The Performance of Basic Education Learners in the National Achievement Test

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Abstract

National Standardized Assessments are vital tools for determining the success of the institutions' achievement of educational outcomes. This study described the performance of basic education learners in the elementary and secondary levels in the National Achievement Test and compared their NAT performance when grouped according to school size and division. The study also explored the factors that lead to the NAT performance of basic education learners based on the perspectives of their teachers and school administrators. The NAT Examinees of SY 2017-2018 comprised 349 elementary and 1 158 secondary learners in the selected schools of the City Divisions of the Province of Bukidnon, Philippines, provided by the Bureau of Educational Assessment BEA, and 91 teachers and eight school administrators participated in the interview. The Basic Education Learners in elementary and secondary levels generally performed low in the NAT, having low proficiency in critical thinking, problem-solving, and information literacy. However, the elementary learners were nearly proficient in Filipino, particularly in problem-solving and information literacy. The secondary learners were nearly proficient in the three skills in Filipino; and two skills (information literacy and problem-solving) in Araling Panlipunan. The secondary learners were also nearly proficient in problem-solving in the English subject. There is a significant difference in the NAT performance of the basic education learners when they are grouped as to school size. However, the results were similar by city division. Several factors were found to have contributed to the low performance of learners in the NAT.

Keywords: Performance, National Achievement Test, 21st-century skills

Introduction

Institutions can construct a model of effective teaching-learning processes by analyzing the successes and failures of students' performance in national and international tests. The model can help academic institutions decide which students are most likely to succeed regarding admission, progression, and completion. Additionally, examining the variables connected to the outcomes of the National Achievement Test may make it easier to identify low-performing children and schools that can benefit from intervention and remediation plans. Identifying low-performing learners early is essential to establish programs that enable time for intervention and remediation.

In the K to 12 Basic Education, one of the most critical outcomes is the successful performance of its learners on the National Achievement Examination. The Department of Education, particularly the National Educational Testing and Research Center NETRC, now called the Bureau of Education Assessment (BEA), takes charge of all these activities in Basic Education through the various Regional Offices and Division Offices. The BEA is an institution under DepEd that leads in research, evaluation, and assessment of the effectiveness of education, which provides information vital to the formulation of educational policies geared towards the realization of an empowered and globally competitive Filipino. The organization is responsible for administering the National Achievement Tests, formerly the National Elementary Achievement Test (NEAT) for the elementary level and National Secondary Achievement Test (NSAT) for the secondary level. The test aims to assess the abilities and skills of learners and determine their knowledge and capabilities in five (5) subject areas: English, Filipino, Science, Mathematics, and Araling Panlipunan (Social Studies).

Filipino learners need to perform better in international and national assessments. In the recent results of the Programmed International Students Assessment PISA 2018, Filipino students achieved an average score of 353 points in Mathematical Literacy, significantly lower than the OECD average of 489 points. Only 1 out of 5 Filipino students (19.7%) attained at least the minimum proficiency level (Level 2) in Mathematical Literacy. Among the participating ASEAN countries, Filipino students performed closest to but significantly behind Indonesian students by 26 points in Mathematical Literacy (DepEd, 2019). It indicates that Filipino Junior High and Senior High School Students have low mathematics literacy.

Moreover, Filipino students obtained an average score of 340 points in Overall Reading Literacy, significantly lower than the OECD average of 487 points. Only 1 out of 5 Filipino students (19.4%) achieved at least the minimum proficiency level (Level 2) in Overall Reading Literacy. Among the participating ASEAN countries, Filipino students performed closest to but significantly behind Indonesian students by 31 points in Overall Reading Literacy.

Filipino students attained an average score of 357 points in Scientific literacy, significantly lower than the OECD average of 489 points. Female students obtained an average score of 359 points for Scientific literacy, slightly higher but not significantly different from the average score of male students (355 points). Students from private schools scored an average of 399 points in Scientific literacy, significantly higher than public school students, who averaged 347 points. SHS students (439 points) performed significantly better than JHS students (356 points) (Undersecretary Diosdado M. San Antonio DepED, 2019).

It aligns with the results of the National Achievement Test. It was observed that the performance of Grade 6 students in the NAT had been steadily declining in the last three years, placing them at the "low mastery" descriptive level of DepEd. Also, the 2018 NAT results showed that for the third straight year, the national average mean percentage score (MPS) of Grade 6 continued its downward trajectory at 37.44. This data marks the weakest performance in standardized examinations in the Philippines (Albino, 2017). Although the Grade 10 MPS improved by 0.51 over scores in 2017, their NAT results still fall under the "low mastery" level. Assessment must be narrowed down to Grades 6 and 10 to comprehensively evaluate factors and competencies affecting the students' NAT results.

Research suggests that exams show greater rigor and closer alignment with K-12 standards than placement exams (Achieve, 2007). Several researchers questioned the predictive validity of both exam types, finding that they often led to placement errors in college courses. A combination of high school GPA and exam results was more comprehensive than exam results alone (Belfield & Crosta, 2012; Scott-Clayton, Crosta, & Belfield, 2014; Scott-Clayton & Stacey, 2015).

