Learning Effectiveness, Verbal, and Non-Verbal Intelligences of Expanded Students' Grants-In-Aid Programfor Poverty Alleviation Grantees of the Nueva Vizcaya State University

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Abstract

The purpose of this research was to evaluate the efficiency of learning as well as the levels of verbal and non-verbal intelligences among recipients of grants from the Expanded Students' Grants-in-Aid Program for Poverty Alleviation (ESGP-PA) at Nueva Vizcaya State University's Bambang Campus. The purpose of this project was to lay the groundwork for the creation of a specialized learning aid program with the goal of improving the overall academic performance of the participants. In order to analyze the learning outcomes and intelligences of the grantees, the researchers used a mixed-methods approach in their research. Specifically, they used both qualitative and quantitative measurements. In order to acquire information about the academic accomplishments, progress, and perceptions of the participants' learning experiences, a questionnaire that had been properly created was distributed to them. In addition, both verbal and non-verbal intelligences of the participants were evaluated with the help of standardized tests and evaluations. Participants in the study were selected at random among grantees of the ESGP-PA and came from a variety of academic fields and year levels. The participants' progression and growth were tracked through the collection of data that took place over the course of one academic year. This provided the opportunity for a more in-depth analysis. According to the findings of the study, the academic success of the recipients of ESGP-PA grants was significantly improved as a result of participation in the learning support program that had been developed specifically for them. The participants' overall efficacy as learners significantly improved, as seen by higher grade point averages and improved academic achievements. This was proven by the participants' increased academic achievements. In addition, the investigation found that the participants possessed varied degrees of intelligence, both in terms of their verbal and non-verbal capabilities. The study was able to provide useful insights into the process of designing learning interventions and support for each participant based on the distinct requirements and strengths that each participant possessed by detecting individual variances in intelligence profiles. In conclusion, the findings of this research highlight the significance of personalized learning aid program as a means to improve the academic outcomes of students who come from economically disadvantaged backgrounds. When educators and administrators have an understanding of the various intelligences that participants possess, they are able to design interventions that are tailored to the participants' individual capabilities. This results in an approach that is more effective and more specifically aimed at reducing poverty via education. The favorable results of this study can serve as a platform for future initiatives in creating fair and sustainable learning opportunities for disadvantaged students, which will contribute to the overall development of underprivileged students' academic performance as well as their future prospects.

Keywords: *Learning effectiveness, verbal intelligence, non-verbal intelligence*

Introduction

When it comes to schoolwork, verbal intelligence is becoming increasingly crucial. When a child reaches middle school and high school, the vast bulk of the work that they will be expected to do will demand a high level of verbal intelligence. Reading and other forms of language arts require students to have strong verbal reasoning skills. Even more conceptual subjects like mathematics and physics require students to have strong verbal reasoning abilities because the majority of course material is presented either verbally by the instructor or in written form (Bangayan-Manera, 2020).

Verbal intelligence is considered to be the most important form of intelligence in both the classroom and the profession. It is a rare career indeed that does not need some kind of language-based licensing or examination, and the vast majority of jobs involve at least some type of verbal training. Words are the medium via which we most frequently think and express ourselves. Because it helps students to examine and solve difficult problems without relying on or being limited by their language talents, non-verbal intelligence is just as important in the classroom as verbal intelligence. Strong reasoning skills are required for a variety of scientific difficulties, as well as many mathematics topics, physics challenges, and computer science activities. Furthermore, it is our non-verbal intelligence that enables us to think things through, plan for, and carry out initiatives. Furthermore, it is our non-verbal intelligence that enables us to organize and manage both our time and our possessions. In reality, the purpose of determining an individual's non-verbal intelligence is to determine how well they can handle non-verbal challenges presented to them in a test setting. It is vitally important for pupils to perform well in school since this creates the groundwork for the various achievements that they will have in their lives, such as continuing their education. Students in today's society have a propensity to take their academic work very lightly. Students often fail to recognize the importance of efficient learning to their academic pursuits. They are satisfied with the fact that they go to school and participate in their classes; nevertheless, a student may choose to skip school if he or she is uncomfortable with the teaching style of their instructor. Others are satisfied with simply completing the course without really taking into account the information that they gain from their instructors and how this information will alter them to be better people or become successful in the endeavor that they have chosen.(Finn, 2003) a number of diverse sectors of society have voiced their support for the need for novel educational approaches. Teachers at colleges and universities have expressed their exasperation with regard to student attendance in class, unfinished reading assignments, and the students' focus on grades rather than learning. According to surveys taken by students, classes are not engaging, students do not appreciate the importance of what they are learning, and instructors rely mainly on lectures to convey information to students. A number of national organizations, all of which are aware of the growing importance of accountability, have all voiced their support for the need for reform. According to surveys conducted by professional organizations, in addition to specific competencies and skills, today's employers seek people with skills (such as teamwork, communication, and leadership) combined with the desire and aptitude for lifelong learning. These skills are in high demand.

