EXCELLENCE IN EDUCATION JOURNAL

Volume 7
Issue 2

EEJ®

The Excellence in Education Journal
Website: www.excellenceineducationjournal.org
Email: eejeditor@gmail.com

EEJ publications present a variety of viewpoints. The views expressed or implied in this journal are those of the authors and should not be interpreted as official positions of the EEJ.

All Web links in this journal are correct as of the publication date but may have become inactive or otherwise modified since that time. If you notice a deactivated or changed link, please email eejeditor@gmail.com with the words "Link Update" in the subject line. In your message, please specify the issue.

Manuscript submission guidelines can be viewed on the website at:
www.excellenceineducationjournal.org

All Web links in this journal are correct as of the publication date but may have become inactive or otherwise modified since that time. If you notice a deactivated or changed link, please email eejeditor@gmail.com with the words "Link Update" in the subject line. In your message, please specify the issue.

Manuscript submission guidelines can be viewed on the website at:
www.excellenceineducationjournal.org

If you are interested in serving as a reviewer for this journal, please email your request and your curriculum vitae/resume to eejeditor@gmail.com. A sample paper for review will be emailed to you.

From the Editor

The *Excellence in Education Journal* is an open access, refereed, online journal that promotes and disseminates international scholarly writing about excellent practices in all aspects of education. Eight years ago, this journal was founded with the goal of sharing these practices to benefit the education of children and adults worldwide**.** We encourage teachers, professors, and other professionals worldwide to write about practices that promote the improvement of education. Submissions are double-blind, peer reviewed and are accepted year round with publication occurring twice annually.

In support of our mission, we provide assistance with writing and formatting in English to international writers who seek our assistance with preparing their manuscripts. There are no fees to submit or publish manuscripts so that cost will never be a barrier. Typeset and graphics are intentionally simple in order that the journal can be more easily accessed on a variety of devices worldwide to fulfill the mission of the journal.

I hope that the practices discussed in this journal will be helpful to you, our readers.

Ann C. Gaudino, Ed.D., Founder and Editor-in-Chief
eejeditor@gmail.com

TABLE OF CONTENTS

School Resources and Learning Outcomes: An Empirical Study of Rural Public Schools

Bushra Rahim

Abstract

This paper explores the association between school-level factors and learning outcomes of children in 361 rural public primary schools of Khyber Pakhtunkhwa (KP) Province, Pakistan. Two datasets have been used for the purpose: Education Management Information System (EMIS) for school- level factors and Annual Status of Education Reports (ASER) for student learning outcomes. The analysis reveals that school size, multigrade schools, teachers' qualification and teachers' attendance are significant predictors of children's numeracy and English reading skills whereas teachers' qualification and teachers' attendance, were found significant across all the three proficiency levels- reading Urdu, reading English and two-digit subtraction.

Keywords: rural primary schools, school resources, learning outcomes, developing countries.

Bushra Rahim, Ph.D. is Deputy Director, Ministry of Home and Tribal Affairs, Government of Khyber Pakhtunkhwa (KP), Pakistan. She can be reached at Bushra.rahim@fulbrightmail.org.

The number of out-of-school children is on a decline since the turn of the millennium. The latest Education for All Global Monitoring Report (UNESCO, 2017a) shows that the number of primary school-age children who are out-of-school has decreased significantly from 100 million in 2000 to 61 million in 2015. However, despite improved access to primary education, evidence is increasing that primary education is failing children, especially in developing countries. With overcrowded classrooms, and with insufficient classroom resources and teachers, large numbers of children drop out from schools without learning to read a single word. Recent UIS data (2017) show that 68% of the children enrolled in schools (262 million out of 387 million) will not be able to achieve minimum proficiency levels in reading at the end of the last grade of primary. To tackle the global learning crisis, it is of fundamental importance to gain a better understanding of the factors that influence the learning outcomes of children, especially in the developing world.

Review of literature reveals that four major factors affect learning outcomes. These factors have been categorized into individual, household, school, and system-level factors. Provision of quality education to all children is the prime responsibility of the state as has been pledged by many countries around the world at the World Education Forum, held in the Republic of Korea in May 2015, through the Incheon Declaration for Education 2030 (UNESCO, 2015). By taking up this responsibility, the state must cater to the educational needs of all the children and ensure quality learning outcomes for all throughout their lives. Hence, this study situates the low learning outcomes in the context of systematic factors that fail to maximize the educational outcomes of children.

The 1973 Constitution of Pakistan declared education a fundamental human right. Article 25-A of the Constitution ordains that the state shall provide free and compulsory primary

and secondary education to all children, from age 5 to 16 years. Pakistan's recent national commitments towards education include the National Plan of Action (2013-16), National Education Policy (1998-2010, 2009, 2017-25), and Vision 2030. Similarly, international agreements signed and ratified by Pakistan include the United Nations Universal Declaration of Human Rights (1948), Beijing Declaration and Platform for Action (1945), World Declaration on Education for All (2000), Dakar Framework for Action (2000), the Millennium Declaration (2000) and Global Education 2030 Agenda (UNESCO, 2010; UNESCO, 2017b). All of these national and international commitments clearly lay out the responsibility of the state to ensure inclusive and quality education for all and promote lifelong learning. In line with Pakistan's commitment to education, the four provincial governments – Khyber Pakhtunkhwa (KP), Punjab, Sindh and, Baluchistan - have also promulgated similar legislations for free and compulsory quality education known as The Right to Education (RTE) Act as well as prepared Education Sector Plans that stress the need for provision of free and compulsory quality education to all children.

However, despite local, national and international commitments, the absence of basic physical facilities such as boundary walls, clean drinking water, and toilets still exists. There is also a shortage of school staff and high pupil-teacher ratios severely affect the quality of education delivered in schools.

According to Pakistan Education Statistics 2015-2016, in Khyber Pakhtunkhwa (KP) province, one of the most war inflicted provinces, 42% of primary schools have no electricity, 28% of primary schools are without drinking water, 14% of primary schools are without a latrine and boundary walls and, 19% of primary school buildings need repair (Academy of Educational Planning and Management [AEPAM], 2017). Given the unsatisfactory school conditions despite

the government's local, national and international commitments, it is imperative to discern the systematic factors that predict learning outcomes in the context of the KP province. The results thus obtained may be helpful in formulating policy interventions aimed at improving learning outcomes of the children especially in the developing countries.

Theoretical Framework

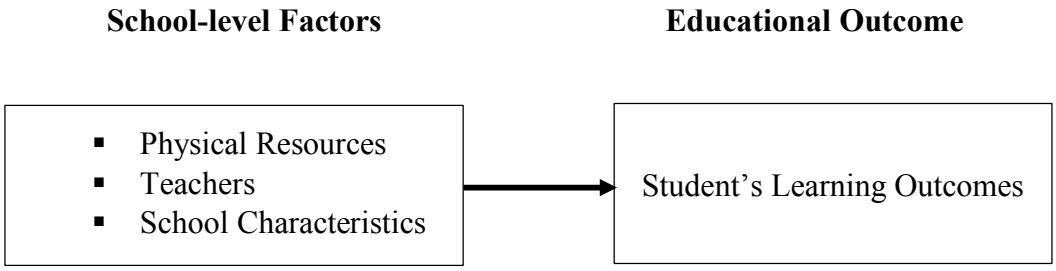
This paper employs the education production-function model to estimate students' learning outcomes in public primary schools in the KP province. Education production within the schools takes place through a complex process. In particular, student inputs (socio-economic status, age, and gender), household inputs (parents' education, income, and number of children), school inputs (infrastructure, teachers, and school location) and system-level inputs (school location, number of schools, and examination structure) are systematically related to each other and to student learning outcomes. However, this paper assesses the impact of school level factors on students' learning outcomes since, as mentioned above, it is the state's responsibility to provide a quality education and decent classroom conditions in which children can learn.

The initial years of primary schooling are very crucial for children as has been shown by a growing body of literature (EFA-GMR, 2013; Global Campaign for Education [GCE] and Results Education Fund, 2007; Rose, 2013). In Pakistan, and particularly the KP province, public schools are attended mostly by the children from low socio-economic status. These children have no resources at home to supplement the skills learned in schools. Their parents are mostly illiterate or semi-literate and are incapable of asking their children what they learned at school so as to correct them or improve their cognitive skills. In such a scenario, when these children get enrolled in a far-off school which is overcrowded with fewer teachers and fewer classroom resources, how can it be expected that they will develop strong foundations in basic literacy and

numeracy? Resultantly, if children are unable to learn the basics early on, they are unlikely to acquire other skills in later grades and are more likely to drop out (EFA-GMR, 2013; GCE & Results Education Fund, 2007; Hanushek, 1995; Rose, 2013).

Using the Education Production model, this paper assesses the impact of school-level factors (input) on students' learning outcomes (output). For a detailed analysis of production-function model see Rahim (2017) and Hanushek (2007). Following Lee and Zuze's (2011) typology, school- level factors have been categorized into physical resources, teachers, and school organization, as illustrated in Figure 1.

Figure 1: The Influence of School Factors on Children's Learning Outcomes



Analytical Model of Learning Outcomes

Source: A Modified version of framework used in Lee and Zuze (2011)

Literature Review

Research indicates that student learning outcomes are influenced by resources available to the students in schools (Glewwe, Hanushek, Humpage & Ravina, 2011; Glewwe & Jacoby, 1994; Heyneman & Loxley, 1983; Lee & Zuze, 2011; Wilms & Somers, 2001). These resources have been grouped into three categories based on the typology used by Lee and Zuze (2011): physical resources, teachers, and school characteristics.

Physical Resources

Review of the literature indicates that physical resources can be grouped into three categories: infrastructure (classroom, sports facility, science lab and library); instructional materials (desk and chair, blackboard, charts, maps, teaching kits and textbooks); and amenities (toilet, electricity, drinking water, and boundary wall). In line with this categorization, the following sections analyze the relationship between physical resources and learning outcomes.

School infrastructure.

The relationship between school infrastructure and students' learning outcomes in developing countries is mostly positive. Glewwe, Hanushek, Humpage, and Ravina (2011) examined studies published between 1990 and 2010 to investigate the effects of school characteristics on student learning outcomes in developing countries (from South West and East Asia, Africa and Latin America). Seventy-nine studies including 43 high-quality studies found a positive impact of school walls, roofs, and ceilings on learning outcomes. Out of the 43 high-quality studies, four studies looked at the impact of the library on learning outcomes. Three studies were positive out of which two were significantly positive and none was significantly negative.

Using the Ghana Living Standards Survey (GLSS), Glewwe and Jacoby (1994) examined the relative effectiveness of repairing school buildings over investments in instructional materials, such as books, desks, and blackboards**.** The research found that improvement in material resources, such as repairing leaky classrooms, directly affect mathematics and reading test scores (as leaking classrooms cause interference in normal classroom activities) and indirectly affect retention. Similarly, research by Lee and Zuze (2011) found strong positive links between school

resources (an index created from all three categories of physical resources: infrastructure, instructional material, and amenities) and learning outcomes of grade six students in four sub-Saharan African countries: Namibia, Botswana, Malawi, and Uganda. The research concludes that the effects of resources on reading and mathematics test scores were larger in some countries than others.

In contrast, in a cross-national study of 13 Latin American countries, Willms and Somers (2001) found little evidence of positive effects of school infrastructure (library, laboratory, gym, art classroom, computer room) on language and mathematics test scores of third and fourth-grade students. Both of these studies used similar statistical methods (hierarchical linear model), created an index of various school resources, and observed data from more than one country. However, their results are contradictory. One potential explanation is that in Latin American countries schools have high levels of resources (Glewwe, Grosh, Jacoby, & Lockheed, 1995) which may have reduced the impact of resources on achievement. In contrast, in Sub-Saharan African countries, even the most basic resources are missing (Lee & Zuze, 2011) and hence the availability of bare- minimum resources may have a positive impact on learning outcomes.

Instructional materials.

The second category of physical resources is the availability of instructional materials (desks, chairs, blackboards, and textbooks). The relationship between school instructional materials and learning outcomes in developing countries is mostly positive. In a meta-analysis of 37 developing countries, Glewwe, Hanushek, Humpage, and Ravina (2011) shortlisted five high-quality studies that looked at the impact of desks, tables, and chairs on students' achievement. The findings of all five studies are positive and two of them are significantly positive. Similarly, findings for blackboards are positive in three studies and significantly positive in one study. This

finding is consistent with that of Glewwe and Jacoby's (1994) research in Ghana that found out that blackboards have a statistically significant impact on both math and reading test scores of students in secondary schools.

Similarly, in a cross-national study of 13 Latin American countries, Wilms and Somers (2001) found significant positive effects of instructional materials (blackboards, calculators, and maps etc.) on language scores of third and fourth-grade students. Their research indicates that an increase of five items in instructional materials is associated with an increase in language scores by about ten points. The findings of this study are consistent with that of Aslam (2003) who found that in Lahore, Pakistan school facilities have a consistent and significantly positive impact on the reading skills of 8th grade students. Similarly, using the 1990 Jamaican Survey of Living Conditions, Glewwe, Grosh, Jacoby and, Lockheed (1995) found that school facilities and instructional materials influence student achievement in primary schools. However, the study found that other variables measuring teaching practices are more often significantly related to student achievement than are physical and pedagogical variables. Nevertheless, the authors contend that it may be due to the fact that Jamaican schools have high levels of school inputs that reduced the impact of physical resources on achievement.

In contrast, a household survey carried out by Lloyd (2000) to explore the relationship between school quality and educational outcomes in Kenya, found a low correlation between the facilities index and the average percentage of students scoring a passing grade on the Kenyan Certificate of Primary Education (KCPE) examination. In short, the evidence is mostly positive with regard to the association between instruction materials and learning outcomes.

Amenities.

This is the third categorization of physical resources. Availability of basic amenities such as

toilets, electricity, and drinking water is important to attract students to schools, retain them and improve their performance. Lee, Zuze and Ross's (2005) research in 14 Sub-Saharan African countries found a strong positive relationship between an index of amenities and infrastructure and reading test scores of grade six students, a finding consistent with that of Lee and Zuze (2011) in four sub- Saharan African countries.

Electricity is one of the major amenities in schools especially in countries where the weather is hot and humid for the most part of the year. Children sitting in overcrowded classrooms without electricity fail to focus on what is being taught in the classroom. However, the evidence on the impact of electricity on learning outcomes is mixed. Although the studies conducted by Lee et al. (2005) and Lee and, Zuze (2011) found a positive impact of electricity on test scores, the meta-analysis of 37 developing countries by Glewwe et al. (2011) found no evidence that electricity has a significant positive impact on students' achievement.