Some authors argued that such assessments—especially those nationally known—can raise awareness of postsecondary options, boost confidence in state accountability systems, and provide students with admissions data accepted at many colleges (Miller & Happel, 2011). Others question the suitability of readiness exams as accountability measures given the testing burden and the exams' limited alignment with state standards and accountability measurement purposes (Martineau & Marion, 2015; Catchpole, 2016).

This study would like to describe the performance of the basic education learners in the National Achievement Test (NAT) both in elementary and secondary levels of the two City Divisions of the Province of Bukidnon, Philippines. It also attempts to explore the factors that may have led to the NAT performance of learners based on the perspectives of their teachers and school administrators.

Framework of the Study

The study's premise is that 21st-century learners' skills are assessed in the National Examination of Basic Education. These 21st-century skills are critical thinking, problem-solving, and information literacy skills. According to Silva (2009), '21st-century skills are "not new, just newly important."These are vital capabilities that have always been essential. However, nowadays, because of the emergent demands of knowledge-based economies, these capabilities have gained increasing importance (Levy & Murname, 2004; Rotherham & Willingham, 2009). Certain skills are specific to the information era we are now at present. For instance, OECD (2004) and Pedró (2006) opine that due to the exponential growth of information, any content may become

obsolete in a few years; continual updating is the only way to meet the demands of the 21st century. It is expedient that everybody needs to be prepared for and convinced of the need to be lifelong learners to keep pace with the evolution of technology (Medel-Añonuevo et al., 2001).

Figure 1 presents the schematic diagram showing the parameters of the study. It reveals the various dimensions or skills in basic education learners' National Achievement Test NAT. Critical thinking involves making informed choices about obtained information and communication using sufficient reflection and reasoning. It concerns the ability to think reflectively and judge skillfully to decide what information or communication is relevant in a given context (Gut, 2011). The ability to filter the amount of incoming data to formulate one's point of view is a critical 21st-century skill (Dede, 2010). To think critically, employees need knowledge central to the particular domain to formulate an independent, well-grounded perspective or opinion (Van de Oudeweetering & Voogt, 2018).
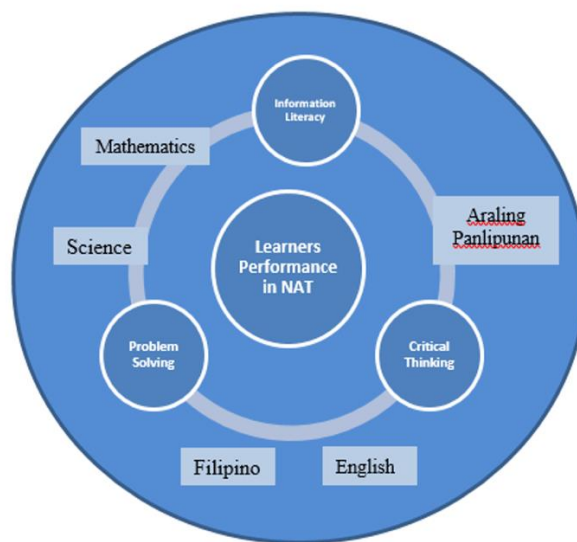

Figure 1

Performance of Basic Education Learners in NAT

Critical thinking in the 21st century is described as the "ability to design and manage projects, solve problems, and make effective decisions using a variety of tools and resources" (Fullan, 2013, p. 9). Drake et. al (2014) highlights the challenge of designing educational experiences that address local issues and real-world problems for which there may be no clear answer. Critical thinking requires students to "acquire, process, interpret, rationalize, and critically analyze large volumes of often conflicting information to the point of making an informed decision and taking action in a timely fashion" (C21, 2012, p. 10). Digital tools and resources can support the process of critical thinking, primarily when used to create authentic and relevant learning experiences that allow students to "discover, create, and use new knowledge" (Fullan & Langworthy, 2014, p. 35).

Problem-solving skills are essential tools for K to 12 learners to be prepared for the world of work. These are vital skills for basic education learners to become college-ready, work-ready, and future-ready. As the workforce is increasingly confronted with challenging and non-recurrent problems (Autor et al., 2003), employees need the skills to solve domain-specific problems. Situations that are complex and uncertain and have no precedent require problem-solving skills (Keane et al., 2016). Problem-solving is often conceptualized as the knowledge and skills required to deal effectively with complex, non-routine situations (Funke et al., 2018). Although domain-specific knowledge is essential, it is more than just prior knowledge. Employees must identify necessary actions, possible gaps, and steps to obtain this information (Rausch & Wuttke, 2016).