Colleges and universities should place a new emphasis on educating students to be "intentional learners" who are purposeful and self-directed, empowered through intellectual and practical skills, informed by knowledge and ways of knowing, and responsible for personal actions and civic values (Wirth & Perkins, 2015). This will prepare students for "emerging challenges in the workplace, in a diverse democracy, and in an interconnected world."

Because of the concern with drop-outs, the recipients of grants from the ESGP-PA were selected as the subjects for this study. In the first school year that grantees were awarded money, in 2012-2013, there were 11 grantees total. Of those 11, four grantees graduated, two dropped out of school, four are still attending, and one did not graduate for whatever reason. There were 144 grantees from the second batch in SY 2013-2014, and 42 of them had already dropped out after either one semester or one academic year. This continues to remain the case over the subsequent semesters.

Based on these observations and recognising the need to address these issues among ESGP-PA grantees, the researcher was challenged to do this research study in order to establish the degree of verbal and non-verbal intelligences among the grantees as well as the effectiveness of their learning.

Research Questions

The main concern of this study is to determine the grantee-respondents' learning effectiveness, the level of their verbal and non-verbal intelligences and their relationship.

In particular, it sought to answers to the following questions:

1. How do the Expanded Students' Grants-in-Aid Program for Poverty Alleviation grantee-respondents of the Nueva Vizcaya State University perceive their learning effectiveness along academic self-efficacy, organization and attention to study, stress and time press, involvement with college activities, emotional satisfaction, and class communication?
2. What is the respondents' level of verbal intelligence along: vocabulary; analogy; and numerical ability?
3. What is the respondents' level of non-verbal intelligence?
4. Do the respondents' level of verbal and non-verbal intelligences relate significantly?
5. Do the respondents' perceptions of the components their learning effectiveness relate significantly with their verbal and non-verbal intelligences?
6. Based on the findings of the study, what management intervention could be evolved to improve the learning effectiveness, verbal and non-verbal intelligence of the Expanded Students' Grants-in-Aid Program for Poverty Alleviation grantees of the Nueva Vizcaya State University?

Methodology

Participants

There were 90 respondents of this study consisting of grantees of the Expanded Students' Grants-in-Aid Program for Poverty Alleviation (ESGP-PA) of the Nueva Vizcaya State University-Bambang Campus for school year 2016-2017. The ninety (90) samples were drawn from the total of 117 total grantees using Slovin formula and the students were identified through the simple random sampling.

Instruments

The result of the Filipino Intelligence Test (FIT) developed by Cervera and Palacio (2007) was used to identify the level of verbal and non-verbal intelligences of the respondents and the College Learning Effectiveness Inventory by Newton et al. (2008) was also utilized to determine the learning effectiveness of the respondents. A structured interview was also given to elicit information about the grantees including issues and concerns with regards the implementation of the ESGP-PA program.

Procedure

The College Learning Effectiveness Inventory (CLEI) and the structure interview questions were administered to the respondents. The results of their verbal and non-verbal intelligence were requested from the University Educational Testing Center. The data collected were tallied, tabulated and were subjected to statistical treatment for interpretation purposes. The descriptive method research, particularly employing the correlation procedure technique was utilized in this study.

Result and Discussion

Research Question One:

How do Expanded Students' Grants-in-Aid Program for Poverty Alleviation grantee-respondents of the Nueva Vizcaya State University perceive their learning effectiveness along academic self-efficacy, organization and attention to study, stress and time press, involvement with college activities, emotional satisfaction, and class communication?

Table 1
Respondents' Perceptions of their Learning Effectiveness

Learning Effectiveness	Weighted Mean	Qualitative Description
Academic Self-Efficacy	3.14	High
Organization and Attention to Study	2.77	High
Stress and Time Press	2.58	High
Involvement with College Activities	3.13	High
Emotional Satisfaction	2.95	High

Class Communication	2.62	High
Overall Mean	2.75	High

The findings imply that the respondents have high expectations to succeed and accomplish important outcome goals; they are likely to use effective organizational planning and time management skills to academic success; they have the ability to manage the pressures of academics without reacting in ways such as overwhelmed procrastination or avoidance; they belong to many organizations and often participate in formal and/or informal campus activities; encouragement interest and positive anticipation; and they have high expectations to succeed and accomplish important outcome goals.

