarly, Nicholas, John and Eric (2016), conducted a study on impact of discipline on academic performance of students which revealed that students' discipline in secondary schools is negative. Also, Mabebe and Prinsloo (2019), assert that learners prefer strict teachers who involve them in the management of discipline; teachers who are always ready to allow them to determine the consequences of their behaviour, and who also make them responsible for the consequences of their behaviour. The study was therefore necessitated by the desire to determine the teachers' preventive, supportive and corrective discipline styles as predictors of students' achievement in mathematics in Etinan Education Zone, Akwa Ibom State.

Research Questions

The following research questions were raised to guide the study.

1. What is the predictive power of teachers' preventive discipline style on students' academic achievement in Mathematics?
2. What is the predictive power of teachers' supportive discipline style on students' academic achievement in Mathematics?
3. What is the predictive power of teachers' corrective discipline style on students' academic achievement in Mathematics?

4. What is the joint predictive power of teachers' preventive, supportive and corrective discipline on students' academic achievement in Mathematics?

Hypotheses

The following null hypotheses were formulated to guide the study and were tested at .05 levels of significance.

- HO₁. The predictive power of teachers' preventive discipline style on students' academic achievement in Mathematics is not statistically significant.
- HO₂. The predictive power of teachers' supportive discipline style on students' academic achievement in Mathematics is not statistically significant.
- HO₃. The predictive power of teachers' corrective discipline style on students' academic achievement in Mathematics is not statistically significant.
- HO₄. There is no significant predictive power of teachers' preventive, supportive and corrective discipline styles on students' academic achievement in Mathematics.

Design of the Study

The study adopted a correlational survey research design. According to Nworgu (2015), correlational survey seeks to establish what relationship exists between two or more variables, as well as determining the magnitude and direction of such relationship. This design is appropriate because the researcher investigates on two or more variables. Similarly, the present intends to determine how preventive, supportive and corrective discipline styles can predict students' achievement in mathematics. Hence, the design is appropriate for the study.

Population of the study

The population of this study consisted of 4783 (four thousand seven hundred and eighty-three) senior secondary 11 students, from 31 public secondary schools in Etinan Education zone.

Sample and Sampling Techniques

A sample of 369 SS II students determined from the population using Taro Yamene formula was

selected by simple random technique and used for the study. The sample was drawn using multistage sampling procedure. At the first stage, simple random sampling by balloting without replacement was used to select two Local Government Areas in the Zone. This is to ensure that the three Local Government Areas were given equal opportunity of being selected.

At the second stage, simple random sampling by balloting without replacement was used to sample three schools each from the Local Governments sampled in the first stage. This was to ensure that each school in each Local Government had equal chance of being selected.

At the third stage, simple random sampling by balloting without replacement was used to draw one stream of SS II in each of the sampled schools from the sampled Local Government Areas. This was to ensure that every student in each of the sampled streams or arms has equal and independent chance of being represented.

Instrument for Data Collection

Two instruments made by the researcher were used for data collection. The instruments are titled: Teachers' Preventive, Supportive and Corrective Discipline Style Questionnaire (TPSCDSQ) and Mathematics Achievement Test (MAT). The instruments were validated by three experts from measurement and evaluation, mathematics and educational administrations unit. The reliability coefficient of 0.93 was obtained for TPSCDSQ using Cronbach alpha method while reliability coefficient value of 0.73 was obtained for MAT using Kuder Richardson 20.

Method of Data Analysis

The data collected were analysed using regression analysis (correlation). This is because the regression analysis is a statistical technique that is used for predicting the relationship between two or more variables (Nworgu, 2015). This analysis was chosen because the study seeks to find the predictive power of students' academic achievement in mathematics that is accounted for by preventive, supportive and corrective discipline styles. Simple linear regression was used to answer research questions 1,2,3 while multiple regression was used to answer research question 4.