Information skills are fundamental tools for learning in the 21st century. The abundance of information and data implies that employees in nearly all sectors of the economy must be able to search, evaluate, and organize information, often coming from multiple sources (Silva, 2009). The quick access to a wide range of information

sources means that people have to recognize when information is needed and evaluate the reliability and relative value of information (Marchionini & White, 2007; Starkey, 2011). Communication skills. Communication skills are vital in the growing service sector and concern the ability to transmit information, ensuring that the meanings are effectively expressed by considering the audience and medium (Ananiadou & Claro, 2009; Katz, 2007). One must effectively regulate one's needs and goals with those of the larger society to successfully navigate the current social world (Voogt et al., 2012). Because of the interconnectedness of our global economy, employers demand people with communication skills (Levy & Murnane, 2004)

The development of the above-mentioned 21st-century skills is perceived to be affected by several factors. Many of these factors may affect the learners themselves and their environment. These factors include cognitive, socio-cultural, geographical, economic or financial, and nutritional factors. Hattie (2003) declared that students account for the most significant percentage of the variance of their achievement (50%). He said that it is what the students bring to the table that predicts achievement more than any other variable suggesting in his discussion that IQ still explains the "trajectories of learning" among learners. A similar finding was cited by Schreider et al. (2002), who maintained that the student's natural ability determines his achievement. Aside from the innate learning capability of the students, other variables related to the students themselves interplay with student achievement. One is student engagement, which is defined as the level of participation. Second is intrinsic interest that a student shows in school, which involves behaviors such as persistence, effort, attention, and attitudes such as motivation, positive learning values, enthusiasm, interest, and pride in success (Akey, 2006), and study habits (Nouhi, et al., 2008).

On the other hand, Hattie (2003) also claimed that the teachers account for about 30% of the variance of student achievement, citing them as having the most considerable influence on student achievement after the students themselves. Wenglinsky's (2000) study also found that the teachers' impact on student achievement overshadows the effect of class size by 7 to 10 times over. He identified five variables relating to the quality of teachers that are positively associated with student achievement. These are the major, the professional development in higher-order thinking skills; the professional development in diversity, the hands-on learning; and the use of higher-order thinking skills. These findings contradict other researchers' claims (Darling-Hammond, 2000; Rockoff, 2004), who also asserted that teacher quality is an essential determinant of student achievement. There are other characteristics of the teachers that may also influence student achievement. These may include affective characteristics, which constitute one's psychological influence on students, along with his capability to do reflection (Stronge, 2007); commitment (Firestone & Pennel, 1993; Reyes et.al. 2012, Graham et.al 2020) and, most importantly, assessment strategies (Olina & Sullivan, 2002). Fullan (2013) claimed that assessment for learning, when done well, is one of the most powerful, high-leverage strategies for improving student learning.

In addition to the quality of students and teachers, the effect of peer factors on student learning has been the subject of researchers' interest. Burke and Sass (2008) studied classroom peer effects and student achievement. They found that the impact of peers seemed to be more definitive at the elementary level rather than at the higher levels and that the weakest students appeared to experience the most significant positive impact from having higher-quality peers. However, Hanushek, Kain, Markman, and Rivkin (2001) claimed that average peer achievement positively affects achievement growth. Although they also agreed that much more could be learned about the impact of peers on student learning when other variables are considered.

Betts, Zau, and Rice (2003) looked at resource disparities between schools, investigated achievement patterns, and offered comprehensive statistical estimates of the classroom and school-related variables that have the biggest effects on student accomplishment. The study was carried out in California. They discovered that student achievement is impacted by school resources related to class size and teacher preparation, which includes years of classroom experience, subject-matter certificates and authorizations, the highest academic degree, and college major. They found that teacher qualifications, particularly in elementary schools, are linked to the enormous disparities found in San Diego schools.

Moreover, according to Danesy (2004), complimenting environmental and socioeconomic factors to produce high academic achievements and performance include good teaching, counseling, administration, seating arrangement, and building. Dilapidating buildings lacking mental-stimulating facilities characterized by low or

no seating arrangement will also be destructive. Danesy, however, lamented that the innovative environment does stimulate head start learning and mental perception. It has also been proved that students from a simulated environment with laboratory equipment or those taught with rich instructional aids and pictures performed better than those trained under the theoretical canopy of abstraction. Thus, teaching and learning should be done under an organized, planned, and fortified environment with learning instructional aids to stimulate students' sense of conception, perception, and concentration to facilitate systematic understanding and acquisition of knowledge.

Lynn and Backmon (n.d) determined the factors influencing students' academic performance in upper-level accounting courses and assessed student performance against course learning goals. The study explored the relative importance of academic and non-academic factors in predicting performance outcomes. The results indicated that several academic factors (GPA, student's diagnostic exam score, and student's self-assessment of course learning objectives) significantly predict a student's final numerical course average. The study also examined the association between student achievement, of course, learning goals, and various non-academic demographic and student success factors. The results indicated that student course loads, employment status, marital status, and family responsibilities do not equally impact student learning outcomes. The study extended existing research by using non-traditional students at an upper-division university and various approaches to assessing the achievement, of course, learning goals.