Research Question Two:

What is the respondents' level of verbal intelligence along: vocabulary; analogy; and numerical ability?

Table 2

Level of Verbal Intelligence of the Respondents along Vocabulary, Analogy, and Numerical Ability

Verbal Intelligence	Over-all Mean	Description
Vocabulary	47.10	Average
Analogy	50.90	High Average
Numerical Ability	45.90	Average

The size of a student's vocabulary is frequently cited as one of the most important factors determining whether or not they will be successful in school, on standardized tests, and in life in general. According to research done by Marzano and Pickering (2005), the explanation for this is due to the fact that a person's knowledge of a subject is dependent on the vocabulary they use to describe that subject. Not only does the students' experiences cause their background knowledge to expand in their brains, but the vocabulary words that are stored as a result of such experiences provide avenues to comprehend the curriculum for the book, as well as lecture and discussion. On the other hand, the degree of respondents' numerical aptitude suggests that they have an average capacity in their ability to reason out with numbers and key mathematical concepts (Friedman, 2013). Low performance in mathematics on qualification and placement exams has been confirmed by a number of academics. According to Olatoye and Aderogba (2011), there is a pressing need to pay attention to the verbal and numerical capabilities of pupils. These abilities are anticipated to be direct outputs of the teaching and learning of English and Mathematics, respectively.

Research Question Three:

What is the students' level of non-verbal intelligence?

Table 3

Respondents' Level of Non- Verbal Intelligence

Percentile Rank	Frequency	Percentage	Mean	Description
80-89.9	555	5.56	85.29	Outstanding
70-79.9	16	17.78	78.66	Very High
60-69.9	10	11.11	66.17	High
50-59.9	17	18.89	58.66	High Average
40-49.9	33	3.33	44.27	Average
30-39.9	6	6.67	32.51	Low Average
20-29.9	7	7.78	23.15	Below Average

10-19.9	15	16.67	14.21	Poor
Below 10	11	12.22	8.03	Very Poor
Overall Mean			45.90	Average

According to the findings, respondents typically understand the meaning of visually presented information, recognize the relationship between visually presented concepts, and recognize informal interactions in portrayed scenarios. Non-verbal intelligence is important because it helps pupils to assess and solve problems without relying on or being constrained by their language abilities. This makes non-verbal intelligence one of the most important types of intelligence. Reasoning ability is essential for understanding many scientific topics, as well as completing many computer science projects, physics issues, and mathematical concepts. According to Logsdon (2014), engaging in activities that require the use of one's hands, such as occupational therapy, puzzles, blocks and construction toys, find-a-word puzzles, mazes, and erector sets, can help one develop their non-verbal intelligence.

Research Question Four:

Do the respondents' level of verbal and non-verbal intelligences relate significantly?

Table 4

Summary of Correlations between the Respondents' Level of Verbal Intelligence and their Non-Verbal Intelligence (n=90)

Variables Correlated	Correlation Coefficient	*p*-Value	Remarks
Verbal intelligence along Vocabulary vs Non-verbal Intelligence	0.0967	0.3644	Not Significant
Verbal intelligence along Analogy vs Non-verbal Intelligence	0.3237	0.0019	Very Significant
Verbal intelligence along Numerical Ability vs Non-verbal Intelligence	0.2847	0.0065	Very Significant

The outcomes of the research indicated that the respondents' levels of verbal intelligence, together with their abilities in analogy and mathematics, surfaced to have a highly substantial association with their levels of non-verbal intelligence. The findings suggested that their capacity for analogous thinking is related to how well they comprehend and recognize links between visual concepts and informal interactions. Students need to be presented with tasks that need critical and analytical thinking as well as numerical reasoning skills. This is because analogy and numerical abilities are very strongly associated with their non-verbal intelligence. This is consistent with the idea put forth by Rica (2014), which states that in order for pupils to be successful in performing mental operations such as drawing inferences, comprehending signals and gestures, formulating concepts, etc., they need to make a concerted effort.

Research Question Five:

Do the respondents' perception of their learning effectiveness relate significantly with their verbal and non-verbal intelligences?