Result Presentation

Table 1: Regression analysis of the predictive power of teachers’ preventive discipline style on students’ academic achievement in Mathematics

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.607	.369	.367	4.58658

a. Predictors: (Constant). Preventive Discipline Style

Table 1 results indicate that the magnitude of the relationship between teachers’ preventive discipline style and students’ academic achievement in Mathematics is .607 with a coefficient of determination of .369. This means that teachers’ preventive discipline style relates positively with the students’ academic achievement in Mathematics. Moreover, the coefficient of determination of .369 implies that 36.9% positive variation in students’

academic achievement in Mathematics is attributed to teachers’ preventive discipline style. Thus, the predictive power of teachers’ preventive discipline style on students’ academic achievement in Mathematics is 36.9%. This means that 63.1% variation in students’ achievement in Mathematics is attributed to other factors not teachers’ preventive discipline style.

Table 2: t-test analysis of the predictive power of teachers’ preventive discipline style on students’ academic achievement in Mathematics.

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	8.279	.710		11.657	.000
Preventive Discipline Style	.644	.043	.607	14.912	.000

a. Dependent Variable: Mathematics Achievement

Table 2 reveals that there is a significant predictive power of teachers’ preventive discipline style on students’ academic achievement in Mathematics, $t = 14.912$, $p = .000$. Thus, the null hypothesis is rejected since the associated probability

value of .000 is less than the .05 level of significance. This implies that teachers’ preventive discipline style predicts significantly students’ academic achievement in Mathematics.

Table 3: Regression analysis of the predictive power of teachers’ supportive discipline style on students’ academic achievement in Mathematics

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.644 ^a	.415	.414	4.41321

a. Predictors: (Constant). Supportive Discipline Style

Table 3 results indicate that the magnitude of the correlation coefficient between teachers’ supportive discipline style and students’ academic achievement in Mathematics is .644 with a coefficient of determination of .415. This means that there is a positive relationship between teachers’ supportive

discipline style and students’ academic achievement in Mathematics. Besides, the coefficient of determination of .415 implies that 41.5% positive variation in students’ academic achievement in Mathematics is attributed to teachers’



Supportive discipline style. Thus, the predictive power of teachers' supportive discipline style on students' academic achievement in Mathematics is 41.5%. This means that 58.5%

variation in students' achievement in Mathematics is attributed to other factors not teachers' supportive discipline style.

Table 4: t-test analysis of the predictive power of teachers' supportive discipline style on students' academic achievement in Mathematics

Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.
	B	Std. Error	Beta			
1	(Constant)	7.287	.705		10.337	.000
	Supportive Discipline Style	.700	.043	.644	16.453	.000

a. Dependent Variable: Mathematics Achievement

Table 4 reveals that there is a significant predictive power of teachers' supportive discipline style on students' academic achievement in Mathematics, $t = 16.453$, $p = .000$. Thus, the null hypothesis is rejected since the associated probability

value of .000 is less than the .05 level of significance. This implies that teachers' supportive discipline style significantly predicts students' academic achievement in Mathematics.

Table 5: Regression analysis of the predictive power of teachers' corrective discipline style on students' academic achievement in Mathematics

Model	R	R Square	Adjusted Squared	R	Std. Error of the Estimate
1	.657 ^a	.431	.430		4.35265

a. Predictors (Constant), Corrective Discipline Style

Results in Table 5 indicate that the magnitude of the relationship between teachers' corrective discipline style and students' academic achievement in Mathematics is .657 with a coefficient of determination of .431. This means that teachers' corrective discipline style relates positively with the students' academic achievement in Mathematics. Moreover, the coefficient of determination of .431 implies that 43.1% positive variation in students'

academic achievement in Mathematics is attributed to teachers' corrective discipline style. Thus, the predictive power of teachers' corrective discipline style on students' academic achievement in Mathematics is 43.1%. This means that 56.9% variation in students' achievement in Mathematics is attributed to other factors not teachers' corrective discipline style.