The toilet is another such crucial resource that has been frequently analyzed. Suryadarma et al. (2006) investigated the correlation between the performance of public primary schools in Indonesia. Using OLS regression on a nationally representative sample of fourth graders, the study found that students in schools with at least one functioning toilet had higher levels of performance in mathematics than those in schools with no toilet. The effect was significant for girls but not for boys. The finding is consistent with that of Asadullah (2005), who argued that availability of toilets is particularly important in increasing enrollment and attainment in Bangladesh.

To sum up, the studies indicate that the existence of basic school infrastructure such as school boundary walls, roofs, and classrooms as well as regular repair and maintenance of the infrastructure has a statistically significant impact on students' learning outcomes. With regard to

the impact of instructional material such as desks, chairs, blackboards, and textbooks, most of the researchers agree that availability of instructional materials has an impact on students' learning outcomes. Similarly, researchers found a positive relationship between an index of amenities and learning outcomes.

Teachers

Evidence on the impact of teachers' quality (educational level, experience, and training) on student achievement is inconclusive. Regarding teachers' experience, studies from fourteen Sub-Saharan African countries and India, Iran, and Malaysia found that teachers' experience is strongly and positively associated with students' learning outcomes (Heyneman & Loxley, 2005; Lee & Zuze 2011; Lee, Zuze & Ross 2005). In contrast, studies from Ghana, Latin America, and Mexico indicate that teachers experience is not associated with students' learning outcomes (Glewwe & Jacoby 1994; Luschei 2012; Willms & Somers 2001). Regarding teacher's training, the findings are mostly positive in countries like Israel and Latin America and negative in India. Angrist, Joshua, and Lavy (2001) examined the effect of in-service teacher training on achievement in Jerusalem. Using differences-in-differences regression and matching estimates, the research found that teacher training provided a cost-effective means of increasing reading and math test scores. The authors suggest that teacher training may provide a less expensive strategy for raising test scores than reducing class size or adding school hours. Similarly, in a cross-national study of 13 Latin American countries, Willms and Somers (2001) found significant and positive effects of teacher training on grade three and four students' language and math test scores. In contrast, Suryadarma et al.'s (2006) research in Indonesia found that the proportion of teachers with pre-service training does not have a significant impact on students' achievement.

Regarding teachers' education, the findings are inconclusive. Santibanez (2002) found that students of teachers with advanced degrees had greater achievement gains in both primary and secondary schools in Mexico City. This finding is consistent with that of Heyneman and Loxley (1983) in India and Lee and Zuze (2011) in Sub-Saharan African countries. However, in their study of rural northeast Brazil, Ralph Harbison and Eric Hanushek (1992) found that teachers' education levels were not systematically related to student performance on standardized tests.

In short, the findings on the effects of teachers' quality are contradictory, which can be attributed to various statistical approaches, e.g., differences in research methods, differences in level of aggregation, relevant control and omitted variables, functional form of equation, type of data (longitudinal versus cross-sectional), difference in political climate of the country, quality of training, or availability of school resources.

School Characteristics

School characteristics focus on how schools are organized such as school size, school location, pupil-teacher ratio, single or multi-grade teaching, school fee and school shifts (same school resources are utilized by various students at different times of a day) (Glewwe et al. 2011; Lee & Zuze, 2011). This paper review two variables due to the nature of research question and availability of data. These variables are school location and pupil-teacher ratio.

Urban/Rural locations.

Evidence suggests that the urban/rural location influences learning outcomes. This finding may be in part due to the inferior physical resources of school (buildings, instructional resources, facilities) and teachers' quality (level of schooling, experience, and training). For example, Zhang (2006) investigated factors underlying the learning disadvantage of rural primary school students in fourteen Sub-Saharan African countries. Using data from the 2000-

2002 Southern and Western Africa Consortiums for Monitoring Educational Quality (SACMEQ II) reading assessments, the research found that students in rural areas score far below in reading than the children in urban areas. Among the reasons put forward for the variation in performance is fewer and inferior quality physical resources in rural schools as compared to urban schools.

Another reason why students from rural areas lag behind in their learning outcomes compared with their urban counterparts is teacher quality differences across rural and urban schools. Studies both in developed and developing countries indicate that the difference in teachers' quality is due to the difficulties in recruiting qualified teachers to work in remote rural schools. Teachers avoid working in rural areas for many reasons including isolation, poor living facilities, limited school resources, and even safety concerns. Luschei, (2012) in his analysis of two Mexican states, found that student achievement is significantly lower in rural areas as compared to those living in urban areas. He found that more experienced teachers and higher ability teachers are concentrated in urban schools whereas less qualified and less experienced teachers are employed in rural areas. Rural teachers are also highly mobile and "pay their dues" to get transferred to schools located in better areas.

Pupil-Teacher ratio (PTR).

The effect of class size on student achievement has conflicting results in developing countries. In a study of school choice in Pakistan, Alderman, Orazem, and Paterno (2001) found that large pupil-teacher ratios in public schools have a negative impact on student achievement especially language skills. Similarly, research in Indonesia by Suryadarma et al. (2006) shows that a class size below or above an average fourth-grade class size (25 children) has a negative impact on student performance in math and dictation. The authors conclude that very

small or very large class sizes are detrimental to students' performance and that the optimal size shall be in between the two class sizes. Case and Deaton (1999) analyzed five data sources to examine the relationship between pupil-teacher ratios and school outcomes amongst blacks and whites in South Africa. The study found that a higher pupil-teacher ratio had a negative effect on the mathematics score but a positive and insignificant effect on literacy. They also found that among whites the pupil-teacher ratio had a positive, but insignificant, effect on both tests. Similarly, in a cross-national study of 13 Latin American countries, Willms and Somers (2001) found significant positive effects of PTR on grade three and four students' language and math test scores. However, the effect was very small. The study shows that a decrease in the class size of 10 students is associated with an increase in achievement of about five points on mathematics and language test.

In contrast, Lee and Zuze (2011), in their analysis of students' achievement and school resources in four sub-Saharan countries, found that class size had no impact on grade six students' achievement in reading and mathematics. In a randomized trial in Western Kenya, Duflo, Dupas, and Michael Kremer (2009) found that a reduction in class size (from 82 to 43 students on average) without any other changes in school organization (such as training of school council) had a small and insignificant impact on the increase in test scores. Similarly, a review of studies on developing countries reported mixed results on the effects of class size (Glewwe et al. 2011). In their analysis, five studies found a significantly negative impact of class size on student achievement while three studies found a significantly positive impact of class size on student achievement. The differences in the results of these studies may be due to differences in the distribution of class size, as had been suggested by Suryadarma et al. (2006), that both very small and very large class sizes can have a negative relationship with schooling outcomes.

In sum, the studies indicate that the location of school influences learning outcomes either because of lack of physical resources and lower teachers' quality in rural schools as compared to urban schools. However, with regards to PTR, the findings are inconclusive.

Research Question, Data, and Variables

Two data sources were used to address the research question: What school factors are associated with learning outcomes? These sources were: a) Education Management Information System (EMIS) obtained from the Ministry of Elementary and Secondary Education, Government of KP; and b) the Annual Status of Education Reports (ASER), which is available online, and is an NGO- sponsored, large-scale national household survey about the quality of education in rural and some urban areas of Pakistan.

The three dependent variables are the rate of proficiency in reading Urdu, reading English, and basic mathematics. The independent variables included in the analyses of learning are school location (urban/rural), amenities, medium of instruction, teachers' attendance, academic and professional qualification, school size, PTR (Kindergarten/kachi-grade 2), PTR (grades 3-5), multigrade schools and, school gender. The school facilities measured in 2012 were used to predict learning outcomes in the same year.

The ASER assessment measured children's literacy and numeracy skills at five proficiency levels. These levels are a) reading beginner/ cannot read; b) reading letters; c) reading words; d) reading a sentence; and e) reading a story. Similarly, numeracy skills have been measured at five proficiency levels: a) math beginner /cannot recognize digits; b) recognizes digits from 1-9; c) recognizes digits from 11-99; d) two-digits subtraction; and e) three-digit division. However, for this study, two lower-levels of proficiencies have been grouped into one. In particular, in the case of reading Urdu, two levels (reading a letter or word) have been grouped into a category

'reading words or less.' Similarly, for mathematics, recognizing digits from 1-9 and 1-99 have been combined into one category, i.e., recognizes digits from 1-99.

Analyses of the rates of proficiency at each of the four proficiency levels in each subject area (Urdu, English, and Mathematics) have been conducted. However, the results of only the third proficiency levels (reading sentence in Urdu, reading words in English, and performing two-digit subtraction) are discussed in this paper to maintain uniformity across various analyses, and because the results were meaningful and statistically significant. Consequently, the research question has been divided into three parts: What school factors are associated with a) reading sentences in Urdu b) reading words in English, and c) performing two-digit subtraction? Accordingly, three dependent variables (reading Urdu sentences, reading English words, and mathematics) are constructed. The variable Read-Urdu-Sentence 'RDURDSNT' is constructed to determine the percentage of children who can read a sentence in Urdu. It is an interval level variable having values: 0 to 100. The second variable, Read-English-Word 'RDENGWRD', is constructed to determine the percentage of children able to read a word in English. Finally, the third variable, MATH, is constructed to determine the percentage of children able to do two-digit subtraction.

Guided by the literature, the independent variables were classified into physical resources, teachers, and school characteristics. The category 'physical resources' was comprised of independent variables such as the number of classrooms, number of desks and chairs, and amenities. However, due to insufficient and incorrect EMIS data in the first two categories, these variables were dropped, and the variable 'amenities' was selected for the analysis.

The second category, 'teachers', consisted of variables such as number of teachers, teachers' attendance, and academic and professional qualifications. The first variable, number of

teachers, was transformed into a variable 'multigrade' to assess whether a teacher teaches two or more grades at the same time in a classroom. With regards to the second variable, teachers' attendance, a dummy variable was constructed based on the hypothesis that educational outcomes are better in schools where teachers' attendance is greater than 90 percent in comparison to those schools where attendance is less than 90 percent. The third variable, teachers' academic qualifications, indicate whether the teacher has a Matriculation degree (completion of grade 10) and a high school degree. The fourth variable, teachers' professional qualifications, indicates whether the teacher has a Primary Teaching Certificate (PTC) and Certificate in Teaching (CT)[1]. The final category, 'school characteristics', is comprised of variables such as school location, medium of instruction, school size, student-teacher ratio and school gender.

Resultantly, the set of independent variables comprised of amenities, multigrade schools, school location (urban/rural), medium of instruction, school size, PTR (Kindergarten/kachi-grade 2), PTR (grades 3-5), teachers' attendance, teachers' academic and professional qualification and, school gender. The first variable, amenities, was constructed by adding five basic items in a school: electricity, drinking water, boundary wall, toilets, and usable toilets. An ordinal variable was constructed, which had values from 0–5 where 0 presents no amenities and 5 presents availability of all five amenities. The second variable, multigrade, determines whether a teacher teaches two or more grades at the same time in the same classroom or space. Multigrade is a dummy variable where 1 represents a multigrade school if a school has less than six teachers and 0 represents monograde schools if a school has more than six teachers.

[1] PTC is awarded after a one-year program on the basis of Secondary School Certificate, i.e., 10 years of school attendance. The award qualifies the holder to teach in a primary school. CT is awarded after a one- year program on the basis of Intermediate/Higher School Certificate examination. The award qualifies the holder to teach in middle schools (6th to 8th grades). (Qualifications Recognition, 2011)

The third variable, school location, has been coded into a dummy variable (0, 1) where 1 indicates urban schools and 0 indicates rural schools. The fourth variable, medium, indicates the medium of instruction in schools. A dummy variable (0, 1) was constructed where 1 represents the medium of instruction as Urdu or English, and 0 represents Pashto medium schools. The fifth variable, school size, is an interval level variable that has been constructed from the students' enrollment data 2012. The school enrollment variable was created by summing enrollments from Kindergarten/kachi to grade 5. School size had a moderate positive skew hence it was transformed into Log school size. Using quartile approach, the sample schools were grouped into small (less than 104 students), small-to-medium (104-194 students), medium (195-397 students) and large sized schools (greater than 398 students).

The sixth and seventh variables in this category, PTR, estimate class size. Two interval level variables have been constructed; one for early grades (Kindergarten/kachi–grade 2) and another for higher grades (grades 3–5). These variables are created in two steps. First, the school enrollment (Kindergarten/kachi– grade 2) variable was created by summing enrollments from Kindergarten/kachi to grade 2. Second, PTR (Kindergarten/kachi– grade 2) was computed as school enrollment (Kindergarten/kachi–grade 2)/number of teachers multiplied by 100. A similar method has been adopted for the interval level variable PTR (grades 3–5).

The variables under teachers' category consist of teachers' academic and professional qualification and attendance. The eighth variable, teachers' attendance, is a dummy variable that indicates percentage of teachers' (90% or more) present during the day of school visited by the surveyors of the ASER team. Hence, 1 represents teacher attendance greater than or equal to 90 percent, and 0 represents otherwise. The ninth variable, teachers' academic qualifications, represents officially mandated qualifications for teachers to teach in a primary

(Kindergarten/kachi to grade 5) or middle (grades 6-8) school whereas a higher qualification is officially required for teachers to teach in high schools (grades 9-10) and college (grades 11-12). The tenth variable, teachers' professional qualification, is an interval level variable that determines percentage of teachers having professional qualifications as PTC and CT.

The last variable, school gender, has been constructed because officially in KP province the schools are strictly segregated and labeled as boys' and girls' schools only, which is accordingly reflected in the EMIS. However, during school visits, it was observed that in some boys' schools a significant number of girls were enrolled. The head masters explained that girls attend boys' schools when there are no girls' schools nearby or when the parents perceive that the quality or security of boys' schools is better than that of girls' schools. Given this reality, the researcher decided to create a third category of 'mixed schools' to observe the difference in educational outcomes across the three types of schools. Hence, a variable school gender was created having values from 1 to 3 where 1 indicates boys' schools, 2 represents girls' schools, and 3 refers to mixed schools (boys 'schools with girls enrolled in them).

To summarize, 13 independent variables were initially proposed for this study: school gender, school location, amenities, medium of instruction, school size, pupil-teacher ratio (Kindergarten/kachi– 2), pupil-teacher ratio (3–5), number of teachers, number of classrooms, number of desks and chairs, teachers' attendance, teachers' academic qualifications and professional qualifications. Out of these 13 variables, eleven variables were selected for analysis as explained in the following section.

