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Effect of Class Size on the Developmental Domains of the Kindergarten Pupils

Gerald T. Malabarbas^{1*}, Marion Kay S. Normor², Vilma C. Alburan¹

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ABSTRACT

Children are the future of society, and early childhood development is undeniably important. As a result, stakeholders expect high-quality Kindergarten education. This study assessed the effect of class size and the developmental domain performances of Kindergarten pupils in public elementary schools. The researcher employed a descriptive-correlational design using the adopted questionnaire to evaluate the developmental domain performances of the Kindergarten pupils in the selected public elementary. Results of the study divulged that most Kindergarten pupils were at the exact age of their grade level, male, had normal nutritional status and were middle children among their siblings. The Kindergarten class size is above the required average of 25-30 pupils. Moreover, the overall results also disclosed an evident performance level in various developmental domains of the pupils. Only placement among siblings on the profile variables was identified as a significant predictor of the developmental domain performance of the pupils. Further, the study found no association between class size and Kindergarten pupils' developmental domains. The researchers suggest that the department should maintain the standard size of the learners in every Kindergarten class. Furthermore, the teachers should monitor learners' cognitive development and other physical activities even when they are studying only with their parents/guardians.

INTRODUCTION

The Department of Education (DepEd) has promoted early childhood education for decades. The Department reinforces this by including a Kindergarten in the country's K-12 basic education curriculum. The Department of Education considers Kindergarten a bridge between informal and formal literacy. This is the time of fast brain development when the brain is virtually fully formed. It is a learning time to walk, talk, and build self-esteem, worldview, and moral foundations. To prepare children for formal school, they should be immersed in various activities, games, and plays.

However, there continues to be a debate on what should be an ideal class size in school. This is especially true in our Kindergarten classes, where we begin to mold the minds and guide our young children to the world of learning and acquisition of knowledge and skills they can use in the future. Some teachers reported an average Kindergarten class size of twenty-one (21) students in full-day Kindergarten classes and 22 students in half-day classes. Teachers were asked about their current student-to-teacher ratio and what the optimal number of students per teacher should be. They said they teach an average of 20.4 students, while seventeen (17) students in each class would be a better number. This is to state policies also in the United States and Canada (Samuels, 2017). And while our Department of Education struggles to improve our public schools teacher-pupil ratio, private preschools in the country have already adopted a much smaller class size for Kindergarten children, as small as 10 to 15 children only in a class.

During early childhood, children develop at a rapid rate. Children's experiences and relationships during this period are critical for their future development. Children who

experienced higher levels of emotional and organizational classroom quality in both pre-Kindergarten and Kindergarten demonstrated better social skills and fewer behavior problems in both Kindergarten and first grade compared to children who did not experience better classroom quality.

The examination of the first-grade results indicated that the emotional and organizational quality of pre-Kindergarten classrooms was the strongest predictor of children's first-grade social skills and behavior problems (Broekhuizen *et al.*, 2016). According to Chingos and Whitehurst (2011), the substantial expenditures required to sustain smaller classes are justified by believing that smaller classes increase student learning. Despite there being a large literature on class-size effects on academic achievement, only a few studies are of high enough quality and sufficiently relevant to be given faith as a basis for legislative action.

During the preschool years, children rapidly build potentially long-lasting patterns of behavior and psychosocial skills. Erik Erikson's theory of psychosocial development relates to the evolution of an individual's social and moral personality. Psychosocial refers to harmonizing the demands of the self (psycho-) with the needs of society (social-). The psychosocial development of children in Kindergarten might be at various levels. It is the role of educators to guide students through whatever developmental stage or stages they are presently undergoing (Baker, 2019).

Considering the aforementioned situation, the researchers aim to determine whether or not class size affects the developmental domain performance of a Kindergarten student in some selected public elementary schools in the Division of Calbayog City, Philippines.