Tuck (2004) studied the relative importance of four factors-ability, social class, sex, and types of school on the performance of children in the educational system of England and Wales. It uses a dummy variable linear regression analysis of data collected by the National Survey of Health and Development, tracing the progress of all children born in one week of 1946. The conclusions suggested, among things, that reorganization of educational institutions can have a considerable effect on children's performance, irrespective of their class and intelligence, and also that sex plays an increasingly important determining role as pupils progress through the system.

Taafe and Cunningham's (2005) study involving both technical and further education (TAFE) students and university students identified social integration, motivation, and quality of teaching as essential factors influencing non-completion and academic achievement. They developed and tested a measurement model that captured the three constructs in tertiary students. A three-factor independent cluster measurement model comprising social integration, motivation, and quality of teaching was specified and tested through confirmatory factor analysis. The three-factor model fit the data well for the students from TAFE but needed to be validated for university students. A two-factor model comprising the teaching and social integration factors was subsequently specified for the university sample and was found to have a good fit.

Methodology

The study utilized a mixed research method, particularly an explanatory-sequential design. The researcher collected quantitative data on the learners' performance in the National Achievement Test (NAT) in SY 2017-2018 through the Bureau of Educational Assessment BEA of the Department of Education in both elementary and secondary levels among the five (5) subjects namely, Science, Mathematics, English, Filipino, and Araling Panlipunan. After analyzing the quantitative data through descriptive statistics, t-test for independent samples, and two-way analysis of variance, qualitative data collection was done to verify the results through focus group discussion and one-on-one interviews. It explored the factors that could have led to the NAT results based on the perspectives of the learners' teachers and school principal.

The study was conducted in the Department of Education, covering two city divisions in the Province of Bukidnon. The NAT Examinees of SY 2017-2018, composed of 349 elementary and 1,158 secondary learners, 106 teachers, and 11 school principals in the selected schools of the City Divisions of Malaybalay and Valencia City, were the participants of the study. The teachers and school administrators were invited for an interview through google forms and online platforms. A focus group discussion was also conducted with selected participants through zoom and google meetings.

Ethical Considerations:

The study adhered to the ethical requirements of the university. All ethical guidelines prescribed by the Research Ethics Committee of the University, the Data Privacy Act, and other mandates were followed, and issues raised by the participating institutions or organizations were addressed appropriately.

The Endorsement of the research study was asked from NEDA, Regional Development Council, and DepEd Region X. Permission to conduct the study was sought from the City Divisions School Superintendent and School Principals. Informed Consent forms were given to parents with the assistance of the teachers. Assent forms were also given to learners who took National Achievement Test in SY 2017-2018. A letter of request from BEA on the data sets stipulating that the examinee number and coding of the schools and divisions were made to ensure confidentiality and anonymity. The researchers explained the essential details to the organization's head, such as the study's objectives and methodology. The names of the schools and learners were not revealed to provide anonymity and confidentiality.

Before the focus group discussion and interview, the researchers assured the participants that any information that would identify them would not be included in the study. It was also stated that the study is voluntary, and they are free to withdraw should they feel any discomfort with no consequence.

Results and Discussions

Performance of the Basic Education Learners in the National Achievement Test (NAT)

The Basic Education Learners at Elementary Level generally performed low on the National Achievement Test. Table 1 shows the data on the competencies and skills the learners achieved in the five subject areas of the National Achievement Test.

Table 1 Performance of Elementary School Learners in NAT

Subject Areas learners=349	Competencies/ Skills	Mean	Standard Deviation	Qualitative Description
Filipino	Problem-Solving	50.37	19.49	Nearly Proficient
	Information Literacy	51.13	20.35	Nearly Proficient
	Critical Thinking	39.57	19.47	Low Proficient
Araling Panlipunan	Problem Solving	31.71	16.67	Low Proficient
	Information Literacy	28.62	14.82	Low Proficient
	Critical Thinking	31.55	18.17	Low Proficient
Mathematics	Problem-Solving	30.24	18.24	Low Proficient
	Information Literacy	41.89	15.09	Low Proficient
	Critical Thinking	28.81	16.70	Low Proficient
Science	Problem-Solving	24.89	13.73	Not Proficient
	Information Literacy	30.28	17.34	Low Proficient
	Critical Thinking	26.04	16.28	Low Proficient
English	Problem-Solving	34.19	19.64	Low Proficient
	Information Literacy	30.21	18.11	Low Proficient
	Critical Thinking	25.66	14.84	Low Proficient
Overall Test	Problem-Solving	34.28	10.88	Low Proficient
	Information Literacy	36.43	10.39	Low Proficient
	Critical Thinking	30.33	9.77	Low Proficient

The data shows that elementary school learners have low proficiency in critical thinking, problem-solving, and information literacy skills in the four subject areas. However, they are nearly proficient in Filipino, particularly in problem-solving (M=50.37, SD=19.49) and information literacy (M=39.57, SD=19.47). Overall, elementary

learners are found to be low proficient in problem-solving (M=34.28, SD=10.88), Information literacy (M=36.43, SD=10.39), and Critical thinking (M=30.33, SD=9.77).