Methodology

To answer the research question, "What school factors are related to learning outcomes?" the data from 361 schools were analyzed. Two data sources were used to examine

this question: EMIS 2012 and ASER 2012. The two databases were integrated through a unique school code, which resulted in the specified number of schools. The school quality variables were retrieved from EMIS database while learning outcomes variables were used from the ASER 2012 database. A multiple linear regression analysis was conducted to assess the relative influence of school resources on students' learning outcomes.

The hypothesized relationship between school quality and learning outcomes has been examined using the education production-function model, which argues that students' learning outcomes as the educational output are affected by various school-level factors, perceived as inputs. To better understand the impacts of various inputs on learning outcomes, it is helpful to model these complex relationships explicitly. Production functions for school-level factors and learning outcomes is presented in the following equation:

$$LO = f(PHYRES, TEACHER, SCHORG, \eta) \quad (1)$$

LO stands for learning outcomes measured as the percentage of students achieved a given proficiency level in reading and mathematics. Consequently, separate models of three learning outcomes were constructed. The specific learning outcomes refer to the following abilities: Reading a story in Urdu, reading a sentence in English, and the ability to do two-digit subtraction. Production functions are derived as follows:

$$RDURDUSTORYi = PHYRESi + TEACHERi + SCHORGi + ui \quad (2)$$

$$RDENGSNTi = PHYRESi + TEACHERi + SCHORGi + vi \quad (3)$$

$$MATHi = PHYRESi + TEACHERi + SCHORGi + wi \quad (4)$$

where RDURDSTRY, RDENGSNT, and MATH refer to the percentage of children who can read a story in Urdu, read a sentence in English and do a two-digit subtraction. Subscripts "i" represent schools whereas u, v and w, are error terms. The estimation of equations 1, 2, 3 and 4 are for public primary schools only. Thus, learning outcomes for children enrolled in private or other types of schools are not considered in this study.

The variables PHYRES, TEACHER and, SCHCORG represent school physical resources, teachers and, school characteristics. School infrastructure, instructional materials, and amenities are physical resources (PHYRES) included in the production functions. However, the first two variables were eliminated during the analysis due to faulty data. Amongst the variables included in the category TEACHER are teachers' attendance and teachers' academic and professional qualifications. Variables included in the school organization (SCHORG) are school location, medium, school size, PTR (Kindergarten/kachi–grade 2), PTR (grades 3–5), school gender, and multigrade.

A multiple linear regression was used to address the research question. However, before running regressions, tests for linearity and normality were conducted to meet the regression assumptions. The scatter plots and histograms indicated that several of the independent variables required transformations. For example, the variable, school size, had a moderately positive skew. Hence, a log transformation was performed to make the distribution normal and a new variable "*Log School size*" was created (de Vaus, 2002). Similarly, the variable PTR was split into PTR at two levels (Kindergarten/kachi to grade 2 and grade 3 to grade 5) as the data analysis revealed that many children drop out of schools after grade 2. The second regression assumption, the absence of collinearity between the independent variables, was also tested. It was observed that all independent variables had relatively low tolerance and the resulting Variance Inflation Factor

(VIF) values did not exceed the cutoff value 5. As the coefficients of all the three proficiency levels were the same, the results of only one proficiency level, doing two-digit subtraction, has been presented in Table 1.

Table 1

Collinearity Diagnostics (School Resources and Numeracy Skills)

Coefficients[a]

	Collinearity Statistics	
Variables	Tolerance	VIF
Rural School	.947	1.057
Medium of Instruction-Urdu	.869	1.151
Amenities	.746	1.341
School Size (Log)	.296	3.377
Pupil-Teacher Ratio (grades kachi-2)	.687	1.457
Pupil-Teacher Ratio (grades 3-5)	.558	1.791
Multi-Grade School	.447	2.237
Teachers' Qualification (Matriculate & Intermediate)	.847	1.180
Teachers' Qualification (PTC & CT)	.947	1.056
Teachers' Attendance (≥90)	.812	1.231
Girls School	.866	1.155
Mixed School	.871	1.148

a. Dependent Variable: Learning Proficiency - Mathematics

After these initial tests, the following variables were selected for the final analysis: school location (urban/rural), amenities, medium of instruction, school size, pupil-teacher ratio (Kindergarten/kachi– grade 2), pupil-teacher ratio (grades 3–5), multigrade schools, teachers' attendance, academic and professional qualifications and school gender (girls' only, boys' only, and mixed schools). The summary statistics of these eight school-quality variables are presented in Table 2.

Table 2

Summary Statistics of Independent Variables

Descriptive Statistics

Variables	N	Minimum	Maximum	Mean	Std. Deviation
Rural School	361	0	1	0.98	0.14
Medium of Instruction-Urdu	361	0	1	0.60	0.49
Amenities	361	0	5	3.30	1.78
School Size (Log)	361	1.15	2.97	2.18	0.33
Pupil-Teacher Ratio (grades kachi-2)	361	5	106	25.62	12.72
Pupil-Teacher Ratio (grades 3-5)	361	0	57	19.02	8.414
Multi-Grade School	361	0	1	0.72	0.448
Teachers' Qualification (Matriculate & Intermediate)	361	0	100	41.61	37.96
Teachers' Qualification (PTC & CT)	361	0	100	78.48	25.62
Teachers' Attendance (≥90)	361	0	100	84.59	28.56
Girls School	361	0	1	.12	.321
Mixed School	361	0	1	.38	.487
Valid N (listwise)	361				

To measure the strength of an association between dependent and independent variables, a bivariate correlation analysis was conducted. Table 3 makes clear that the bivariate effects of the school characteristics are largely in line with the expectations. Higher PTR in grades Kindergarten/kachi-2, grades 3-5, and large school size were found to have a significantly negative impact on children's ability to read a sentence in Urdu. Teachers' officially mandated academic qualifications were found to have a negative impact on children's English reading skills.

Children's ability to do subtraction was affected by higher PTR in early grades and teachers' academic qualifications. Other indicators (amenities, school gender, medium of instruction, teachers' professional qualification, teachers' attendance and multigrade schools) were found to not have a significant impact on children's proficiency levels.

Table 3

Bivariate Pearson's Correlation Analyses

	Learning Proficiency – Two-Digit Subtraction	Learning Proficiency-Read A Word In English	Learning Proficiency-Read A Sentence In Urdu
Amenities	.085	.040	-.045
Medium of Instruction-Urdu	.049	.071	.096
School Size (Log)	-.034	-.064	-.146**
Pupil-Teacher Ratio (grades kachi-2)	-.129*	-.047	-.152**
Pupil-Teacher Ratio (grades 3-5)	.005	.000	-.121*
Multi-Grade School	-.056	-.033	.026
Teachers' Qualification (Matriculate & Intermediate)	-.117*	-.133*	-.094
Teachers' Qualification (PTC & CT)	-.102	-.034	-.041
Teachers' Attendance (≥90)	.088	.100	.096
Girls School	.020	.002	-.014
Mixed School	.006	-.038	.060
Rural School	.027	.066	.052

** $p < 0.01$; * $p < 0.05$.

Results

The coefficients of the bivariate analyses are important because they show how learning outcomes vary with various levels of school resources. They thus represent the observable reality in the rural schools in the KP province. However, because these characteristics may be related to each other (e.g., large schools tend to have higher PTR, or teachers with officially mandated qualification are deployed in schools that tend to have more children), the bivariate data gave

no insight into the relative importance of the various characteristics in explaining proficiency levels. Thus we may know little about the underlying causes of low learning outcomes. To gain more insight into these underlying causes, a multivariate analysis was conducted.

The coefficients for the regression model of the 11 independent variables related to school resources predicting literacy and numeracy skills are depicted in Table 4. A total of 361 schools were examined in relation to learning outcomes (read a sentence in Urdu, read a word in English, and do two-digit subtraction). Concerning a child's ability to read a sentence in Urdu, two variables, teachers' attendance and teachers' qualifications, showed a statistically significant relationship (columns 2 and 3). The analysis indicates that in schools in which teacher attendance was greater than 90 percent, the percentage of children who can read a sentence in Urdu was nearly four percentage points higher than those schools in which teachers' attendance was less than 90%. Teachers' officially mandated qualifications were also found to have a negative association with children's ability to read Urdu. Interestingly, most of the variables that showed significant effects in the bivariate analysis are not significant any more in the multivariate analysis. For example, school size, PTR in early and later grades and multigrade schools lose their significance after controlling for other variables. The regression model explains the nearly seven percent of variance in the rates at which students were proficient in reading, which was statistically significant ($R^2 = 0.068$, $F=2.088$, $p \leq .05$).

In relation to mathematics (columns 4 and 5) four of the school facility variables, school size, teachers' attendance, teachers' academic qualification and multigrade schools, show a statistically significant relationship with the children's ability to perform two-digit subtraction. The overall model explained six percent of variance in students' numeracy skills ($R^2 = 0.064$, $F=1.95$, $p \leq .05$). The analysis indicates that a one-unit increase in school size is related to

a nearly ten percentage point decrease in percentage of children who can perform subtraction. The analysis also reveals that schools in which teachers' attendance was greater than 90 percent, the percentage of children who can do subtraction was nearly four percentage points higher than those schools in which teachers' attendance was less than 90%. Furthermore, teachers' official academic qualifications, Matriculation, and Intermediate, decrease children's ability to do subtraction by five percent. The analysis also indicates that in a multigrade school, the percentage of children who can perform two-digit subtraction decreases by nearly six percentage points. Finally, an analysis by school gender indicates that there is no difference in numeracy skills amongst the children in boys only, girls only, or mixed schools. Interestingly, out of the two variables that showed significant effects in the bivariate analysis, one of them, teachers' qualifications, holds significance in the multivariate analysis whereas the other variable, PTR, loses its significance. Thus, after control for the other factors, it becomes clear that only children taught by teachers with relatively advanced qualifications are able to do mathematics as compare to children taught by teachers with lower qualifications.

Columns 6 and 7 in the Table 3 report the predictive value of the school resource variables on English reading skills. All four variables, school size, teachers' attendance, teachers' academic qualification and multigrade schools, that were found significant in assessing children's mathematical skills, show a significant relationship with the children's ability to read a word in English. Again teachers' qualifications that showed significant effect in the bivariate analysis held its significance in the multivariate analysis. The overall model explained seven percent of variance in schools' rates of students' ability to read a word in English (R^2 = 0.068, F=2.07, $p \leq .05$).

Table 4

Multivariate Analysis of School Facilities on Learning Outcomes (Reading Urdu, Reading English, and Mathematics)

Variables	Dependent Variables#					
	Percentage Children Who Can Read a Sentence In Urdu		Percentage Children Who Can Do Two-Digit Subtraction		Percentage Children Who Can Read a Word In English	
	B	ß	B	ß	B	ß
Number of Amenities	-.056	-.006	0.837	.082	.978	.086
Medium of Instruction-Urdu	1.970	.055	1.365	.037	2.31	.056
School Size (Log)	-7.854	-.150	-9.975	-.183*	-15.36	-.25**
Pupil-Teacher Ratio (grades kachi-2)	-.123	-.090	-0.137	-.096	.040	.025
Pupil-Teacher Ratio (grades 3-5)	-.037	-.018	0.227	.105	.200	.083
Teachers' Qualification (Matriculate & Intermediate)	-.052	-.114**	-0.050	-.105*	-.087	-.164**
Teachers' Qualification (PTC & CT)	-.006	-.008	-0.034	-.048	.019	.423
Teachers' Attendance (≥90)	3.743	100*	3.963	102*	4.874	2.104**
Rural School	6.929	.059	3.963	.102	11.70	.086
Multi-Grade School	-3.511	-.090	-5.577	-.137*	-8.31	-2.36**
Girls School	1.808	.033	2.427	.043	.307	.087
Mixed School	2.269	.063	.677	.018	-1.29	-.559
(Constant)	30.905**		37.094**		44.23**	
n	*361*					
R^2	.068		.064		.068	
F	2.08**		1.95**		2.07**	

*** p ≤ .001; ** p ≤ .05; *p ≤ .10.

For measurement of these variables refer to Annex-I.

A lower R-square at the three proficiency levels in Table 4 reflect a higher variability around the regression line. The regression assumptions behind low R-square were checked to validate the robustness of the model. One of the regression assumptions is the presence of multicollinearity. However, Table 1 indicates the independent variables are not correlated. Other assumptions are inaccurate measurement of dependent or independent variables and a small sample size. With regards to the measurement of variables, this study measured the variables as guided by the literature. The last assumption, small sample size, does not hold significance as the sample size of 361 rural schools is by no means a small sample. (Jin & Myers, 2006; Reisinger, 1997).

Researchers argue that the low R-square does not make the model spurious if the F ratio and the intercept in multiple regression model is significant (Moksony, 1990). The regression analysis passes both of the tests. As is evident from Table 4, the F ratio is significant, across all the three proficiency levels. Also, the intercepts in this model are also significant, which means that the R value in this model is not due to chance. Furthermore, this paper aimed to assess the relationships between school resources and learning outcomes at three levels hence the low R- Squared values do not negate the importance of the significant variables. The statistically significant p-values continue to identify relationships, and the coefficients have the same interpretation despite low R-square (Frost, 2017).

In short, the small but significant R-square means that there is a significant albeit small impact of independent variables, teachers' qualification, teachers' attendance, school size and, multigrade schools, on dependent variables, children's numeracy, and English reading skills. However, it is possible that the majority of the impact would be better explained by other variables

[2] The Multiple Linear Regression analysis was re-run without the variable log (school size) having VIF greater than 3, which means there is a probability of multicollinearity, however, the regression results at all three proficiency levels were almost the same as presented in Table 4.

not included in this study, e.g., children's socio-economic status, school syllabus, teaching methodology, classroom management and, degree of autonomy delegated to schools. The same holds true for the effect of teachers' qualification and teachers' attendance on children's ability to read Urdu.

Discussion

This study provides some useful insights into the complex relationship between school resources and students outcomes. One of the major findings emerging from these analyses is that children attending schools that are staffed with sufficient teachers (at least one teacher per grade) have better numeracy and literacy skills as compared to those children who attend schools where there are fewer teachers. Empirical research on the impact of teacher shortage on learning outcomes is scarce despite the fact that the shortage of teachers is a huge challenge in developing countries. Analysis by UNESCO Institute of Statistics indicates that 24.4 million primary school teachers are needed to be recruited by 2030 (UIS, 2016). Nearly half of the vacancies (42.6%) arise in sub- Saharan Africa and South Asia where 10.4 million primary school teachers are needed to achieve universal primary education by 2030 (6.3 and 4.1 million teachers respectively). As per Pakistan Education Atlas 2015, nearly 30 percent of primary schools are run by only one teacher in Pakistan (AEPAM, 2017; Khattak 2016). The finding, hence, has an important policy implication and stresses the need to sufficiently resource the schools to improve educational outcomes of the students.