Table 6: t-test analysis of the predictive power of teachers' corrective discipline style on students' academic achievement in Mathematics

Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.
	B	Std. Error	Beta			
1	(Constant)	6.904	.705		9.792	.000
	Corrective Discipline Style	.722	.042	.657	16.999	.000

a. Dependent Variable: Mathematics Achievement

Table 6 reveals that there is a significant predictive power of teachers' corrective discipline style on students' academic achievement in

Mathematics, $t = 16.999$, $p = .000$. Thus, the null hypothesis is rejected since the associated probability value of .000 is less than the .05 level of significance.

Hence, the inference drawn is that teachers' corrective discipline style significantly predicts students' academic achievement in Mathematics.

Table 7: Regression analysis of the predictive power of teachers' preventive, supportive and corrective discipline style on students' academic achievement in Mathematics

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.662 ^a	.438	.434	4.33848

a. Predictors: (constant), Corrective Discipline Style, Preventive Discipline Style, Supportive Discipline Style

Results in Table 7 indicate that the magnitude of the relationship between teachers' preventive, supportive, corrective discipline styles and students' academic achievement in Mathematics is .662 with a coefficient of determination of .438. This means that there is a positive relationship among teachers' preventive, supportive, corrective discipline styles and students' academic achievement in Mathematics. Moreover, the coefficient of determination of .438 implies that 43.8% positive variation in students'

academic achievement in Mathematics is attributed to teachers' preventive, supportive and corrective discipline styles. Thus, the predictive power of teachers' preventive, supportive and corrective discipline styles on students' academic achievement in Mathematics is 43.8%. This means that 56.2% variation in students' achievement in Mathematics is attributed to other factors that are not teachers' preventive, supportive and corrective discipline styles.

Table 8: Analysis of variance of the predictive power of teachers' preventive, supportive and corrective discipline styles on students' academic achievement in Mathematics

Model	Sum of Square	Df	Mean Square	F	Sig.
Regression	5558.978	3	1852.993	98.446	.000
Residual	7133.686	379	18.822		
Total	12692.663	382			

a. Dependent variable: Mathematics Achievement
 b. Predictors: (constant). Corrective Discipline Style, Preventive Discipline Style, Supportive Discipline style

Table 8 reveals that there is a significant predictive power of teachers' preventive, supportive and corrective discipline styles on students' academic achievement in Mathematics, $F(3, 379) = 98.446, p = .000$. Thus, the null hypothesis is rejected since the associated probability value of .000 is less than the .05 level of significance. Hence, the inference drawn is that teachers' preventive, supportive and corrective discipline styles jointly predicts students' academic achievement in Mathematics.

Discussion of findings

The findings of the study revealed that teachers' preventive discipline style relates positively with the students' academic achievement in Mathematics. It therefore implies that the positive variation in students' academic achievement in

Mathematics is attributed to teachers' preventive discipline style. Also, findings reveal that there is a significant predictive power of teachers' preventive discipline style on students' academic achievement in Mathematics. This implies that teachers' preventive discipline style predicts students' academic achievement in Mathematics since it significantly affect students' achievement positively. This finding was predictable because, for effective academic achievement in mathematics generally, there is a need for effective teachers' preventive discipline style which can only be gotten through a veritable instructional strategy. These findings support the finding of Nyongesa, Chonge and Yegon (2016) which revealed that teachers are using preventive discipline style to ensure that students behave well in school as voiced by Kounin (1970) who assents that

teachers should organize and manage school activities. It was also found out that it is difficult to encounter a student who performs better if proper discipline style is not applied. This is true because in a mathematics classroom, a set of instructions need to be given to be followed by the students so as to maintain adequate concentration in the class. This will enable the students to know what to or not to do in order to carry out a task in mathematics.”