Among the subjects tested with the three 21st-century skills, elementary school learners performed well in Filipino, specifically in information literacy and problem-solving. Learners can identify, assess and use information in the Filipino language efficiently and ethically. The learners can search for Filipino information in books, newspapers, and other materials. Moreover, they can provide situations and issues in the Filipino language for the problem- solving. It signifies that Filipino teachers can provide learning activities that develop learners' information literacy and problem-solving ability.

As revealed in the table, critical thinking got the lowest mean (M=30.33, SD=9.77) in almost all subject areas. It indicates that elementary school learners still need to develop the ability to design and manage projects, solve problems, and make effective decisions using various tools and resources. Learners still need to acquire the competencies of acquiring, processing, interpreting, rationalizing, and critically analyzing conflicting information and issues.

Problem-Solving is another skill that elementary learners perform with low proficiency, especially in tools like Science, Mathematics, Araling Panlipunan, and English. It is vital to be developed among elementary school learners. It would lead the learners to think logically and solve ill-defined problems by defining and explaining the problem; critically analyzing the information available or generating the knowledge needed; framing and testing different theories; formulating innovative ideas, and taking action. These skills are in high demand in the knowledge and digital age.

The standard deviations of the performance of the elementary learners are very high, indicating high dispersion or variation of the learners' performance. The performance of the learners is highly heterogeneous or varied. The scores or performance of the learners are too scattered from the mean.

The 21st century period demands among learners the development of higher-order thinking skills. Teachers must expose learners to activities that promote critical thinking and problem-solving. Critical thinking in the 21st century is described as the "ability to design and manage projects, solve problems, and make effective decisions using various tools and resources" (Fullan, 2013). Drake (2014) highlights the challenge of designing educational experiences that address local issues and real-world problems for which there may be no clear answer. Critical thinking requires students to "acquire, process, interpret, rationalize, and critically analyze large volumes of often conflicting information to the point of making an informed decision and taking action in a timely fashion" (C21, 2012, p. 10). Digital tools and resources can support the process of critical thinking, mainly when used to create authentic and relevant learning experiences that allow students to "discover, create, and use new knowledge" (Fullan & Langworthy, 2014, p. 35).

Table 2 presents the performance of secondary learners in the National Achievement Test (NAT). It shows that the secondary learners in the two City Divisions are mostly low proficient in their performance in the National Achievement Test NAT in the three skills: problem-solving, information literacy, and critical thinking. Nevertheless, they are nearly proficient in the three skills in Filipino; and two skills (information literacy and problem-solving) in Araling Panlipunan with mean scores of 50.92 (SD=16.93) and 54.54 (SD=21.79), respectively. They are also nearly proficient in problem-solving in the English subject (M=52.41, SD=21.89).

Table 2 Performance of Secondary School Learners in NAT

Subject Areas Learners= 1, 158	Competencies/ Skills	Mean	Standard Deviation	Qualitative Description
Filipino	Problem-Solving	57.16	18.89	Nearly Proficient
	Information Literacy	65.86	19.76	Nearly Proficient
	Critical Thinking	56.78	20.13	Nearly Proficient
Araling Panlipunan	Problem Solving	50.92	16.93	Nearly Proficient
	Information Literacy	54.54	21.79	Nearly Proficient
	Critical Thinking	45.01	20.82	Low Proficient

Mathematics	Problem-Solving	39.03	18.20	Low Proficient
	Information Literacy	33.76	18.14	Low Proficient
	Critical Thinking	32.01	15.58	Low Proficient
Science	Problem-Solving	41.61	19.60	Low Proficient
	Information Literacy	38.84	16.90	Low Proficient
	Critical Thinking	34.50	15.29	Low Proficient
English	Problem-Solving	52.41	21.89	Nearly Proficient
	Information Literacy	40.33	18.08	Low Proficient
	Critical Thinking	38.53	16.85	Low Proficient
Overall Test	Problem-Solving	48.22	14.10	Low Proficient
	Information Literacy	46.67	13.76	Low Proficient
	Critical Thinking	41.37	12.38	Low Proficient

Notice that compared to elementary school learners, secondary learners have higher means ranging from 40 to 50. Although still low proficiency, there is a slight increase in the mean scores compared to grade 6 learners' performance, especially in Filipino, Araling Panlipunan, and English. It could be attributed to high school learners' activities and exposures to learning the subjects, which developed and enhanced their information literacy, problem-solving, and critical thinking skills.

Nevertheless, the tool subjects that promote logical thinking and scientific and critical thinking skills like Mathematics and Science still need to be higher, indicating that high school students still need to fully develop the ability to discover, create and use new knowledge.

Comparison of NAT Results when Learners Based on School Sizes and School Divisions

The performance of basic education learners was compared when grouped according to the size of the school, whether small-having nine teachers and below, Medium-having 10 to 21 teachers, and big-having 22 teachers and more. NAT performance was also compared by city division: Malaybalay City and Valencia City.