Not only teachers' availability but ensuring their attendance is crucial. The study reveals that teacher's attendance has a positive effect on students' literacy and numeracy skills, which is in consonance with earlier studies (Duflo, Hanna, & Ryan, 2012; Kremer et al., 2005; Miller, Murnane & Willet, 2007; Rogers & Vegas, 2009; Suryadarma, Suryahadi, Sumarto & Rogers,

2006). Teachers' absenteeism results in loss of instructional time and affects other education indicators such as access and school completion rates (Abadzi, 2009; Benavot & Limor, 2004; Chaudhury, Hammer, Kremer, Muralidharan, & Rogers, 2006).

The third finding is about teachers' qualifications. The study reveals that teachers' official academic qualifications have a negative impact on children's ability to read a sentence in Urdu, read a word in English, and do two-digit subtraction. The studies that examined the relationship between teachers' academic qualifications and learning outcomes yielded mixed results. Studies conducted by Heyneman and Loxley (1983) in India and Lee and Zuze (2011) in Sub-Saharan African countries found a positive impact of teachers' academic qualification on learning outcomes. However, studies conducted by Aslam and Kingdon (2008) in Pakistan and Harbison and Hanushek (1992) in Brazil found no explicit linkages between teachers' qualifications and learning outcomes. The finding is relevant to most low-income countries including Pakistan for two reasons. First, education quality is not up to the mark in most developing countries and, even when the teachers get matriculation and intermediate degrees, they do not possess sufficient knowledge and skills to teach effectively. Second, the teaching profession is not a choice but compulsion for many of those people applying for government teaching jobs who are either rejected by other recruiters or lack motivation to excel in life. Hence, the finding has an important policy implication and stresses the need to review teachers' qualifications criteria to improve educational outcomes of the students.

Finally, it was observed that an increase in school size has a negative effect on students' numeracy and English reading skills. A review of literature on school size indicates that much of the school size research has been conducted on high schools especially in developed countries (Chavez, 2002; Leithwood & Jantzi, 2009; Slate and Jones, 2007; Steifel,

Berne, Iatarola and Frucher, 2000; Werblow & Duesbery, 2009) and the evidence on school size effect is mixed. The theoretical framework that serves as the rationale for small size schools, that is, school connectedness, argues that teachers provide individual attention to children in small schools hence students feel supported and cared for by teachers, which may overcome other barriers such as poverty and may lead to improved students' performance (McMillen, 2000; Ready & Lee, 2006; Zoda, Combs, & Slate, 2011). In KP province, a vast majority of students enrolled in public schools are from economically disadvantaged backgrounds having mostly illiterate parents. Added to this, there is a shortage of teachers as primary schools are mostly run by one teacher. In such a scenario, the school connectedness model fits well with the findings as struggling students need more attention to individual needs and a more caring environment.

Unlike the vast majority of previous studies on school location and students' achievement (Luschei 2012; Zhang, 2006), this study does not show a positive association between urban schools and learning outcomes. The lack of systematic positive association between the two may be due to fewer urban schools (2%) than rural schools (98%) in the data set. The relationship between amenities and learning outcomes is also found to be statistically insignificant unlike some of the earlier studies (Lee & Zuze, 2011; Lee, Zuze & Ross, 2005). The insignificant relationship between PTR and learning outcomes was observed after the regression model was modified by adding the teachers' characteristics variable. The initial regression model that did not contain the teachers' characteristics variable showed statistically significant association between PTR and learning outcomes, which means that teachers' characteristics overshadowed the importance of PTR.

Conclusion

This paper analyzed the effects of school-level factors on children's learning outcomes in 361 rural public primary schools in 23 districts of the KP province, Pakistan. The school-level factors were categorized into physical resources, teachers, and school characteristics. The physical resources were further grouped into school infrastructure, instructional materials, and amenities. Teachers' category consisted of teachers' academic and professional qualifications, attendance and number of teachers in schools. The last category, school characteristics, comprise of PTR (Kindergarten/kachi-grade 2), PTR (grade 3-5), school location, size, medium of instruction and, school gender (boys' only, girls' only, and mixed schools).

Following policy recommendations can be deduced from this study. First, the strong positive effect of teachers' attendance indicates that in schools where teachers' absenteeism is low children's ability to read a word in English, read a sentence in Urdu and do two-digit subtraction are better than schools where teachers remain absent. Second, the results make clear that the requisite number of teachers are very important too. If there are too few teachers in schools, learning outcomes are substantially decreased. The findings suggest that, in schools with low learning levels, increasing the number of teachers might be a good policy to improve children's ability to read and do mathematics. Third, if teachers who hold a bare minimum qualification (high school or intermediate degree) teach primary school children, the learning outcomes will not get any better. This finding suggests that policy measures aimed at increasing the level of teachers' qualifications for induction might help improve learning outcomes of children in rural schools. Finally, the study shows that a continuous increase in school size may result in lowering learning outcomes.

Learning outcomes are influenced by many school-level factors especially teachers and

school characteristics. Mapping the role played by these factors is the first step to solve the learning crisis in low-income countries. This study points to the need to sufficiently resource the schools to improve the educational outcomes of students in rural public primary schools

References

Abadzi, H. (2009). Instructional time loss in developing countries: Concepts, measurement, and implications. *World Bank Research Observer 24*(2), 267–290.

Academy of Education Planning and Management (AEPAM). (2017). Pakistan Education Statistics 2015-16. Ministry of Federal Education and Professional Training. Government of Pakistan. Retrieved from http://library.aepam.edu.pk/Books/Pakistan%20Education%20Statistics%202015-16.pdf

Aslam, M., & Kingdon, G. (2008). What can teachers do to raise pupil achievement? *Research Consortium on Educational Outcomes and Poverty (RECOUP) Working Paper No. 19. WP19/08.*

Benavot, A., & Limor, G. (2004). Actual instructional time in African primary schools: Factors that reduce schooling quality in developing countries. *Prospects 34 (3),* 291–310.

Chavez, J. J. (2002). School size and academic performance of Texas secondary public school students. *Dissertation Abstracts International, 63*(04), 1196A.

Chaudhury, N., Hammer, J., Kremer, M., Muralidharan, K. & Rogers, F. H. (2006). Missing in action: teacher and health worker absence in developing countries. *Journal of Economic Perspectives*, *20*:1, 91-116.

Duflo, E., Hanna, R., & Ryan, S. P. (2012). Incentives work: Getting teachers to come to school. *American Economic Review, 102*(4), 1241-1278.

EFA Global Monitoring Report. (2013). Addressing the crisis in early grade teaching. Policy Paper 07. UNESCO 7, place de Fontenoy 75352 Paris 07 SP, France.

Frost, J. (2017). How to interpret Regression Models that have significant variable but a low R-squared [Web Log Post]. Retrieved February 26, 2018, from http://statisticsbyjim.com/regression/low-r- squared-regression

EMR 2013. Every child needs a good teacher, especially in the early grades. Retrieved from https://gemreportunesco.wordpress.com/2013/04/22/every-child-needs-a-teacher/

Global Campaign for Education and RESULTS Educational Fund. (2007). *Make it Right: Ending* the Crisis *in Girls' Education*. Johannesburg, South Africa, and Washington D.C.: GCE and RESULTS Education Fund.

Hanushek, Eric. (1995). Interpreting recent research on schooling in developing countries. *World Bank Research Observer 10*, 247-254

Jin, Li, & Myers. S.C. (2006). R2 around the world: New theory and new tests. *Journal of Financial Economics, 79*, 257-292. Retrieved from http://www.nber.org/papers/w10453

Khattak, K. (2016). Data Stories. *World Teachers' Day Special: Thousands of teaching posts vacant in schools in Pakistan.* Retrieved from https://www.datastories.pk/world-teachers-day-special- thousands-of-teaching-posts-vacant-in-schools-in-pakistan

Kremer, Michael, Karthik Muralidharan, Nazmul Chaudhury, Jeffrey Hammer, & F. Halsey Rogers. (2005). Teacher absence in India: A snapshot. *Journal of the European Economic Association*, 3*:2-3*, pp. 658-67.

Lee, V. E., & Zuze T. L. (2011). School Resources and Academic Achievement in Sub-Saharan Africa. *Comparative Education Review, 55(3).*

Leithwood, K., & Jantzi, D. (2009). A review of empirical evidence about school size effects: A policy perspective. *American Educational Research Journal*, *79*, 464-490.

McMillen, B. (2000). *School Size and its Relationship to Achievement and Behavior.* Public Schools of North Carolina. State Board of Education. Department of Public Instruction. Office of Instructional and Accountability Services. Division of Accountability Services. Retrieved from www.dpi.state.nc.us/docs/data/reports/size.pdf

Miller, R. T., Murnane, R.J., & Willet, J. B. (2007). *Do Teacher Absences Impact Student Achievement? Longitudinal Evidence from One Urban School District.* NBER Working Paper No. 13356. Retrieved from https://www.nctq.org/nctq/research/1190910822841.pdf

Moksony, F., (1990). Small is beautiful. The use and interpretation of R^2 in social research. *Szociológiai Szemle*. Special issue.130-138. Retrieved from http://www.academia.edu/3880005/Small_is_beautiful._The_use_and_interpretation_of_R2_in_social_research

Qualification Recognition. (2011). *Pakistan - Description of Education and Training System.* Retrieved December 5, 2013 from http://www.qualificationsrecognition.ie/pakistan-HigherEducationandTraining.html

Ready, D. D., & Lee, V., E. (2006). Optimal context size in elementary Schools: Disentangling the effects of class size and school size. *Brookings Papers on Education Policy: 2006/2007*

Reisinger, H. (1997). The impact of research designs on R2 in linear regression models: an exploratory meta-analysis. *Journal of Empirical Generalizations in Marketing Science, Volume Two,* 1-12. Retrieved from https://www.empgens.com/wpcontent/uploads/1997/06/ResearchDesignsR2.pdf.

Rogers. F.H. & Vegas. E. (2009). No more cutting class? Reducing teacher absence and providing incentives for performance. Policy Research Working Paper. 4847. *The World Bank Development Research Group Human Development and Public Services Team & Human Development Network Education Team.* Retrieved from https://core.ac.uk/download/pdf/6373142.pdf

Rose, P. (2013, April 22). Every child needs a good teacher, especially in the early grade [Web log post]. Retrieved September 5, 2017, from https://gemreportunesco.wordpress.com/2013/04/22/every- child-needs-a-teacher/

Santibanez, L. M. (2006). *School Based Management Effects on Educational Outcomes.* A literature review and assessment of the evidence base. Washington DC: The World.

Slate, J. R., & Jones, C. H. (2007). Secondary school size and gender differences in the state of Texas. *Essays in Education,23*. Retrieved from http://www.usca.edu/essays/vol232008/slate%20revised.pdf

Steifel, L., Berne, R., Iatarola, O., & Frucher, N. (2000). High school size: Effects on budgets and performance in New York City. *Educational Evaluation and Policy Analysis*, *22*(1), 27-39.

Suryadarma. D., Suryahadi. A., Sumarto, S. & Rogers, F.H. (2006). Improving student performance in public primary schools in developing countries: Evidence from Indonesia. *Education Economics*, *14:4*, pp. 401-29.

UNESCO (2017a). Reducing global poverty through universal primary and secondary education, Policy Paper 32/factsheet 44. Retrieved from http://uis.unesco.org/sites/default/files/documents/reducing-global-poverty-through-universal- primary-secondary-education.pdf

UNESCO (2017b). UNESCO moving forward the 2030 Agenda for Sustainable Development. *United Nations Educational, Scientific and Cultural Organization.* Retrieved from http://unesdoc.unesco.org/images/0024/002477/247785e.pdf

UNESCO Institute for Statistics (UIS). (2017). "More than one-half of children and adolescents are not learning worldwide". Fact Sheet No. 46. UIS/FS/2017/ED/46. *UNESCO Institute for Statistics (UIS).* Retrieved from http://uis.unesco.org/sites/default/files/documents/fs46-more- than-half-children-not-learning-en-2017.pdf

UNESCO Institute for Statistics (UIS). (2016). The world needs almost 69 million new teachers to reach the 2030 education goals. Fact Sheet No. 39. *UNESCO Institute for Statistics (UIS).* Retrieved from http://uis.unesco.org/sites/default/files/documents/fs39-the-world-needs-almost- 69-million-new-teachers-to-reach-the-2030-education-goals-2016-en.pdf

UNESCO (2015). *Incheon Declaration: Education 2030: Towards inclusive and equitable quality education and lifelong learning for all.* Retrieved from http://unesdoc.unesco.org/images/0023/002338/233813m.pdf

UNESCO (2010a). *Why Gender Equality in Basic Education in Pakistan?* Retrieved from http://unesco.org.pk/education/documents/publications/Why%20Gender%20Equality%20in%20Basic%20Education%20in%20Pakistan.pdf

Werblow, J., & Duesbery, L. (2009). The Impact of high school size on math achievement and dropout rate. *The High School Journal*, *92*(3), 14–23.

Zoda, P. F., Combs, J. P., & Slate, J. R. (2011). Black student performance and elementary school size: A 5-year statewide Investigation. *The ACEF Journal 2*(1), 43-64.

Annex-I: Operationalization of Variables

The Dependent Variables have been computed as:

a) The variable 'percentage children who can read a sentence in Urdu' was calculated by dividing the number of children who can read a sentence in Urdu by total number of children sampled minus number of children who were not tested in Reading Urdu. The output was multiplied by 100.

b) The variable 'percentage children who can do two-digit subtraction' was calculated by dividing the number of children who can do subtraction by total number of children sampled minus number of children who were not tested in Mathematics. The output was multiplied by 100.

c) The variable 'percentage children who can read a word in English' was calculated by dividing the number of children who can read a word in English by total number of children sampled minus number of children who were not tested in reading English. The output was multiplied by 100.