¹ Christ the King College, Calbayog City, Philippines

² Maguino-o ES, Calbayog City, Philippines

* Corresponding author's e-mail: dlaregtm@gmail.com

LITERATURE REVIEW

Some children didn't know how to spell their names, while others were reading chapter books, according to Samuels (2017). It was difficult to offer each child personalized attention, and teachers frequently returned home fatigued and disappointed, unsure if they had been able to encourage and support all of those precious children. As the year progressed, some teachers realized that when two students were missing and they only had 20 students, they were more effective teachers. Although the difference between 20 and 22 pupils may not appear to be significant, it had a significant impact on their class. Adding two Kindergarteners to the class requires two more changes to the lesson plan, especially if the pupils are failing in school or adapting to the new rules.

Small classes have the greatest effect on increased student achievement in the primary grades when class sizes are below 20, and for gap groups, specifically minority and economically disadvantaged students (Biddle & Berliner, 2002; Bosworth, 2014; Filges *et al.*, 2018). In these instances, smaller classes benefit students. Understanding how class size is defined is crucial for assessing its efficacy. Small class sizes with a 15:1 or 30:2 student-teacher ratio obscure research discussion and reflection. Both instances show a pupil-teacher ratio of 15:1, but a classroom with 30 pupils and 2 teachers looks different than one with 15 students and 1 teacher (Filges *et al.*, 2018; Lapsley, Daytner, Kelly, & Maxwell, 2002). Indiana's project prime time shows how a lack of difference between these two ways of reporting class size can cause a class size initiative to become a lowering of the per pupil-teacher ratio through the use of a classroom helper (Biddle & Berliner, 2002).

Apparently, children who had better emotional and organizational classroom quality in pre-kindergarten and kindergarten had better social skills and fewer behavior problems in kindergarten and first grade than children who didn't have better classroom quality (Broekhuizen *et al.*, 2016). Also, psychosocial factors (PSFs) like motivation, social control, and self-regulation are important for learning in the classroom (Zins & Elias, 2007). Students need to be very motivated to learn well in school and to recognize and use the social supports that can help them learn, control their behavior, and deal with their feelings. Seemingly, it appears that the number of pupils in a classroom has the ability to influence how much is learned in a variety of ways. For instance, it could have an effect on the level of social involvement among students. This may result in increased or decreased noise and disruptive conduct, which in turn affects the teacher's ability to promote certain types of activity. It could reduce the amount of time a teacher has to focus on individual pupils and their unique requirements, as opposed to the group as a whole. Since it is simpler to focus on an individual in a smaller group, the smaller the class size, in principle at least, the more likely it is that each student will receive individualized attention.

In today's educational system, the significance of

psychosocial factors (PSFs) like motivation, social interaction skills, and environmental support has been generally recognized as having a direct bearing on a student's level of academic achievement (Clouder *et al.*, 2008; Lee & Shute, 2010). In addition, pupil safety factors can be utilized to evaluate a student's potential for academic failure. PSFs are even capable of being considered to constitute significant educational achievements. 2.2 In spite of the fact that the majority of educational policies and interventions are focused on raising students' academic performance, there have been suggestions made for educational models that are more comprehensive and that describe a wider variety of educational outcomes (Lee & Shute, 2010; Zins, Bloodworth, Weissberg, & Wallberg, 2004).

Learning to accept and interact with peers from different cultures is a key ability for global learners, according to Hattie (2008). Small courses help children form lifetime friendships. Pupils get more comfortable with each other, sharing ideas and viewpoints and pushing their studies. They're more cooperative. Each learner works at their own pace. Smaller class sizes allow teachers to work one-on-one or in small groups of two to four students to observe performance, re-teach a concept, and provide appropriate feedback. The cited research focused on the external effects of small class sizes, whereas the present study determines respondents' participation through teachers' keen observation of class size's effect on developmental domains such as socio-emotional, gross motor, fine motor, self-help, receptive language, expressive language, and cognitive.