Table 3 reveals the comparison of the results of the performance of elementary school learners when grouped according to school sizes and school division. It revealed a significant difference in the NAT performance of the elementary school learners when they were grouped as to school sizes. Differences exist in the NAT performance in the three school sizes, small, medium, and large, in favor of the learners who belong to the large school size. The learners in the large schools performed better than those from small and medium schools. It implies that the learners in large schools have been exposed to activities and learning experiences that promote information literacy, problem-solving, and critical thinking. There could be more learning resources available for the large schools than the small and medium schools.

Table 3 Comparison of Elementary School Learners' Performance

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
School_Size	Problem-Solving	9696.971	2	4848.485	23.341	*.000	.039
	Info_Literacy	7694.305	2	3847.153	21.176	*.000	.035
	Critical_Thinking	5444.690	2	2722.345	17.571	*.000	.030
School_ Division	Problem-Solving	12.278	1	12.278	.059	.808	.000
	Info_Literacy	62.757	1	62.757	.345	.557	.000
	Critical Thinking	24.767	1	24.767	.160	.689	.000
School_Size School_Loc	*Problem-Solving	4809.593	2	2404.796	11.577	*.000	.020
	Info._Literacy	2402.302	2	1201.151	6.611	*.001	.011
	Critical Thinking	1665.472	2	832.736	5.375	*.005	.009

Significant at .05 level

It also showed that the NAT performance of the learners is similar when they are grouped as to school location, whether from the City Division of Malaybalay or Valencia. It means that elementary school learners are likely to have the same performance in the NAT in all subject areas that measure the three 21st-century skills.

The same scenario is observed in the performance of secondary learners. Table 4 presents the comparison of the secondary school learners performance when grouped into school size and division. It shows there is a significant difference in their NAT performance when grouped into school sizes. Differences exist in the NAT performance in the three small, medium, and large school sizes, wherein learners from the medium schools performed better than those from the large and small schools. Those who belong to the small schools performed the least. There is no significant difference in the NAT performance of the learners when they are grouped as to school divisions, meaning learners in the two city divisions likely have the same NAT performance regardless of what divisions they belong.

Table 4 Comparison of Secondary School Learners' Performance

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
School_Size	Problem-Solving	4410.295	2	2205.147	11.270	*.000	.019
	Info_Literacy	3521.462	2	1760.731	9.441	*.000	.016
	Critical_Thinking	2295.662	2	1147.831	7.570	*.001	.013
Division	Problem-Solving	44.883	1	44.883	.229	.632	.000
	Info_Literacy	29.077	1	29.077	.156	.693	.000
	Critical_Thinking	1.006	1	1.006	.007	.935	.000
School_Size Division	*Problem-Solving	1.053	1	1.053	.005	.942	.000
	Info_Literacy	6.106	1	6.106	.033	.856	.000
	Critical_Thinking	242.380	1	242.380	1.598	.206	.001

Significant at .05 level

The findings hold in the larger context. According to UNICEF & SEAMEO (2020), learners in larger schools, in well-resourced locations or with a textbook for each child, performed better than children in smaller, less well-resourced schools. Across the six participating countries, most children (87%) attended schools with one textbook per child in Grade 5 for language and mathematics lessons. In Lao PDR and the Philippines, around 20% of children shared a reading or mathematics textbook in Grade 5, sometimes with more than two children. In addition, Hill, Bloom, Black, & Lipsey (2008) observed that smaller classes received about three months more schooling than the students in the regular classes. Woessman and West (2006) further find educationally meaningful effects of smaller classes in a small number of countries, a roughly even split between no effects and minor effects in the remainder of the countries. Interestingly, the countries where they find educationally meaningful positive effects of smaller classes are those with low teacher salaries and lower-than-average performance on international exams.

Factors that Lead to the NAT Performance of the Basic Education Learners Based on the Perspectives of their Teachers and School Administrators

The school administrators and teachers identified three factors contributing to the performance of the basic education learners in the NAT. These were the *learners themselves, the school curriculum, and familial-environmental factors.* Tables 5, 6, and 7 present the participants' responses when asked what factors could have contributed to the NAT Performance of basic education learners.

Table 5 presents the responses of the school principals and teachers on why the learners themselves are one of the factors that lead to the NAT performance of elementary and secondary school learners. On top of the responses with the highest frequency were *learners who were unmotivated and uninterested in learning; learners lack reading comprehension skills; social-emotional problems, and poor study habits*.