The Independent Variables were computed as:

a) Amenities: a five-point scale summing five nominal variables indicating the existence of five amenities: electricity, drinking water, toilets, boundary wall and useable toilets. 5 = all five amenities, 0 = no amenities.

b) Medium of instruction: 1 refers to a school in which the medium of instruction is Urdu; 0 = Pashto.

c) School size (Log): Log of number of children enrolled in schools in 2012.

d) Pupil-Teacher Ratio (grades Kachi-2): sum of children enrolled from kachi to grade 2 divided by number of teachers and multiplied by 100.

e) Pupil-Teacher Ratio (grades 3-5): sum of children enrolled in Grades 3 to 5 divided by number of teachers and multiplied by 100.

f) Teachers' Academic Qualification: Sum of teachers having a Matriculation Degree and a High School Degree, divided by total number of teachers in the school, multiplied by 100.

g) Teachers' Professional Qualification: Sum of teachers having a Primary Teaching Certificate (PTC) and Certificate in Teaching (CT), divided by total number of teachers in the school, multiplied by 100.

h) Teachers' Attendance: A dummy variable indicating percentage of teachers' (90% or more) present during the day of school visit by the surveyors of ASER team.

i) Multigrade: 1 refers to a school where the number of teachers is less than six indicating at least one multigrade class; all other schools (with 6 or more teachers) are defined as 0.

j) Rural: 1 refers to a rural school; 0=Urban school.

k) Girls school = 1 refers to a girls' school; 0=others

Strategies for Success: Gifted Students from Diverse Cultural Backgrounds Reflect on What Matters Most

Nakeiha Primus Smith

Abstract

This study was conducted to investigate factors which contribute to the success of gifted students from diverse cultural, linguistic, and low socio-economic backgrounds. Participants were 63 graduates of a secondary gifted and talented program in an urban school district. The graduates' perspectives were examined through the use of questionnaires. Resilience and coping strategies were among the contributing factors for the participants' success in gifted programs and after high school graduation. Further, increased exposure to and involvement with technology and community service programs also heightened students' ability to persevere and positively persist in the workforce. The results lead to instructional implications and recommendations for fostering success for all students from different cultural, linguistic, and low socio-economic backgrounds.

Keywords: diverse students, gifted education, secondary education, instructional strategies

Nakeiha Primus Smith, Ph.D. is an Assistant Professor of Education at Millersville University of Pennsylvania, U.S.A. She can be reached at nakeiha.primus@millersville.edu

The 2013-2014 "Estimations for Enrollment" report produced by the U.S. Department of Education indicated that 49.6% of all students enrolled in public elementary and secondary public schools were students from a wide variety of cultural and linguistic backgrounds (U.S. Department of Education, CRDC, 2014). Many of these students attend schools located in urban environments that are culturally and linguistically diverse, yet simultaneously face inequitable educational opportunities when compared to their White peers. Statistical analyses on dropout characteristics show higher dropout rates of Blacks and Hispanics who attend urban high schools (Ford, 1993; Natriello, McDill & Pallas, 1990; U.S. Department of Education, CRDC, 2014). The dropout rate for both Blacks and Hispanics in 2014 was 5.7% and 7.9% respectively, and remained higher than the rate for Whites at 4.7% (U.S. Department of Education Digest of Education Statistics, 2014). One factor in these discrepancies may be the continued dearth of students of color in gifted education programs. Often managing students' of color giftedness is seen as more challenging and/or perceptions of students' of color giftedness are limited (Grissom & Redding, 2016). This is evermore true for students who attend urban schools where teachers' capacity to recognize giftedness may be linked to identity biases related to race (Wong, 2016), socioeconomic status, and long held notions of a "typical" gifted student (Diket & Abel, 1994). Yet, when appropriately identified, gifted students of color embody a unique sense of resilience that demands more attention and equity in public schools throughout the United States (Kim, 2015; Kitano & Lewis, 2004).

Literature Review

Enrollment of culturally diverse students in gifted programs

Most studies of the late 20th and early 21st century note students of color are disproportionately underrepresented in programs designed to serve gifted and talented students. Ford, Grantham, and Whiting (2008) state, in fact, "[i]n the past 70 years educators have been

concerned about the paucity of Black students being identified as gifted" (p. 289). Although African-American students constitute 15.5% of public school enrollment, they represent 9.9% of the students selected for the gifted and talented programs during the 2013-2014 school year (CDRC, 2014) and similar trends exist for Hispanic, Asian American, and multiracial students. These discrepancies may, in effect, make qualified and capable students disadvantaged educationally. Students of color who could be gifted become bored and educationally apathetic as a result of their inability to harness and/or facilitate their curiosity and academic aptitude (Diket & Abel, 1994; Kim, 2015). As a result, they may be less likely to be enrolled in academic programs that prepare them for college (U. S. Department of Education, 1989) and may become educationally disadvantaged (Renzulli & Owen, 1983).

Researchers since the early 1960s report children from typically educationally disparate or oppressed groups tend to score lower than do Whites on various measures of cognitive ability and academic success (Kovach, 1991; Murphy, 1986). As a result, they are disproportionately placed in special classes for the students with cognitive disabilities. This discrepancy has been explained by theories that emphasize the roles of economics, home environment, and cultural factors (Murphy, 1986). These theories suggest that although the socioeconomic status, home and family characteristics and ethnic backgrounds of many minority groups differ from those of mainstream society, the educational system reflects the values and experiences of the dominant, White culture (Emdin, 2016; Murphy, 1986;). As a result, students from different cultural and linguistic backgrounds are at an educational disadvantage throughout their school years (Nieto & Bode, 2012).

Traditional definitions of giftedness date back to the early 1920s, when Terman (1925) introduced a one-dimensional definition. Referred to as the 'top one percent in overall

intelligence ability' on the Stanford-Binet Intelligence Test (Ford & Harris, 1990), many categorizations of giftedness align with this description. In fact, since their development, the use of intelligence tests to determine giftedness continued to gain popularity throughout the 20th century (Renzulli, 2011). In response to the call for a more representative definition that could better reflect the many manifestations of giftedness, alternative definitions were offered. Through the Marland Report to Congress (1972), the U.S. government set the stage for such inclusivity. Stemming from work done to pass The Gifted and Talented Children's Educational Assistance Act of 1969, the Marland Report supported mandated funding for gifted students in public schools (Jolly & Robbins, 2016). Giftedness, as a result, ascribed certain characteristics to children including: general intellectual ability; specific academic aptitude; creative or productive thinking; leadership ability; visual and performing arts aptitude; and psychomotor ability (Ford & Harris, 1990; Gross, 2013).

With this definition, researchers continued to expand and better address the needs of gifted children. Joseph Renzulli (1981) followed this with the Revolving Door Model (RDM), a more holistic and inclusive assessment tool for identifying gifted behaviors and facilitating their propensity for autonomous learning. The RDM was used in the present study and highlights the giftedness as an interaction among three basic clusters of human traits. These clusters are: (a) above-average general ability, (b) high levels of task commitment, and (c) high levels of creativity. According to RDM, gifted and talented students are those who possess or are capable of developing this composite set of traits and applying them to any potentially valuable area of human performance. RDM underscores giftedness as primarily behavioral and, therefore, should not be identified through an "oddly mechanistic system [… built on] ever growing combinations of tests scores" (Renzulli & Owen, 1983, p. 39). The clusters Renzulli outlines, in fact, are not

always present nor do they always interact with one another (Renzulli & Owen, 1983), which is an important departure from more traditional measures. Skeptics critique RDM because it relies heavily on measures that would, through more holistic use, require identification that goes beyond absolutes and taps into the nuances of idiosyncratic personality, learning style, and other behavior-based manifestations. By further expanding the traditional definition of giftedness, RDM contributes to more equitable assessments, particularly for marginalized student populations. As RDM continues to be offered and used to identify students, the overall representation of these groups in gifted and talented programs increases.

In 1993, and likely in response to a decade diminished faith in the American public school system outlined in *A Nation at Risk* (1983), the United States government addressed two issues specific to minority student education: (a) students must be compared with others of their age, experience, or environment; and (b) outstanding talents are present in individuals from all cultural groups across all economic strata, and in all areas of academic endeavor (Ford, 1994). Interestingly, gifted students from different cultures share certain characteristics of giftedness, which include: the ability to meaningfully manipulate some symbolic system; the ability to think logically, given appropriate information; the ability to used stored information to solve problems; the ability to reason by analogy; and the ability to extrapolate knowledge to new or novel situations (Ford, 1994). Moreover, gifted students of color learn quickly through experience, retain and use information well, are adept at generalizing learning to other areas; at seeing relationships among apparently unrelated parts, and at solving problems in resourceful ways (Borland & Wright, 1994; Ford, 1994; Ford, 2010). As a result, efforts were put forth to address not only the obvious underrepresentation of these students in gifted programs, but also find out why such discrepancies existed at all.

Gifted Students from Diverse Cultural and Linguistic Backgrounds

The talents of students from different cultural and linguistic backgrounds have been largely under-developed. At the beginning of the twentieth century, the talents of these students were unrecognized (Eby & Smutny, 1990) or overlooked entirely. In the early 1930s, researchers such as Samuda (1975) began to denounce the cultural bias of testing. One significant contributor was Raymond Cattell, who developed the Culture Fair Intelligence Tests in an effort to assess academic capacity free from cultural bias. In critiquing his contemporaries, Binet and Otis in particular, he showcased how oft-used and 'traditional' intelligences tests favor "the native" (Cattell, 1940, p. 166) by overtly assessing shared cultural knowledge (usually learned through social interaction) rather than one's innate intellectual ability. In the 1960s and 1970s, in response to the Civil Rights Movement, research on testing bias forced educators to seek alternative means of assessment (Eby & Smutny, 1990). Mercer & Lewis developed the System of Multicultural Pluralistic Assessment (SOMPA) in 1977. This assessment "takes into account underlying social and political assumption[s]" inherent to a society which so heavily valued European customs and ideals (Mercer & Lewis, 1979, p. 285). Innovation and adjustments to these assessments continued well into the late 20th century.

In fact, "the eighties were marked by an increasing interest in the atypical gifted who are described generally as consisting of ethnic, racial, and linguistic minorities, the economically disadvantaged, gifted females, gifted underachievers, and the gifted/disabled" (Reis, n.d.). As a Result, many educational and social programs were introduced to improve opportunities for students from various cultural, linguistic, and lower economic backgrounds. This trend continues today, as other researchers (Harradine et. al, 2014) work to eradicate some of long held methods for assessing giftedness in students from diverse backgrounds.

Researchers have noted how many gifted students of color struggle to define themselves and their unique characteristics within the larger society (Lindstrom & VanSant, 1986; Reis & Renzulli, 2009), and this understanding is crucial. According to Betts (1985), gifted students must have an understanding of the term gifted, so they are: 1) able to relate the concept to their lives, and 2) able to understand how their giftedness, in particular, can impact educational opportunity and success. As part of the orientation stage (among four other dimensions) of the Autonomous Learner Model for the Gifted and Talented (ALM), Betts (1985) argues developing an understanding of giftedness is critical in helping students "continually seek life enhancing experiences in exploration and investigation" (Betts, Kapushion, & Carey, 2016, p. 201) needed to creatively and responsibly address macro world issues. Gifted students, according ALM, need to see the purpose and potential of their giftedness.

However, for students from different cultural, linguistic, and lower economic backgrounds, this type of positive agency, particularly in educational settings, can be a challenge. For one, fewer students are identified as gifted in these communities. The use of IQ tests and other measures (Colangelo & Zaffran, 1979) used to assess giftedness, overtly exclude marginalized students and further distance them from their intellectual potential. Recently, researchers have sought to further expand the tools used to assess this type of exceptionality because of the inherent biases such tests have when used with diverse populations (Frasier & Garcia, 1995; Valler et. al, 2017). Moreover, giftedness, in these students, may manifest in non-psychometric ways such as creativity, leadership, psychomotor ability, arts aptitude and an ability to recover quickly from setbacks. As Betts (1985) emphasizes, these multiple measures of intelligence, and their recognition, allow gifted students, and perhaps most especially non-

traditional gifted students, to see themselves as vital contributors to the world through their ability to be autonomous learners.

Resiliency

The use of the theory of resilience has gained popularity since the early 1990s in the field of education. Resilience is a protective mechanism that modifies one's response to a risk situation (Kitano & Lewis, 2004). Protective factors increase the likelihood that individuals will adapt or cope effectively with stressors. However, it is seldom used in relations to gifted youth, possibly because of the misunderstanding that gifted youth experience few barriers to academic achievement and the myth that they have few social and emotional concerns (Ford, 1994; Ford, 2010). In addition, while studies have examined resilience among minority youth, they have not focused on gifted minority youth (Ford, 1994). Ford (1994) synthesized the research on resilience and found that stressors must be examined in terms of their frequency, intensity, duration, co-occurrence, kind or type, timing and focus. Kitano and Lewis (2004) cited four factors that are effective in assisting students developing resilience: (a) the reduction of negative outcomes by altering either the risk or exposure to the risk; (b) the reduction of the negative chain reactions following exposure to the risk; (c) the establishment and maintenance of self-esteem and self-efficacy; and (d) the opening of opportunities. Though coping strategies differ depending upon the situation, these strategies enhance self-efficacy, which in turn, support resiliency. This is in alignment with the strategies that enhance resilience, including fostering a strong relational bond and encouraging a positive outlook and increased confidence in one's ability. These, in turn, validate a student's experience and helps bridge gaps when cultural fissures erupt as the result of bias (Kim, 2015; Kitano and Lewis, 2004).

Conclusion

Students from pluralistic cultural, linguistic, and low SES backgrounds continue to be underrepresented in gifted programs. There is a need to better understand the support structures present in schools, family and community environments of students from culturally different and disadvantaged backgrounds to better inform intervention strategies, as they relate to gifted education. However, there is hope for more gifted students from culturally diverse backgrounds to be identified by using such options as the Revolving Door Identification Model of Joseph Renzulli (1981). Obtaining information from the graduates of the current gifted programs may enable us to focus on how to nurture students' academic success and positive educational outcomes. Additionally, this data may provide insights about how to further expand assessments related to giftedness, strategies to help gifted students socio-emotionally, and support teachers whose implicit biases may impede disenfranchised students' access to appropriate gifted education.

Method

Participants

Participants for this study were 63 graduates from one secondary school's (The School) gifted and talented program. Each participant entered The School from one of two magnet elementary/middle schools in the District. The two gifted programs used for this study utilized several non-cognitive measures to assess students' appropriateness for admission. The use of matrices that assessed students' self-perceptions, attitudes toward school, levels of motivation, learning styles and test taking and study skills were major factors in their consideration when choosing students for admission. Students who scored high in the areas of motivation and commitment were preferred over students with high IQ scores. Though most of the students

were performing below grade level before they were admitted into the programs, almost 100% of them performed at or above grade level in reading and mathematics based on the standardized achievement tests while in the gifted programs. Further, many maintained a grade of 'B' or higher when they went to high school.

The present study included 21 males and 42 females. They identified as: 17 African-American, 38 Hispanic-American, 5 Euro-American, and 3 Asian-American using the local Board of Education racial designations. Only participants who were classified through these designations were eligible to participate in the study. Each participant attended The School for at least three years and at most four years. Each participant completed high school at the time of data collection and was attending college, completed college, or was employed. Participants ranged in age from 20 to 30 years old.