METHODOLOGY

The study employed a descriptive research design since this paper aimed to evaluate the effect of class size on the psychosocial performance of Kindergarten pupils in selected public elementary schools. The sample size was calculated using the Raosoft sample size calculator, and a stratified random sampling technique was employed in the study. Then, an adapted questionnaire was used and validated through Cronbach's alpha analysis. The instrument obtained a Cronbach's alpha value of 0.964. Thus, the instrument is valid, reliable, and accepted. On the other hand, A Kolmogorov-Smirnov and Shapiro-Wilk test was conducted to test the normality of the distribution of the variable of the study. Based on the test, almost all of the distribution of the variables ($p=0.000$) significantly departed from normality with p -values less than 0.05. Thus, the non-parametric statistic was used in the treatment of the data with the aid of the SPSS.

RESULTS AND DISCUSSION

Demographic Profile of the Kindergarten Pupils

The study disclosed that the majority of the Kindergarten pupils are 5 years old (120 or 61.2%) as compared to 6 years old (76 or 38.3%). There is an almost equal number of male (100 or 51.0%) and female (96 or 49%) pupils. In terms of nutritional status, 152 (77.6%) are normal,

30 (15.3%) are wasted, 10 (5.1%), and only 2(1.0%) are overweight and obese. As to placement among siblings, most of them are middle children (73 or 37.2%) and only a few are the only child (19 or 9.7%).

Class Size of the Kindergarten Pupils per Class in Selected Public Schools in Tinambacan 2 District

As shown in the table above, most of the public elementary schools have Kindergarten classes of more than thirty-

Table 1: Frequency and Percentage distribution of the class size of the Kindergarten pupils

Class Size	Frequency	Percent
30 and below	3	42.86
31 and above	4	57.14
(Mean= 39.7; SD=11.85)		

one (31) pupils per class (4 or 57.14%) while for a class of thirty and below are only three (3) or 42.86%. Then, the average number of pupils in Kindergarten classes in the said district is 39.7 or 40 pupils thus, the class size of the Kindergarten is too large or more than the required class size of 25-30 pupils only.

Level of Developmental Domain Performances of Kindergarten Pupils

The means of each item of the seven developmental domains are presented in Table 8. All items have a mean score above 3.00. This is an indication that all of the developmental domains are ‘evident’ to ‘highly evident’ and considered those items as a major antecedent of the Kindergarten pupils’ performance. This result reveals that the respondents consider that all the factors listed above

Table 2: Level of developmental domain performances of the Kindergarten pupils

Developmental Domains	N	M	SD	Interpretation
Gross Motor	196	3.83	0.34	Highly Evident
Fine Motor	196	3.59	0.47	Highly Evident
Self-Help	196	3.40	0.51	Evident
Receptive Language	196	3.51	0.50	Highly Evident
Expressive Language	196	3.28	0.61	Evident
Cognitive	196	3.45	0.66	Evident

Legend: 1.00-1.49=Not Evident (1); 1.50-2.49=Slightly Evident (2); 2.50-3.49=Evident (3); 3.50-4.00=Highly Evident (4); M=mean; SD=standard deviation.

consist of some degree of importance concerning the developmental domain performances of Kindergarten pupils. Moreover, gross motor (M=3.83, SD=0.47) has the highest mean among the domains, while expressive language (M=3.28, SD=0.61) has the lowest mean among the domains.

Test of Relationship Between the Demographic Profile and the Developmental Domain Performances of Kindergarten Pupils

As presented in the above table, the computed Kendall tau-b correlation coefficient ranges from -0.110 to +0.189. As shown, there is a significant correlation in age with socio-

Table 3: Correlation between the demographic profile and the developmental domain performances of the Kindergarten pupils

Developmental Domains		Age	Gender	Nutritional Status	Placement Among Siblings
Socio-Emotional	Kendall tau-b Correlation	0.175*	0.075	-0.002	-0.046
	Sig. (2-tailed)	0.014	0.293	0.978	0.521
	N	196	196	196	196
Gross Motor	Kendall tau-b Correlation	0.079	-0.010	-0.092	-0.117
	Sig. (2-tailed)	0.272	0.890	0.200	0.103
	N	196	196	196	196
Fine Motor	Kendall tau-b Correlation	0.176*	-0.065	-0.015	-0.133
	Sig. (2-tailed)	0.013	0.365	0.832	0.063
	N	196	196	196	196
Self-Help	Kendall tau-b Correlation	0.024	-0.079	0.070	-0.163*
	Sig. (2-tailed)	0.736	0.273	0.331	0.023
	N	196	196	196	196
Expressive Language	Kendall tau-b Correlation	0.075	.070	.189**	-0.141*
	Sig. (2-tailed)	0.297	0.332	0.008	0.048