Table 5 Learners Themselves as a Factor affecting NAT Performance

Responses of Teachers and School Administrators (N=117)	Frequency	Percentage
Learners should have shown more interest in the importance of NAT and learning in general. They need to be more motivated to learn.	106	90.59%
Learners need to gain reading comprehension skills. They have not mastered the necessary academic skills to pass the NAT.	104	88.88%
Learners have poor study habits and lack focus	91	77.78%
Absenteeism, truancy, and poor attendance in school.	88	75.21%
Learners experienced social and emotional adjustments and problems.	92	78.63%
Negative Attitudes towards school.	82	70.08%
Learners need more engagement in online games and social media.	82	70.08%
Needs retention/memory gaps.	81	69.23%

Many participants responded that learners *lack willingness and interest in answering the questions in the NAT because of the mentality that "it does not affect their grade ."*They answer the test questions without understanding, make unintelligent guesses, and need to be more careful in answering the test. They do not value the task since it is separate from their grades in any subject. Generally, having negative attitudes toward school could lead to poor performance on tests.

It confirms the findings of UNICEF & SEAMEO (2020), which reported that most children had high-interest levels in school. On average, children who felt better and safer at school performed better than children who reported fewer positive feelings. About 80% or more of children in all countries expressed positive attitudes about school. However, students comprising 10% of them across all countries and up to 20% in some countries have reported not feeling comfortable at school and having a negative attitude towards school.

Participants elaborated on their concerns by saying:

The factors that may have affected the performance of the learners in NAT is the student's behavior where their study habits and exposure to technology may have effects on their study. This is because they spend more time with their gadgets doing Facebook, Twitter, Youtube, Tiktok, and etc. rather than scan to their notes and read the books they have.

Reading is one very essential academic skill. Participants shared during the focus group discussion that the NAT performance might be due to the *learner's lack of reading comprehension skills. Mastery of these necessary academic skills is essential to pass the NAT*. The school principal added that the *need to develop students' ability to think critically, analyze, and comprehend questions to achieve the best answer in each item and completion of tasks within the time frame in the NAT is significant. Hence, learners need to be excellent readers.*

The participants emphasizing student factors as contributing to learners' NAT performance is very much related to the propositions of Hattie (2003). He declared that the students account for the most significant percentage of the variance of one's achievement (50%). He said that it is what the students bring to the table that predicts achievement more than any other variable suggesting in his discussion that IQ still explains the "trajectories of learning" among learners.

Another factor identified by the participants as contributing to NAT performance is the implemented curriculum. Table 6 reveals the participants' responses on curriculum as contributing to the NAT performance results of basic education learners. Participants shared their sentiments about the curriculum needing more relevance in content; limited exposure of learners to various assessment types; insufficient review materials and resources; insufficient mentoring and coaching activities; and others.

Table 6 The Implemented School Curriculum as a Factor on NAT Performance

Responses of Teachers and School Administrators (N=117)	Frequency	Percentage
Too much content/congestion of learning content and topics	94	80.34%
Lack of review materials and not enough time for review	98	83.76%
Topics or skills tested are not taught.	91	77.78%

Lack of technological tools and learning resources	81	70.43%
Limited exposure to different types of examinations.	105	89. 74%
Insufficient mentoring and coaching activities	90	76.92%
Disruption of classes	85	72.64%
Teachers are not integrating or considering multiple intelligences and learners' situations	88	75. 21%
Limited assessment types and tools used.	107	91.45%

According to the participants, learners might need help to retain key concepts and skills due to the many topics they have to study, which may not be assessed in the NAT. Participants espoused that:

> Some topics included in the National Achievement Test were taken a few years ago, and students need more time to recall the topic. Too much content; there is congestion that makes it hard for the students to understand.

School principals shared some suggestions on the issue. They share some actions that could be taken to improve the implementation of the curriculum.

> Give students the pre-test and post-test materials so teachers can identify what topics the students need to improve. The teachers also have peer-to-peer teachings, in which students were grouped based on the subjects they got high scores, so those students who got high scores will teach those students who got low scores. The tutor would gain extra points if their tutee scored higher in the post-test. By this, all the students that got low scores will be entertained and be more motivated to learn.

A group of teachers and school leaders also shared, "*There must be assurance in the preparation of the lessons, the curriculum guide is followed, and mastery of the competencies is achieved. Then, an intensive review is conducted by different teachers of the core subjects in all the grade-level curricula. It is a concerted effort of the administration, teachers, learners, and stakeholders. They are also exposed to the different testing styles to prepare for taking and answering examinations.*"

Table 7 reveals the participants' responses on the familial and environmental factors contributing to the NAT performance results. Learners are considered vulnerable individuals who quickly get distracted regarding family problems and those surrounding them. Most participants, teachers, and school leaders shared that learners are affected by the family's financial and socioeconomic status and other problems.

A group of teachers shared that many of their learners would come to school with an empty stomach and without school materials. They shared:

> "*We sympathize with our learners Ma'am. Many of our pupils come to school with an empty stomach, no snacks or allowance. The others do not have pencils and papers. There are also others who are interested to come to school but were asked by their parents to stay at home to watch over their younger siblings because they have to work on the farm*". (*Maluoy biya gyud mi Ma'am. Daghan sa among mga learners moeskwela nga walay kaon, walay balon. Ang uban walay lapis ug papel. Naa puy mga bata nga gusto ug kursonada kayo moeskwela pero ipaabsent sa ginikanan kay ipabantay sa mga manghod kay magtrabaho sa uma ang ginikanan*").