The School

The School was created in the mid-1980s for gifted students in fourth through eighth grades in a major urban district located in the northeast United States. Its mission aimed to increase participation of traditionally underrepresented students in advanced study in mathematics, science and technology. The District, where The School is located, is composed of several socioeconomic and linguistically diverse communities with high populations of Latino, African American, and immigrant families. At the time of this study, The School had approximately 400 students enrolled with over 90% of students identified as Hispanic and 80% of students receiving free lunch.

Since its inception, The School has been a magnet school, and the accomplishments of the students have been well documented. For several years, 100% of its students reading scores were at or above grade level and 99% of its students performed at or above grade level in

mathematics. Upon graduation, however, students usually attend their local high school within the District. The students in this study acquired certain skills and resiliency strategies at The School that made them successful in high school and beyond. Consequently, many students have won Oliver Scholarships to be used for tuition expenses at private schools such as Dalton, Exeter and Choate. Further, many graduates of The School went on to pursue postsecondary education at prestigious universities such as Harvard, MIT, and Yale among others.

Design

The present study used a questionnaire for data collection. The use of questionnaires allowed for an examination of selected issues related to the participants by using descriptions and direct quotations to capture the essence of the individual's personal experiences (Patton, 1990). The questionnaire survey was distributed to each participant via postal mail.

Materials

The materials for this study included an adapted survey constructed by Bensman (1994). For the purpose of this study, 21 of the 32 original survey questions were used. The 21 questions were chosen due to their appropriateness for the high school population. Of the 21 questions, 17 were used for the main analysis and the remaining four questions were used to obtain demographic information.

The questionnaire contained both closed and open-ended questions; however, the closed questions were used for this study. By using closed-ended questions, it allowed the researcher to obtain answers specific to the purpose of the study.

Some of the survey questions involved reading one sentence. For example, "When you left your School, and went to college, what strengths did you feel you brought to your new school?" The response options for this question were, "(a) spelling/punctuation, (b) math skills,

(c) reading, (d) independent learning skills, (e) study habits, (f) meeting deadlines, (g) lots of specific knowledge, (h) writing skills, (i) other (please list in space provided), and (j) none." The participant circled all responses that applied.

Procedure

One hundred surveys were mailed with self-addressed, stamped return envelopes to the qualified participants based on the above criteria. The participants were instructed to return the survey within two weeks. Of the 100 surveys sent, 63 were returned within 4 weeks of mailing. Of the 100 surveys that went out, 63 responded, 29 had incorrect addresses, and 8 did not respond. No follow-up surveys were sent to those who did not respond to the initial mailing and they were excluded from the study.

Analysis of the Data

The data analysis for this study was mainly descriptive. Research questions were answered through the analysis of the frequencies and distributions of responses to the questionnaire items. For questions number 6 and 7, space was provided for the participants to explain or further elaborate on their answers. The data analysis of the survey consisted of reading the transcripts of descriptive responses and sorting important information based on its relevance to the research questions. Major themes relating to the research questions were highlighted with different colors. Recurring themes were identified and categorized based upon the participant responses to the research questions and cross-referenced with the responses on the structured questionnaires.

Results

Data are presented in the order that the questions were asked on the instrument. The responses to the questions are presented in tabular form below.

Survey question 1 asked, "When you left your School and went to college, what strengths did you feel you brought to your new school?" Participants were instructed to indicate all choices which applied; therefore, the responses did not add up to 100%. The largest number of participants (n=38) indicated that they felt reading was their greatest strength after leaving the School. Math and writing skills were second and third respectively. Spelling, punctuation, independent learning skills and meeting deadlines were also indicated by over half of the participants as what helped them succeed in their gifted programs. A few number of participants (4) indicated that study skills were an area of strength for them.

Table 1

Frequencies and Distributions of Participants' Responses to Strengths (N = 63)

When you left your school, and went to college, what strengths did you feel you brought to your new school?	Frequency	%
Spelling/Punctuation	39	61.9
Math Skills	37	58.7
Reading	54	85.7
Independent learning skills	31	49.2
Study skills	4	6.3
Meeting deadlines	41	65.1
Writing skills	29	46.0
No strengths	0	0.0

Survey question 2 asked, "When you left your School and went to college, did you have any weaknesses you had to overcome?" Students were instructed to indicate all choices which applied; therefore, the responses did not add up to 100%. Seventy-three percent of the

participants felt that they had no weaknesses to overcome when they went to college from the gifted program. Nine percent of the participants indicated that they felt they had difficulty with study habits. Less than 10% of participants indicated that math, writing skills, spelling/punctuation were areas of weakness.

Table 2

Frequencies and Distributions of Participants' Responses on Weaknesses (N = 63)

Did you have any weaknesses you had to overcome?	Frequency	%
Spelling/punctuation	5	7.9
Math skills	3	4.8
Reading	1	1.6
Independent learning skills	4	6.3
Study habits	12	19.0
Meeting deadlines	1	1.6
Writing skills	2	3.2
No weaknesses to overcome	35	55.6

Survey question 3 asked, "Which program(s) did you participate in while attending The School?" Participants were instructed to indicate all choices that applied, and as a result were quantified beyond 100%. Ninety-nine percent of the participants participated in Technology (53%) and Community Service (44%) respectively.

Table 3

Frequencies and Distributions of Participants on Program Participation (N = 63)

Which program(s) did you participate in while attending the School?	Frequency	%
Technology	57	90.5
Support Net	63	100
Mentoring	48	76.2
Community Service	53	84.1
After School Program	6	9.5
Other	29	46.0

Survey question 4 asked, "Which program(s) did you feel had the most benefit to you?" Many of the participants (90.5%) who participated in the technology program felt it held the most benefit for them. Of the 63 participants, 84.1% felt that Community Service was the most beneficial to them. While 46.0% indicated the choice "Other" and wrote in the programs such as Science and Technology Entering Program (STEP), National Dance Institute (NDI), and the Engineering Program.

Survey question 5 asked, "What kind of grades did you receive in college?" Most of the participants (61%) reported that they were "B" average while 39% of the participants indicated that they were "A" average college students.

Survey question 6 asked, "Did you graduate from college?" or "Are you still enrolled in college?" Of the 63 participants, 96% of them have graduated from college. However, 4% of the participants did not graduate from college, but instead got a full-time employment positions. No one was still attending college at the time the survey was completed.

Survey question 7 asked, "Have you been involved in math, science or technological activities since the you graduated from your School?" If the response was "yes" they were asked to describe them. Of the 63 participants, 59 (94.0%) of them indicated that they have been involved in math, science or technological activities since the high school. Several of the activities included advanced math or science classes in college, computers, internships in hospital settings and college settings. Of the 63 respondents, 4 (6.3%) indicated that they were not involved in math, science or technological activities since leaving The School.

Summary

The purpose of this study was to examine the perspectives of the graduates from a school with gifted and talented programs to determine how students respond to their educational settings and the educational interventions provided. In general, the participants rated their educational experience at The School very positively. As a result of their school experience, a large majority of the participants indicated that upon entering college, they gained strengths in the areas of math, reading and writing skills. Many participants felt that they also entered college with strengths in the areas of independent learning skills, meeting deadlines and specific knowledge; however, some of the graduates felt that they had to overcome poor study skills. Many of the graduates indicated they found the technology program and community service opportunities at The School to be the most beneficial to them.

It also examined the perspectives of the graduates related to their perceptions of parental/community influence on their educational experience, while simultaneously exploring if there are cultural and/or gender differences in the perspectives of the graduates. Knowing what helped students, from diverse backgrounds who graduated from current gifted programs succeed, from the students' perspective, will be another stepping stone in how to effectively design gifted

programs for all students from different cultural, linguistic, and low SES backgrounds.

Discussion

The Graduates' Educational Progress

The graduates maintained an admirable record of academic achievement. This is important because the unemployment rate is high for young people from different cultural and linguistic backgrounds (White, 2015). Yet, each of the participants in the study either graduated from college or obtained full-time positions upon graduating from high school. Moreover, their inclusion in a gifted program at The School made their achievements more significant. There, they acquired and cultivated resiliency and academic fortitude they may not have developed elsewhere. It is fair to suggest that the use of identification methods that are culturally sensitive to differences instead of traditional IQ methods opened doors for these participants they may not have otherwise had in their subsequent educational environments.

Most of the participants identified key areas in which The School's educational program contributed to their school success and these factors included: teachers who provided support, encouragement and guidance; engagement with a stimulating curriculum that offered challenging activities that engaged their interest and developed critical thinking and problem solving skills; and the provision of opportunities for enrichment through partnerships and mentoring programs with business and other educational institutions.

Curriculum Implications

Non-traditional methods for identifying potentially gifted students seems to be a more accurate predictor of academic success for students from marginalized cultural backgrounds. While many of the students from dominant cultures are accepted to the gifted programs based on their high scores on standardized tests, these criteria do not give equal opportunity to students

from other backgrounds (Frasier & Garcia, 1995; Kim, 2015). This evidence displays how alternate measures of assessment can be more accurate predictors of the students' potential for success in gifted programs and beyond are reasonable given the persistent underrepresentation of marginalized students in these programs.

Additionally, specific responses from the students are notable. Although many more students felt they were stronger in reading than in math, 90% percent of the participants indicated the value of the technology program to their education while 95% indicated that they continued to be involved with math, science or technology. So, while it appears that students initially felt less secure in their math ability, the program had positive influence on their knowledge and skill development as well as interest to pursue STEM studies. Additionally, 84% percent noted the value of community service to their learning, and 49.2% acknowledged the development of independent learning skills. Although the data from the survey does not indicate why students felt the community service experience to be beneficial, the development of independent learning skills were helpful to the students continued studies.

The participants indicated their gifted programs incorporated several opportunities that helped them learn in more co-generative ways (Emdin, 2016) which included, but were not limited to: after-school programs, weekend and summer enrollment; the provision of accelerated courses at local universities and programs offered by specialized schools in mathematics and science; the use of hands-on learning techniques such as laboratory classes and independent research projects; and the provision of out-of-school activities designed to enhance students cultural and intellectual development, such as business and industry mentorships. By fostering several opportunities and environments their intellectual capacity was married with their lived experiences (home communities, social circles), and these students excelled.

Additionally, opportunities were provided to introduce students to the world of work in careers related to Mathematics, Science and Technology. During their time in the gifted program, students worked on projects with professionals in the fields of architecture, banking, electronics, law, business, design, engineering and medicine. Students were also introduced to various career options in the nonprofit sector through their participation in volunteer service programs in the communities where they live. In this way, not only did these students see academic excellence reflected in their communities by members who could speak to their interests, but also they did not have to choose between academic achievement and social acceptance.

Conclusion

This study sought to investigate factors which contribute to the success of gifted students from diverse cultural, linguistic, and low socio-economic backgrounds who graduated from a secondary school gifted program. Students entered the program with many natural abilities that were further refined; especially in the areas of reading, math, science, and technology. Students experienced additional benefits, such as community service involvement, that they felt were helpful as they continued their pursuit of education. Although students believed that their reading skills were at a higher level than their math skills, many pursued studies in the STEM areas. Most notably they felt that their resilience, ability to adapt, and improved study skills were key factors in their continued success. While these results are unique to this program, they do align closely with information in the literature making them potentially more generalizable to other locations. Continued research of gifted programs for students in low-socioeconomic backgrounds of other ages and locations would add to the scope of literature and, potentially, the programs offered.

References

Anderson, M. (2017). Do Conversations about Race belong in the Classroom? *The Atlantic,* Retrieved from: https://www.theatlantic.com/education/archive/2017/09/beverly-daniel-tatum-classroom-conversations-race/538758/

Bensman, D. (1994). *Lives of the graduates of Central Park East Elementary School.* New York: Teachers College Press.

Betts, G., Kapushion, B. & Carey, R. (2016). The Autonomous Learner Model. In Ambrose, D. & Sternberg, R. (Eds.) *Giftedness and Talent in the 21st Century: Adapting to the Turbulence of Globalization*. Boston: Sense Publishers.

Bonner II, F. A., Lewis, C. W., Bowman-Perrott, L., Hill-Jackson, V., & James, M. (2009). Definition, identification, identity, and culture: A unique alchemy impacting the success of gifted African American millennial males in school. *Journal for the Education of the Gifted*, *33*(2), 176-202.

Borland, J. H. & Wright, L. (1994). Identifying young, potentially gifted, economically disadvantaged students. *Gifted Child Quarterly, 38*(4), 164-171.

Burley, H., Barnard-Brak, L., Marbley, A., & Deason, C. (2010). African American millennials a profile of promise. *Gifted Child Today*, *33*(2), 47-54.

Cattell, R. B. (1940). A culture free intelligence test I. *Journal of Educational Psychology, 31*(3), 161-179.

Colangelo, N. & Zaffron, F. (1979). Special issues in counseling the gifted. *Counseling & Human Development, 2*(5), 1-12.

Diket, R.M & Abel, T. (1994). *Atypical gifted learners and their characteristics*. Hattiesburg, MS: William Carey College.

Eby, J. W. & Smutny, J. F. (1990). *A thoughtful overview of gifted education.* New York: Longman.

Emdin, C. (2016). *For white folks who teach in the hood…And the rest of y'all too.* Beacon Press: NY.

Ford, D. Y. (1993). Support for the achievement ideology and determinants of underachievement as perceived by gifted, above-average, and average Black students. *Journal for the Education of the Gifted, 16*(3), 280-298.

Ford, D. Y. (1994). Nurturing resilience in gifted black youth. *Roeper Review*, *17*(2), 80.

Ford, D. Y. (2010). Underrepresentation of Culturally Different Students in Gifted Education: Reflections about Current Problems and Recommendations for the Future. *Gifted Child Today, 33*(3), 31-35.

Ford, D. Y., & Whiting, G. W. (2007). A mind is a terrible thing to erase: Black students' underrepresentation in gifted education. *Multiple Voices for Ethnically Diverse Exceptional Learners*, *10*(1/2), 28-44.

Ford, D. Y., & Whiting, G. W. (2010). Beyond testing: Social and psychological considerations in recruiting and retaining gifted Black students. *Journal for the Education of the Gifted*, *34*(1), 131-155.

Ford, D. Y., Grantham, T. C., & Whiting, G. W. (2008). Culturally and linguistically diverse students in gifted education: Recruitment and retention issues. *Exceptional Children*, *74*(3), 289-306.

Ford, D. Y. (2011). Closing the achievement gap: Gifted education must join the battle. *Gifted Child Today*, *34*(1), 31-34.

Ford, D. Y., & Grantham, T. C. (1996). Multicultural gifted education: A wakeup call to the profession. *Roeper Review*, *19*(2), 72.