This study established that there is a significant predictive power of teachers’ supportive discipline style on students’ academic achievement in Mathematics. This implies that teachers’ supportive discipline style predicts students’ academic achievement in Mathematics. This result is not surprising because there is a huge need for the students to be reminded from time to time, of the set of instructions given before. This will ensure strict compliance in the classroom, and aid them to engage actively in a given tasks, mostly in mathematics. However, the findings disagreed with that of Nicholas, John and Eric (2016), which revealed that students’ discipline in secondary schools is negative. This contradiction may be due to style of discipline applied on the students, which can affect their achievement negatively.

Moreover, this study revealed that there is a significant predictive power of teachers’ corrective discipline style on students’ academic achievement in Mathematics. Hence, the inference drawn is that teachers’ corrective discipline style predicts students’ academic achievement in Mathematics. This finding seems well justified because the predictive power of teachers’ corrective discipline style influences students’ academic achievement in Mathematics. On the contrary, poor teachers corrective discipline styles may, in turn, birth poor performance in mathematics. The findings of this study agrees with the position in a study done by Mabeba and Prinsloo (2019), it was indicated that learners prefer strict teachers who involve them in the management of discipline; teachers who are always ready to allow them to determine the consequences of their behaviour, and who also make them responsible for the consequences of their behaviour.

Conclusions

In view of the findings of the study teachers’ discipline styles and classroom practices as predictors of students’ academic achievement in Mathematics. It was concluded that there was a significant predictive power of teachers’ preventive discipline style on students’ academic achievement in Mathematics. Also, there is a significant predictive power of teachers’ supportive discipline style on students’

academic achievement in Mathematics. It was further found that there is a significant predictive power of teachers’ corrective discipline style on students’ academic achievement in Mathematics.

Recommendations

Based on the findings of the study, the following recommendations were made:

1. Mathematics teachers should deliberately adopt the teachers’ discipline styles as predictors of students’ academic achievement in mathematics in classes. This approach concentrates in demystifying the abstraction in Mathematics by applying discipline styles in classroom practices.
2. School management should approach the problem of discipline with empathy for the possible problems.
3. Teachers should deliberately adopt an effective style of discipline in the mathematics classroom since they can significantly predict students’ academic achievement in mathematics.

References

- Ayebale L., Habaasa G., & Tweheyo S. (2020) Factors affecting students’ achievement in mathematics in secondary schools in developing countries: A rapid systematic review *Statistical Journal of the IAOS*, vol. 36, no. S1, pp. 73-76
- Bodovski, K., Nahum-Shani, I. & Walsh, R. (2013). School disciplinary climate and students’ early mathematics learning: Another search for contextual effects? *American Journal of Education*, 119 (2), 209-234. Retrieved from <http://eric.ed.gov/?id=EJ1003815>
- Dawo, A. J. -I., & Simatwa, E. M. W. (2010). Opportunities and challenges for mixed day secondary school headteachers in promoting girl-child education in Kenya: A case study of Kisumu Municipality. *Educational Research and Reviews*, 5(12), 730-741. Retrieved from <http://www.academicjournals.org/err>
- Duckworth, A. L., & Seligman, M. E. P. (2006). Self-discipline gives girls the edge: Gender in self-discipline, grades, and achievement test scores. *Journal of Educational Psychology*, 98(1), 198-208. DOI:10.1037/0022-0663.98.1.198
- Ehiane, O. (2014). Discipline and Academic Performance (A Study of Selected secondary Schools in Lagos, Nigeria) Lagos State Polytechnic, (SPTSA), Ikorodu, Mainland Annex, Lagos. *International Journal of Academic Research in Progressive Education*