	N	196	196	196	196
Cognitive	Kendall tau-b Correlation	0.046	.069	0.141*	-0.125
	Sig. (2-tailed)	0.527	0.334	0.048	0.080
	N	196	196	196	196
Overall	Kendall tau-b Correlation	0.117	.025	0.093	-0.158*
	Sig. (2-tailed)	0.104	0.727	0.195	0.027
	N	196	196	196	196

*. Correlation is significant at the 0.05 level (2-tailed), **. Correlation is significant at the 0.01 level (2-tailed)

emotional ($r=0.175$, $p\text{-value}=0.014$) and fine motor ($r=0.176$, $p\text{-value}=0.013$). This means that socio-emotional and fine motor is correlated with older pupils. Also, there is a significant correlation in nutritional status with expressive language ($r=-0.189$, $p\text{-value}=0.008$) and cognitive ($r=0.141$, $p\text{-value}=0.048$). This means that expressive language and cognitive domain correlate with normal nutritional status. Moreover, another significant correlation is observed between placement among siblings with self-help ($r=-0.163$, $p\text{-value}=0.023$) and expressive language ($r=-0.141$, $p\text{-value}=0.048$). This means that self-help and expressive language correlates with pupils being the first child. Overall, there is a significant relationship in the placement among siblings with the

developmental domain ($r=-0.158$, $p\text{-value}=0.027$).

Test of Relationship Between the Class Size and the Developmental Domain Performances of Kindergarten Pupils

As presented in Table 3, the computed Kendall tau-b coefficient ranges from -0.150 to +0.020, and the p-values (sig.) are greater than the 0.05 level of significance. Thus, there is no significant relationship between the class size and developmental domain performances of the Kindergarten pupils. This means that in this study class size is not a predicting factor in the developmental domain performances of the Kindergarten pupils.

Table 3: Correlation between the class size and the developmental domain performances of the Kindergarten pupils

Developmental Domains		
Socio-Emotional	Kendall tau-b Correlation	0.020
	Sig. (2-tailed)	0.786
	N	196
Gross Motor	Kendall tau-b Correlation	-0.057
	Sig. (2-tailed)	0.429
	N	196
Fine Motor	Kendall tau-b Correlation	-0.150
	Sig. (2-tailed)	0.236
	N	196
Self-Help	Kendall tau-b Correlation	-0.053
	Sig. (2-tailed)	0.458
	N	196
Receptive Language	Kendall tau-b Correlation	-0.007
	Sig. (2-tailed)	0.923
	N	196
Expressive Language	Kendall tau-b Correlation	-0.096
	Sig. (2-tailed)	0.183
	N	196
Cognitive	Kendall tau-b Correlation	-0.126
	Sig. (2-tailed)	0.078
	N	196
Overall	Kendall tau-b Correlation	-0.092
	Sig. (2-tailed)	0.201
	N	196

*Correlation is significant at the 0.05 level (2-tailed)

CONCLUSIONS

As a result of the findings of the study, the researchers concludes that the majority of the Kindergarten pupils were of the right age, male, with normal nutritional status, and middle child. Then, the class size is more than the required average size of 25-30 pupils. Furthermore, all the developmental domains were performed evidently by the Kindergarten pupils. On the other hand, only placement among siblings was considered to be a predictor of the level of developmental domain performances of the Kindergarten pupils. Lastly, the class size does not affect the developmental domain performances of the Kindergarten pupils. It is highly recommended by the researchers that Kindergarten teachers should give more time and attention to monitoring students' cognitive development and other physical activities even when they are studying only with their parents/guardians.

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