Table 7 Familial and Environmental Factors as Contributory Factors of NAT Performance

Responses of Teachers and School Administrators (N=117)	Frequency	Percentage
Family problems may have led learners to get distracted.	104	88.89%
Socioeconomic status/poverty/financial problems.	98	83.76%
Lack of parental guidance or poor parenting.	91	77.78%
Teachers are bombarded with other teaching-related activities	81	69.23%
Influenced by peers to engage in social media and online games.	101	86.32%
Presence of gadgets and other technological tools	90	76.92%

The teachers shared that poverty and the difficult circumstances of the family of the learners may affect the learners' well-being which may influence their academic performance more so in the taking of their National Achievement Test.

Some researchers determined the factors that influence students' achievement. These are students' gender and socioeconomic status (SES) (Ewumi, 2012; Özdemir et al., 2014), parental involvement (Sheldon & Epstein, 2005), environmental factors such as school or classroom climate (Malik & Rizvi, 2018), and students' self-efficacy (Peters, 2012). Choi and Chang's (2011) revealed that parents' educational level significantly positively affected students' performance. It may not only hold in Mathematics but also other subject areas.

The familial and environmental factors are also exposed in the larger context. More extensive data in Southeast Asia support the participants' claims. UNICEF and SEAMEO (2020), in the document of the Southeast Asia Primary Learning Metrics, found that most children had high levels of interest in school and, on average, children who felt better and safer at school performed better than children who reported less positive feelings. In all countries, higher levels of parental engagement were associated with higher reading, writing, and mathematics scores in children. Half of the children reported that their parents motivate them to succeed in school (47%). Around one-third reported that their parents ask them about what they are learning in school (34%). Around one-quarter reported that their parents help them with their homework (27%). However, many children suggested that their parents rarely or never engage in these activities. Around one-third of children attended a school where teachers reported that children's hunger in class (34%) or lack of sleep (32%) were issues affecting their learning. In some countries, a higher percentage of teachers reported these factors. Children reported a high percentage of teacher absenteeism and lateness in several countries. In Viet Nam, children's perceptions of teachers were more positive than of children in other countries, with less than 1 in 10 (9%) reporting that their teacher was often or sometimes absent, compared with 38% to 58% across other countries, and 14% reporting that their teacher was often or sometimes late, compared with 51% to 67% across other countries.

In local settings, Barroso, Añar & Manlagaylay (2022) observed that cognitive, psychological, physical, and material well-being dimensions directly affect students' academic performance, while the social dimension indirectly affects students' performance. NAT takers with higher cognitive, psychological, social, and material well-being perform better academically. The study further reported that when students feel accepted, willing to work and listen to others, have not experienced bullying, and have strong parental support and communication; their academic performance will more likely increase.

Conclusion

1. The learners in the elementary and secondary levels still need to fully develop the 21st-century skills needed to attain the learning standards the Department of Education sets.

2. School size contributes to the learners' performance in the National Achievement Test. Hence, this factor can be considered in addressing school and learners' needs and provision of educational resources.

3. School administrators and teachers see the learners themselves, curriculum, and familial or environmental factors to have led to the performance of the basic education learners in the National Achievement Test.

Recommendations

1. Enhance the way that 21st-century skills are incorporated into the teaching and learning processes, with a focus on information literacy, problem-solving techniques, and critical thinking. This can be done by utilizing developmentally appropriate pedagogical strategies and techniques and keeping abreast with the educational technologies.

2. Teachers in all subject areas are encouraged to use various assessment tools to measure learners' performance, provide exposure to learners of the competencies in the NAT, and enhance their test-taking skills. Utilization of digitized assessment tools like google quiz, google forms, Quizziz, Kahoot, and others can be used in the new normal.

3. Schools may undertake a contextualized Guidance and Values Formation Program in collaboration with other aid organizations to strengthen students' positive attitudes and values during and after the pandemic. It could be accomplished by utilizing a variety of wired and wireless systems.

4. Parents, local government agencies, DepEd, and other non-governmental organizations working together effectively could support NAT reviews, remediation, or enrichment programs for students. These exercises might not be restricted to subjects or material for grade levels or key stages. But they might also involve developing values, assessing 21st-century skills, and enhancing reading comprehension.

5. The school divisions may lead an initiative (which may be led by districts) to review the curriculum and identify the key learning outcomes (content and performance standards) in order to streamline the curriculum and bring it into compliance with national and international standards. This initiative will be handled by the Chief Curriculum Implementation.

6. Institutionalize in the schools through its Learning Action Cells (LAC) sessions the sharing good or best teaching practices that could enhance the NAT results of the learners.

7. Based on the data and the types of learners they have, the Department of Education, through its school administrators and teachers, may use the results of the National Achievement Test to create and implement intervention programs.

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