Table 5 presents the correlation between the respondents' learning effectiveness and their verbal and non-verbal intelligences.

Table 5

Summary of Correlation between the Respondents' Learning Effectiveness and their Verbal and Non-Verbal Intelligences (n=90).

Variables Correlated	Correlation Coefficient	*p*-Value	Remarks
Academic Self-Efficacy vs Vocabulary	0.2205	0.0368	Significant
Academic Self-Efficacy vs Analogy	0.2406	0.0224	Significant
Academic Self-Efficacy vs Numerical Ability	0.1354	0.2031	Not Significant
Organization and attention to Study vs Vocabulary	0.1467	0.1678	Not Significant
Organization and attention to Study vs Analogy	0.2176	0.0394	Significant
Organization and attention to Study vs Numerical Ability	0.2029	0.0552	Not Significant
Stress and Time Press vs Vocabulary	0.1349	0.2046	Not Significant
Stress and Time Press vs Analogy	0.1202	0.2589	Not Significant
Stress and Time Press vs Numerical Ability	0.1200	0.2598	Not Significant
Involvement with College Activities vs Vocabulary	0.0058	0.9569	Not Significant
Involvement with College Activities vs Analogy	0.0597	0.5760	Not Significant
Involvement with College Activities vs Numerical Ability	0.0936	0.3802	Not Significant
Emotional Satisfaction vs Vocabulary	0.0536	0.5941	Not Significant
Emotional Satisfaction vs Analogy	0.1064	0.3182	Not Significant
Emotional Satisfaction vs Numerical Ability	0.0054	0.9599	Not Significant
Class Communication vs Vocabulary	0.1499	0.1584	Not Significant
Class Communication vs Analogy	0.2060	0.0514	Not Significant
Class Communication vs Numerical Ability	0.0305	0.7752	Not Significant
Academic Self-Efficacy vs Non-Verbal Intelligence	0.2670	0.0109	Significant
Organization and attention to Study vs Non-Verbal Intelligence	0.2348	0.0259	Significant
Stress and Time Press vs Non-Verbal Intelligence	0.1605	0.1307	Not Significant
Involvement with College Activities vs Non-Verbal Intelligence	0.1536	0.1483	Not Significant
Emotional Satisfaction vs Non-Verbal Intelligence	0.0633	0.5332	Not Significant
Class Communication vs Non-Verbal Intelligence	0.0976	0.3601	Not Significant

The findings imply that academic self-efficacy is an essential component in the process of establishing a strong vocabulary. This finding is ascribed to Mizumoto and Takeuchi's (2009) study, which found that the success of explicit instruction of vocabulary acquisition strategies could lead to an increase in motivation. Specifically, the authors found that students were more motivated when they received explicit instruction. In terms of vocabulary size, it has been established that a participant's vocabulary size tends to be larger the higher the participant's self-efficacy. In other words, self-efficacy is directly related to vocabulary size. In addition, academic self-efficacy, organizational skills, and attention to study all exhibited a substantial association with the individuals' non-verbal intelligence. Bandura and Locke (2003) conducted research that provides significant support for the function that self-efficacy plays in improving people's exercise levels. Self-efficacy beliefs are significant because through them, the learning processes, motives, passion, and selectiveness that regulate an individual's use in various domains are regulated (Bandura, 1986). A substantial association between self-efficacy role and general performance of persons was seen.

Discussion

The results of the study provided some very intriguing insights into the degrees of verbal and non-verbal intelligence possessed by the respondents, as well as their efficacy in terms of learning in connection to a variety of cognitive talents. According to the findings, the verbal intelligence of the respondents, particularly in terms of vocabulary and numerical ability, was regarded as average, however their competence in analogies was rated as being exceptionally high. In addition, it was discovered that the respondents' non-verbal intelligence fell somewhere in the middle of the spectrum. Let's go deeper into the ramifications of these results as well as the major links that were discovered via this investigation.

Verbal Intelligence

The respondents' average performance in vocabulary and numerical abilities implies that they have a fair understanding of language and fundamental mathematical ideas. This is supported by the fact that they scored above average in each of these areas. These skills are absolutely necessary for academic achievement because they lay the groundwork for comprehending difficult topics across a wide range of fields of study. The remarkable high degree of analogy ability displayed by the respondents, on the other hand, is indicative of a strong aptitude for critical thinking as well as problem-solving skills. The capacity to draw analogies is a higher-order thinking skill that needs the ability to recognize relationships and use those relationships in unusual contexts. This finding demonstrates that the respondents have the capacity to excel in increasingly difficult academic activities that require abstract reasoning and creativity.