- and Development*. (3)1 ISSN: 2226-6348 181
www.hrmars.com/journals.
- Ekweme, C. O. (2013) Mathematics Teaching and Learning in schools. Calabar: Radiant Ventures Nig. Ltd. Esoug U. U. (2021) Mathematics language instruction and achievement of senior secondary school students in mathematics word problems calabar education zone, CRS (Unpublished Master of Education M.Ed Thesis) University of Calabar, Calabar.
- Gakure, R. W., Mukuria, P., & Kithae, P. P. (2013). An evaluation of factors that affect performance of primary schools in Kenya: A case study of Gatanga District. *Educational Research and Reviews*, 8(13), 927-937. Retrieved from http://www.academicjournals.org/article/article1379769520_Gakure%20et%20al.pdf
- Gitome, J. W, Katola, M. T., & Nyabwari , B. G. (2013). Correlation between students' discipline and performance in the Kenya Certificate of Secondary Education. *International Journal of Education and Research*, 1 (8), 1 – 10.
- Hasibe S. M. & Ahsen F. (2023). Incorrect theorems and proofs: An analysis of pre-service mathematics teachers' proof evaluation skills: *Journal of Pedagogical Research* Volume 7, Issue 3, <https://doi.org/10.33902/JPR.202318840>
- Keating, J. B., & Rossouw, J. (2009). The influence of ill-disciplined learners on the workplace security of the foundation phase educator in South Africa. *Journal of Educational Studies*, 8(2), 128-139 .Retrieved from <http://dspace.nwu.ac.za/handle/10394/3290>
- Kemi, O. A & Duku N. (2021). Gender and Instructional Materials as a Correlate of Grade 6 Learners' Mathematics Performance in Buffalo City, South Africa: *Universal Journal of Educational Research* 9(3):413-422 DOI:10.13189/ujer.2021.090301.
- Mabeba, M. Z., & Prinsloo, E. (2019). Perceptions of discipline and ensuring problems in secondary education. *South African Journal of Education*, 2(1), 34-41.
- Ngonyani, D. J. (2016). "The Nature, Causes and Treatment of Disciplinary Problems in Dar-es-Salaam Educational Institutions". A Class Project Report. Dar-es Salaam.
- Nicholas O. S., John O. A. & Eric K. K. (2016). Impact of Discipline on Academic Performance of Pupils in Public Primary Schools in Muhoroni Sub-County, Kenya. *Journal of Education and Practice* www.iiste.org ISSN 2222-1735 (Paper) ISSN 2222-288X. (7)6, 164 – 174
- Ning, B., Van -Dammme, J., Yang , X., & Gielen, S. (2013, September). Does classroom disciplinary climate in a school matter everywhere? A cross-country comparative study. Paper presented at The 2013 Annual Meeting of the European Conference on Educational Research. Retrieved from <https://lirias.kuleuven.be/handle/123456789/428773>
- Nworgu, B. G. (2015). *Educational Measurement and Evaluation: Theory and Practice*. Enugu: University Trust Publishers.
- Nzeakor, E. C. (2022). Relative efficacy of mathematical model and information processing model on student achievement and retention in mathematics. (unpublished M E.d Thesis) University of Nigeria, Nsukka.
- Obiweluozo, E.P. (2014). *Effect of self-instruction strategy on pupils' achievement and interest in Mathematics*. (Unpublished Ph.d thesis), University of Nigeria, Nsukka.
- Patena, A. D. C., & Dinglasan, B. (2013). Students' Performance on Departmental Examination: Basis for Mathematics Intervention Programme. *SSRN Electronic Journal*. DOI: 10.2139/ssrn.2276044
- Phonapichat, P., Wongwanich, S. & Sujiva, S. (2014). An Analysis of Elementary School Students Difficulties in Mathematical Problem Solving. *Education Procedia-Social and Behavioural Sciences*. DOI: 10.1016/J.SBSPRO.2014.01.728.
- Wahlig, H. (2019). Types of Discipline in the Classroom. <https://classroom.synonym.com/types-discipline-classroom-6630810.html>.
- Whisman, A., & Hammer, P. C. (2014). The association between school discipline and Mathematics performance: A case for positive discipline approaches. Charleston, WV: West Virginia Department of Education, Division of Teaching and Learning, Office of Research.