Ford, D. Y. (2010). Underrepresentation of culturally different students in gifted education: Reflections about current problems and recommendations for the future. *Gifted Child Today*, *33*(3), 31-35.

Frasier, M., Garcia, J.H. & Passow, H. (1995). A Review of Assessment Issues in Gifted Education and Their Implications for Identifying Gifted Minority Students. *The National Research Center for the Gifted and Talented*. DIANE Publishing.

Frye, B. J., & Vogt, H. A. (2010). The causes of underrepresentation of African American children in gifted programs and the need to address this problem through more culturally responsive teaching practices in teacher education programs. *Black History Bulletin*, *73*(1), 11-17.

Grissom, J. & Redding, C. (2016). Discretion and Disproportionality: Explaining the Underrepresentation of High-Achieving Students of Color in Gifted Programs. *AERA Open, 2*(1), 1-25. Retrieved from: https://news.vanderbilt.edu/files/Grissom_AERAOpen_GiftedStudents1.pdf

Gross, G. (2013). Who Is the Gifted Child? *Huffington Post.* Retrieved from: https://www.huffingtonpost.com/dr-gail-gross/who-is-the-gifted-child_b_4119720.html

Harradine, C., Coleman, M., & Winn, D. (2014). Recognizing Academic Potential in Students of Color: Findings of U-STARS~PLUS. *Gifted Child Quarterly, 58*(1), 24-34.

Hopkins, A., & Garrett, K. (2010). Separate and unequal: The underrepresentation of African American students in gifted and talented programs. *Black History Bulletin*, *73*(1), 24-30.

Hussar, W. J. &. Bailey, T.M (2009). *Projections of education statistics to 2019.* U.S. Department of Education, Institute of Education Statistics, National Center for Education Statistics. Retrieved from http://nces.ed.gov/programs/projections/projections2019.

Kitano, M.K. & Lewis, R. B. (2004). Resilience and coping: implications for gifted children and youth at risk. *Roeper Review, 27*(4), 200-205.

Kim, M. (2015). Enhancing resilience of gifted students. *TEMPO: Journal of the Texas Association for the Gifted and Talented, 36*(3), 17-21.

Kovach, J. A. (1991). Risks associated with poverty: An analysis of problems and reform needs of urban schools. In Wang, M. C., Reynolds, M. C., & Walberg, H.J. (Eds.), *Handbook of special education: Research and practice, Volume 4: Emerging Programs.* (pp. 199-214). Oxford, England: Pergamon Press.

Lindstrom, R. R. & VanSant, S. (1986). Special issues in working with gifted minority adolescents. *Journal of Counseling and Development, 64*, 583-586.

Lovett, P. (2011). Solutions for Jay and other underrepresented gifted minority students. *Gifted Child Today*, *34*(1), 55-59.

Luthar, S. S. (1991). Vulnerability and resilience: A study of high-risk adolescents. *Child Development, 62*(3), 600-616.

Nuttall, E.V. (1979). Reviewed work(s): System of multi-pluralistic assessment (SOMPA) by Jane Mercer and June F. Lewis. *Journal of Educational Measurement, 16*(4), 285-290.

Murphy, D. M. (1986). Educational disadvantagement: Associated factors, current interventions, and implications. *Journal of Negro Education, 55*(4), 495-507.

Natriello, G., McDill, E. L., & Pallas, A. M. (1990). *Schooling disadvantaged children: Racing against catastrophe.* New York: Teachers College Press.

Nieto, S. & Bode, P. (2012). *Affirming diversity: The sociopolitical context of multicultural education.* Pearson: NY.

Patton, M. Q. (1990). *Qualitative evaluation and research methods* (2nd ed.). Newbury Park, CA: Sage.

Reis, S. & Renzulli, J.S. (2009). Myth 1: The gifted and talented constitute one single homogeneous group and giftedness is a way of being that stays in the person over time and experiences. *Gifted Child Quarterly, 53*(4), 233-235.

Reis, S. (n.d.). Major turning points in gifted education in the 20th Century. *Neag School of Education Renzulli Center for Creativity, Gifted Education, and Talent Development*. Retrieved from: https://gifted.uconn.edu/schoolwide-enrichment-model/major_turning_points/

Renzulli, J.S. (1981). *The revolving door identification model*. Connecticut: Creative Learning Publishers.

Renzulli, J.S. & Owen, S. V, (1983). The revolving door identification model: If ain't busted don't fix it, if you don't understand it don't nix it. *Roeper Report*, *6*(1), 39-41.

Renzulli, J. S., Reis, S. M., Hebert, T. P. & Diaz, E. I. (1995). The plight of high ability students in urban schools. In M. C. Wang & M. C. Reynolds (Eds.), *Making a difference for students at risk: Trends and alternatives*. pp. 62-89. Thousand Oaks, CA: Corwin Press, Inc.

Renzulli, J. S. (2011). What makes giftedness? Reexamining a definition. *Phi Delta Kappan*, *92*(8), 81-88.

Samuda, R. J. (1975). *Psychological testing of American minorities: Issues and consequences.* New Jersey: Dood, Mead.

Terman, L. M. (1925). Mental and Physical Traits of a Thousand Gifted Children. *Genetic Studies of Genius Volume 1*. Stanford (CA): Stanford University Press.

Tucker, C., Dixon, A., & Griddine, K. (2010). Academically successful African-American male urban high school students' experiences of mattering to others at school. *Professional School Counseling*, *14*(2), 135-145.

U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics (February, 2009). *Statistics in brief: Course credit accrual and dropping out of high school, by student characteristics.* Retrieved from http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2009035

U.S. Department of Education (April, 2011). *Digest of education statistics.* Retrieved from http://nces.ed.gov/programs/digest/d10/index.asp

U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics (2010). *Number of gifted and talented students in public elementary and secondary schools, by sex, race/ethnicity, and state: 2004 and 2006.* Retrieved from: http://nces.ed.gov/programs/digest/d10/tables/dt10_048.asp

U.S. Department of Education, Civil Rights Data Collection (2014). *State and national enrollments, 2013-2014.* Retrieved from: https://ocrdata.ed.gov/StateNationalEstimations/Estimations_2013_14

Valler, E., Burko, J.A., Pfeiffer, S., & Branagan, A. (2017). The test authors speak: Reporting on an author survey of the leading tests used in gifted assessment. *Journal of Psychoeducational Assessment*, *35*(7), 695-708.

VanTassel-Baska, J. (2008). Disadvantaged learners with talent. *Counseling & Human Development*, *41*(4), 1-12.

VanTassel-Baska, J., Feng, A., Swanson, J., Quek, C., & Chandler, K. (2009). Academic and affective profiles of low-income, minority, and twice-exceptional gifted learners: The role of gifted program membership in enhancing self. *Journal of Advanced Academics*, *20*(4), 702-739.

White, G. (2017). Education gaps don't fully explain why black unemployment is so high. *The Atlantic,* Retrieved from: https://www.theatlantic.com/business/archive/2015/12/black-white-unemployment-gap/421497/

Wong, A. (2016). Why are there so few black children in gifted programs? *The Atlantic.* Retrieved from: https://www.theatlantic.com/education/archive/2016/01/why-are-there-so-few-black-children-in-gifted-and-talented-programs/424707/

Appendix A: Survey Instrument

Copies of the adapted survey instrument used in this study are available upon request from the author.

Literacy Coaching Candidates: Motivation, Perceptions, and Expectations

Tina Selvaggi

Abstract

This study examined the motivation, perceptions/future plans, and expectations of postgraduate students (referred to as literacy coaching candidates) enrolled in the first course of a Literacy Coaching Endorsement program at a large comprehensive institution of higher education. Results from data focus to: What motivates a licensed Reading Specialist to enroll in a post graduate program to obtain a Literacy Coaching Endorsement; what the students' expectations of the program and of coaching are; and students' perceptions/future plans at the end of the semester and plans for the rest of the cohort program. The data revealed the need for literacy coaching candidates to build confidence, look to new careers paths, become reflective practitioners, and consider the workload of the program. Collaboration with the professor and peers in the program was also considered.

Keywords: Literacy Coaching, Reading Specialist, Reading Professionals, Post-Graduate

Tina Selvaggi, Ed.D. is an Associate Professor in the Department of Literacy at West Chester University of Pennsylvania. She can be reached at tselvaggi@wcupa.edu.

Introduction

The International Literacy Association (formerly International Reading Association) Standards for Reading Professionals require an emphasis on literacy coaching in preparation programs for reading professionals (International Reading Association, 2010), stating that the supervised practicum experience should require candidates to work with students who struggle with reading, as well as collaborative and coaching experiences with teachers. *The International Literacy Association considers the positions of the Reading Specialist/Literacy Coach to be one role and expects to see evidence of both in graduate candidates.* The Pennsylvania Department of Education recognized the need for further education in the area of coaching and created an endorsement in instructional coaching that could be added to existing graduate level courses. A large comprehensive institution of higher education with a dedicated Literacy Department created an endorsement program focusing on literacy based on the Pennsylvania Department of Education's guidelines for a coaching endorsement. This program is comprised of four courses that can be taken after an educator is a licensed Reading Specialist in the State of Pennsylvania. The program included a course on the theories of literacy coaching, a course on the analysis of data to inform coaching, a leadership/change theory course and a hands-on practicum course. This study examines the first cohort of students enrolled in the first course in this newly created program. Background information about literacy coaching is followed by a description of the study, the findings, and implications. The findings from this research validate the importance of the understanding the needs of literacy coaching candidates when developing a program for endorsement.

Need for the Study

The area of literacy coaching was prevalent in the early part of the last decade and recently

experienced a resurgence due to school district needs and grant opportunities. Because of this resurgence, a large comprehensive higher education institution began offering a four-course Literacy Coaching Endorsement program as a postgraduate offering. Since this was a new offering, a need existed for more information and research about the motivation, expectations, and perceptions/future plans of these post-graduate students.

Review of Literature

Roles of the Literacy Coach

The International Literacy Association released a research brief entitled *The Multiple Roles of School-Based Specialized Literacy Professionals* in 2015. This research brief defined the role of the literacy coach as someone who improves classroom instruction by improving teacher learning. According to the research brief, some of the many responsibilities of a literacy coach can include: serving as a resource to teachers through the coaching cycle, providing support for changes in instructional practice, managing school wide literacy programs, and providing professional development and leadership (International Literacy Association, 2015). The role of the literacy coach is further discussed in a national study (Bean, Kern, et al., 2015), which found that literacy coaches worked primarily with teachers, spending more time in coaching activities while reading specialists spent more time working with students experiencing reading or writing difficulties.

Qualifications for Literacy Coaches

Besides information from the International Literacy Association, it is important to examine research to inform our understating of the qualifications for what is still considered a relatively new position in the K-12 educational environment. Frost and Bean (2006) established a "gold standard" for literacy coaching qualifications that includes: A Master's degree in literacy;

additional credentials in coaching; successful teaching experience; experience working with teachers, observing, and modeling lessons; and excellent presentation skills. This research highlights the need for a coaching endorsement with its inclusion of additional credentials in coaching.

Bean and Isler (2008) discussed the importance of Literacy Coaching and how this position increases teachers' abilities to be literacy instructors. The importance of developing a coaching program collaboratively by including administrators, key teachers, school board members, and union representatives is also discussed. This collaboration should lead to a clear job description for the literacy coach. Support from principals and district personnel is important for coaches to have time for collaboration along with opportunities for networking within the field of literacy. Ongoing evaluation and assessment should provide feedback and performance and change in teacher practice. In order to prepare effective coaches, a Literacy Coaching Endorsement program has to address these skills. School boards and administrators may question the position because it is not seen as having a direct impact on students.

L'Allier, Elish-Piper and Bean (2010) synthesized their own studies as well as the related literature to develop seven guiding principles for literacy coaches:

1. Literacy coaching requires specific knowledge about reading.
2. The focus of coaching should be time spent working with teachers.
3. Collaborative relationships are necessary for coaching.
4. Coaching should prioritize activities that support reading achievement.
5. Coaching must be intentional yet opportunistic.
6. Coaches must be literacy leaders in their schools.
7. Coaching evolves over time.

L'Allier, Elish-Piper and Bean (2010) believe these research based guidelines will help address the multifaceted process of literacy coaching and help coaches be more successful in influencing reading instruction and student achievement.

Research Design

Participants

Eleven postgraduate students (literacy coaching candidates) were involved in this study. Participants in this study included: three (3) elementary classroom teachers, one (1) middle school classroom teacher, three (3) high school classroom teachers, two (2) elementary reading specialists, and two (2) high school reading specialists. The participants' years of experience in education ranged from five (5) years to sixteen (16) years.

Data Collection

Surveys were distributed to the literacy coaching candidates before and after the semester of the first course in the endorsement program (Appendix A) and all surveys were returned. The surveys were cross-sectional (Creswell, 2003) since the data was collected at one point in time and they were self-administered questionnaires. The survey focused on the following three research questions:

1. What motivates a licensed Reading Specialist to return to graduate school to obtain Literacy Coaching Endorsement?
2. What are the students' expectations of this program and of coaching? How were these expectations met?
3. What are the students' perceptions/future plans at the end of the semester and plans for the rest of the cohort program?

The literacy coaching candidates were also asked for specific examples related to each of the research questions.

Data Analysis

The research design of this study was grounded theory. The goal of grounded theory is to develop a theory and conceptual categories from systematic research (Glaser & Strauss, 1967). Grounded theory as defined by Strauss and Corbin (1990) is:

> inductively derived from the study of the phenomenon it represents. That is, discovered, developed, and provisionally verified through systematic data collection pertaining to that phenomenon. Therefore, data collection, analysis, and theory should stand in a reciprocal relationship with each other. One does not begin with the theory, then prove it. Rather, one begins with an area of study and what is relevant to the area is allowed to emerge. (p. 34)

Surveys were reviewed and analyzed by the researcher and coded according to the themes and patterns that emerged. Themes were analyzed through open coding, axial coding, and selective coding (Strauss & Corbin, 1990). Defining the themes of the study enabled the researcher to describe the study using rich narrative.

The theory evolved during the research process due to the relationships between data collection and analysis. During data collection and analysis, theoretical sampling was used to ensure the collected information was complete. If additional data needed to be collected, it was collected based on analysis of the data and the emerging themes. Themes were further refined and organized to add to the description of the research and to the emerging theory. The researcher developed themes after careful consideration of the survey instrument. The original themes (motivation, expectations, and perception) under consideration were analyzed. A second review

of the data revealed the additional, more specific themes and a final review of the data revealed no new themes had emerged, thus it was determined that data saturation had occurred

Limitations

Although this study was relatively small in size and may limit reliability from the findings, it could be replicated on a larger level. The participants were selected based on their willingness to participate in the study; therefore, this is considered a purposive sample (Berg, 2009) for which the researcher uses knowledge about a group to select subjects who represent the population.