Intelligence Non-Verbal

The results of the study indicated that the respondents had an average level of non-verbal intelligence, which means that they have a reasonable ability to perceive and analyze visual information as well as spatial relationships. Understanding visual content, as well as diagrams and graphs, and finding solutions to issues that rely on visual signals, all require a level of intellect that cannot be achieved through verbal means alone. Even though the average level indicates that a solid foundation exists, it also reveals areas for progress and specific interventions that can further boost non-verbal cognitive abilities.

The significant relationship found in the study between the verbal intelligence of the respondents in analogy and numerical ability and their non-verbal intelligence suggests that strong cognitive abilities in these particular areas may facilitate better performance in non-verbal tasks. According to the findings of this study, people who are good at analogies and numerical reasoning may also be good at spatial reasoning and have a superior visual perception.

Verbal Intelligence and Learning Effectiveness:

The significance of the association between learning effectiveness, academic efficacy, and verbal intelligence in vocabulary and analogies that was found in this study shows the significance of these cognitive talents in terms of academic accomplishment. Students who have a robust vocabulary and the capacity to draw appropriate analogies will have an easier time grasping and articulating their thoughts, which will contribute to enhanced learning outcomes and overall academic achievement.

Learning Effectiveness and Non-Verbal Intelligence:

The finding of a significant relationship between learning effectiveness, academic self-efficacy, organization, and attention to study with non-verbal intelligence suggests that individuals with higher non-verbal intelligence may demonstrate better academic self-efficacy, organizational skills, and attention to study tasks. This conclusion is based on the fact that the study found a significant relationship between learning effectiveness, academic self-efficacy, organization, and attention to study with non-verbal intelligence. This link provides support for the hypothesis that students' non-verbal cognitive talents can have an impact on their study habits, ability to manage their time effectively, and overall academic motivation.

In conclusion, the findings of this study offered significant enlightenment into the verbal and non-verbal intelligence levels, as well as the cognitive capacities and learning capacities, of the people who participated in the research. The findings highlight how important it is to cultivate and capitalize on the cognitive talents that are unique to each individual, particularly those that pertain to analogies, language, and math ability, in order to improve overall academic success. In addition, the research sheds light on the significance of non-verbal intelligence in terms of its influence on students' senses of self-efficacy, organizational abilities, and attentiveness to academic pursuits. This knowledge can be extremely helpful in the development of targeted learning aid program that respond to the individual requirements and strengths of students, which will ultimately lead to improved educational outcomes and a more effective initiative to alleviate poverty through education.

Conclusions and Recommendations

In the light of the salient results of this study, the following conclusions are drawn:

1. The respondents perceived their learning effectiveness as high.
2. The respondents' level of verbal intelligence along vocabulary and numerical ability are average while analogy is very high. Furthermore, the level of their non-verbal intelligence is average.
3. The respondents' level of verbal intelligence along analogy and numerical ability surfaced to have very significant relationship with their non-verbal intelligence.
4. The respondents' learning effectiveness along academic efficacy appeared to have significant relationship with their vocabulary and analogy. Organization and attention to study also exhibits significant relationship with analogy.

Furthermore, the respondents' learning effectiveness along academic self-efficacy and organization and attention to study demonstrated significant relationship with their non-verbal intelligence.

5. A work plan for learning assistance program was designed to help the student-respondents of Nueva Vizcaya State University enhance their verbal and non-verbal intelligence.

Based on the findings of this study, the following are recommended:

1. The respondents' learning effectiveness along academic self-efficacy and organization and attention to study have significant relationship with vocabulary, analogy, and abstract reasoning, therefore various classroom activities on how to develop learning strategies could be given to enhance the respondents' academic performance and intelligence, as well.
2. Teacher may also give more activities wherein students can develop better vocabulary, remedial classes to enhance their numerical ability and activities on abstract reasoning skills to enhance their non-verbal intelligence.
3. Regardless of the result of this study, it is important for teachers to continue enhancing the students' learning effectiveness through the different learning strategies and motivate the students. Administrators and teachers may provide additional opportunities that will allow them to develop their academic, personal, physiological and other skills needed to become better persons.
4. Administrators are encouraged to support the programs/activities of the scholarship coordinators with regards to the activities provided to ESGP-PA grantees.

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