Findings

Motivation

In order to determine the literacy coaching candidates' motivation for entering the program, they were asked questions related to how much they expected the course to change and/or improve their literacy instruction and how much they expected the course to increase their understanding of course content (this includes topics such as professional learning, adult learning and coaching cycles). When the literacy coaching candidates were surveyed about how much the course had changed and/or improved their literacy instruction, results from the pre and post surveys were identical. In the pre-survey, sixty-three percent of the candidates expected the course to change or improve their literacy instruction extremely or very much and the same number were equally satisfied at the end of the course. The candidates who were classroom teachers shared in comments that they felt more confident attempting different teaching strategies in their own classrooms. Those working as Reading Specialists felt they were becoming more successful at coaching as a Reading Specialist. Since many Reading Specialists

are asked to coach as part of their roles, this newfound confidence is important as the role expands and changes.

Continuing with the motivation theme, participants were asked about how much they expected the course to increase their understanding of course content. Several participants listed coaching toolkits they created during one of the class sessions as an exercise that helped them explore valuable strategies for future coaching positions. The participants felt their understanding of the body of research literature related to professional learning, adult learning, and the coaching cycle had improved, along with the desire to incorporate more coaching into their varied present positions. Many participants mentioned two specific projects that helped with their understanding of course content. One project was an open-ended inquiry project where candidates were expected to apply their own exploration of current literature to an action research project. Topics literacy coaching candidates chose for this inquiry project included research on professional learning with Lexile levels, coaching across generations, and co-teaching as coaching. The other project literacy coaching candidates listed as instrumental in understanding course content was a review conducted of the Common Core State Standards. This project helped the candidates better understand how to use data from standardized state testing to apply the standards in coaching situations.

Before the course began, the candidates' pre-survey responses showed motivating personal benefits related to starting a new career path, gaining a position as a Reading Specialist in the next three years, and learning more about adult learning. One candidate stated, "I hope this course offers a fusion of reading and general coaching. There are not literacy coaches in my school so I am not sure about practical applications." After the course the candidates felt they had become better teachers, especially as reflective practitioners. Being a reflective practitioner

can assist a new coach with making important decisions when starting a new career path and/or gaining a position as a Reading Specialist in the near future. The participants mentioned specific assignments they found to be helpful and explained they had become more sensitive to working as a coach, especially when given the opportunity to tailor the assignment to understanding the various backgrounds of teachers with whom they work. As one candidate stated, "I appreciate projects that allow a lot of choice with regard to presentation format and topic." Overall, most candidates agreed the first course had enabled them to network with each other to better appreciate the role of the coach and the teacher being coached, as evidenced in this statement, "I appreciate the opportunity to meet and get to know other reading professionals."

Overall, the surveys indicated praticipants were initially motivated to join the program in order to start new career path, gain a position as a Reading Specialist or Literacy Coach, and/or learn more about adult learning. When asked about improving their own literacy instruction, undertanding course content, and adding more coaching to their current practice and/or starting a new career path as a Reading Specialist or Literacy Coach in the near future, participants responded positively and identified these items as future motivators.

Expectations

On the survey, literacy coaching candidates were asked about expectations regarding convenience of the course, enhancement of coaching skills, and collaboration with both the instructor and peers. In terms of convenience, the candidates' expectations before the course (88%) were lower at the end of the course (75%). According to comments and discussion, the candidates expected more online classes. In this course, which was taught in a blended format, two of the fifteen sessions were offered online. In addition, the candidates would have appreciated more choice in assignments along with very specific guidelines. Along with that

finding, the candidates seemed to expect more of a workshop format rather than a full graduate course. Some were surprised by the workload in the course.

Candidates' expectations were met in terms of the course enhancing their understanding of coaching. Pre and post results from the survey showed 88% felt the course had enhanced their understanding of coaching extremely or very much. Candidates mentioned an in class assignment to create a coaching toolkit based on several readings and the body of research literature explored in the course as instrumental in enhancing understanding of coaching. The course also led several of the candidates to mention a new desire to coach along with a better understanding of the facets/roles of the literacy coach.

Collaboration with the professor and with peers was also explored. In terms of collaboration with the professor, candidates appreciated the professor's responsiveness to emails, along with time in class to assist/answer questions and/or listen to concerns. They also praised the professor's involvement in class discussions and knowledge about the topic. In terms of collaboration with peers, the group appreciated working in small groups/pairs when participating in weekly class discussions. Candidates also valued hearing other viewpoints from classmates.

Perceptions and Future Plans

At the onset of the course, 88% of the candidates planned to work as a Literacy Coach in a K-12 school in the future. After taking the course, this number had been reduced to 55%. This reduced number speaks to the practical application of the first course in the cohort and to the increased understanding of coaching responsibilities along with perceptions of what other opportunities are available in school districts. This is a question that should be posed again at the end of the cohort and compared to this original result. With the increased knowledge of the typical roles and responsibilities of the Literacy Coach, candidates clarified original perceptions

and were able to realize what additional options exist to be pursued. These options included enrolling in a doctoral program, working in higher education, publishing articles in journals, and taking on other leadership roles. One candidate stated the goal to "get my feet wet" with a department chair position first, while another expressed interest in becoming a consultant for the local intermediate unit. One candiate stated it best by stating, "...I'm not sure what the future holds..."

Discussion

Further analysis of the survey data showed the emergence of the following additional themes: (1) literacy coaching candidates improved their confidence as either classroom teachers or coaches/Reading Specialists as a result of the first course in the endorsement program; (2) literacy coaching candidates are open to what the future holds in terms of their career paths; (3) literacy coaching candidates became more reflective practitioners as a result of the endorsement program; (4) it is important to consider practical aspects of the endorsement program including assignments, workload, and collaboration with professor and peers.

Literacy coaching candidates improved their confidence as either classroom teachers or coaches/Reading Specialists as a result of the first course in the endorsement program. Numerous examples of this improved confidence were evident in the comments on the survey. One candidate mentioned the many different teaching strategies she was able to apply in the classroom while another stated the importance of a new understanding of the school district's goals and the literacy coach's responsibilities. "I feel more confident when my teachers approach me with a question or problem'" is a quote from one of the candidates that indicates the amount of confidence that was built throughout the semester.

Surveyed literacy coaching candidates identified the need to be open to what the future

holds in terms of their career paths. Some expressed interest in moving from the classroom into a Reading Specialist position, while others set a goal to include more coaching into current Reading Specialists positions. Others mentioned goals such as teaching in higher education, performing more research, moving into K-12 administration, and/or earning a doctoral degree.

Another benefit of the first course in the endorsement program was the development of the literacy coaching candidates' reflective skills. One candidates stated, "I feel I am a better teacher because I am reflecting on how I learn and trying to apply that to working with my students." Another candidate mentioned the importance of understating that teachers come from a "variety of backgrounds" and, therefore, need to be coached appropriately.

Last, it is important to consider practical aspects of the endorsement program including assignments, workload, and collaboration with professor and peers. The coaching candidates gave feedback about the need for very specific guidelines along with choice in some assignments. They also mentioned surprise at the workload; so it is important to communicate the nature of the course and the workload to future candidates.

Implications for Practice

This study leads to several important implications for professors and literacy coaching candidates. Professors developing an endorsement program should continue to maintain an open and collaborative environment that encourages communication with the literacy coaching candidates. Workload is also a factor; so professors should consider this when planning the program, creating assignments, and communicating with potential candidates. Professors should also strike a balance between online and on campus meetings. While the candidates appreciated occasional online meetings, they greatly valued the weekly in person sessions. Literacy coaching candidates should consider these factors as well when considering a program.

Recommendations for Further Research

Further research on literacy coaching endorsement programs is needed so that correlations between effective coaching endorsement programs and successful candidates can be explored. One way to supplement this research would be to study a larger and more diverse sample or to conduct a longitudinal study on the career paths of literacy coaching candidates. Surveys, interviews, and observations with other constituents such as classroom teachers, administrators, supervisors, and students would also add to this body of work.

References

Bean, R., & Isler, W. (2008). The school board wants to know: Why literacy coaching? *Literacy Coaching Clearinghouse.*

Bean, R.M., Kern, D., Goatley, V., Ortlieb, E., Shettel, J., Calo, K., Marinak, B., Sturtevant, E., Elish-Piper, L., L'Allier, S., Cox, M. A., Frost, S., Mason, P., Quatroche, D., Cassidy, J. (2015). Specialized literacy professionals as literacy leaders: Results of a national survey. *Literacy Research and Instruction*, *54*(2), 83–114.

Berg, B. L. (2009). *Qualitative research methods for the social sciences*. Boston, MA: Allyn & Bacon.

Creswell, J. W. (2003). *Research design: Qualitative, quantitative, and mixed method approaches*. Thousand Oaks, CA: Sage Publications.

Frost, S., Bean, R., & Literacy Coaching Clearinghouse. (2006). Qualifications for Literacy Coaches: Achieving the Gold Standard. *Literacy Coaching Clearinghouse*.

Glaser, B.G. & Strauss, A.L. (1967). *The discovery of grounded theory: Strategies for qualitative research*. New York: Aldine De Gruyter.

International Literacy Association. (2015). *The multiple roles of school-based specialized literacy professionals (Research brief).* Retrieved from: http://www.reading.org

International Reading Association. (2010). *Standards for Reading Professionals*. Retrieved from: http://www.reading.org

L'Allier, S., Elish-Piper, L., & Bean, R. M. (2010). What matters for elementary literacy coaching? Guiding principles for instructional improvement and student achievement. *Reading Teacher*, *63*(7), 544-554. doi:10.1598/RT.63.7.2

Strauss, A. L., & Corbin, J. M. (1990). *Basics of qualitative research: Grounded theory procedures and techniques*. Newbury Park, CA: Sage.

Appendix A

Student Survey

Please answer the following questions based on this scale: [Extremely/Very/Somewhat /Not at all] or add comments where requested.

1. How influential do you expect the course to be in helping you change or improve your own literacy instruction?
2. To what degree do you expect it to be convenient to work with the program?
3. To what degree do you expect the program to help enhance your understanding of the course content?
4. To what degree do you expect the program to help provide opportunities for collaboration between you and the instructor/professor?
5. To what degree do you expect the program provide opportunities for collaboration between you and classmates/peers?
6. Please cite at least one example of how you expect the program to help you change or improve your literacy instruction.
7. Please cite at least one example of how you expect the program to offer opportunities for collaboration among classmates/peers.
8. What personal benefit(s) do you expect to receive from the program.

Evaluation of Student-Athletes' Use of Alcohol and Other Drugs at a State Supported Regional University

Julie Lombardi and Mandi Dupain

Abstract

The misuse of alcohol and other drugs is a health concern for National Collegiate Athletic Association (NCAA) level student-athletes. NCAA Division II level student-athletes from a State-Supported Regional University (SSRU) were part of a CHOICES Grant program which aided the athletic department as it partnered with other campus departments in the development and implementation of alcohol and drug education projects. The American College Health Association National College Health Assessment IIb Survey (ACHA-NCHA IIB) was given to the SSRU's student-athletes. Two areas of health concern (high-risk drinking, nonmedical use of prescription drugs) were identified where improvements are necessary. The results supported the SSRU's goals as it continues implementing education and prevention programs based on collaboration among student-athletes, coaches, athletics staff, and prevention specialists.

Keywords: Student-athletes, drug and alcohol misuse.

Julie A. Lombardi, P.E.D. is Associate Professor of Wellness and Sports Science at Millersville University of Pennsylvania. She can be reached at jlombardi@millersville.edu.

Mandi Dupain, PhD. is Assistant Professor of Wellness and Sports Science at Millersville University of Pennsylvania. She can be reached at mdupain@millersville.edu.

The use and misuse of alcohol and other drugs by student-athletes at institutions of higher learning is a well-documented problem warranting best practices and model programs to be outlined by the U.S. Department of Education Office of Safe and Drug-Free Schools (2008). Alcohol is listed as the most widely used drug (Green, Uryasz, Petr, & Bray, 2001), followed by marijuana (Greene, et al., 2001). Alcohol and marijuana use is reported to be highest among Division 3 student-athletes (Green, et al., 2001) when compared to Division 1 and Division 2 athletes.

The purpose of this study was to analyze the percent of targets achieved for five (5) student objectives from two (2) of the eleven (11) Topic Areas of Healthy Campus 2020 (American College Health Association, 2016) (see Table 1). Healthy Campus 2020 is a framework to support campuses in improving the health of their students, staff and faculty (American College Health Association, 2016). The student objectives chosen for critical review were based on Healthy Campus 2020 topics under the student objective "Substance Abuse" relevant to Domain 3: Physical Conditioning: Standard 14 of the National Association for Sport and Physical Education Coaching Standards: Be an advocate for drug-free sport participation and provide accurate information about drugs and supplements (NASPE, 2006). The topic of particular focus was "Substance Abuse" which specifically speaks to the Level 1 NASPE Coaching Standard for Domain 3, Standard 14: Make clear to all athletes the established, negative consequences of using a banned substance, alcohol, tobacco, and other drugs as they relate to team rules, program policies, the law, and overall health (NASPE, 2006). The assessment of these behaviors will be used to plan and enhance educational programming sessions and interventions for this specific population to increase healthy behaviors and choices and reduce risky behaviors that might hinder educational and athletic progress.

The State Supported Regional University (SSRU) is a public institution with an undergraduate enrollment of approximately 7,000 and a student body that is approximately 75% white, 9% Black or African-American, and 8% Hispanic/Latino (see Table 2). Since 2013, a stronger effort was made by the SSRU to educate student-athletes about the risks involved with the misuse of alcohol and other drug issues. In this effort, the SSRU applied for and was awarded funding for NCAA CHOICES; a grant program for NCAA member institutions to integrate athletics departments into campus wide-efforts to reduce alcohol abuse.

Literature Review

The proportion of students who report using marijuana (pot, weed, hashish, hash oil) is the first student objective area our study compared under the Substance Abuse topic of Healthy Campus 2020. For student-athletes of both genders, being white, being past-year cigarette smokers, having higher sensation-seeking scores, and having exaggerated perceptions of student use norms were all associated with past-year marijuana use (Buckman, Yusko, Farris, White, & Pandina, 2011). Results of Buckman et al.'s (2011) preliminary study suggests that student-athletes appear to be particularly motivated to use marijuana because of its enhancement or pleasurable properties.

The proportion of students who reported engaging in high risk drinking of alcoholic beverages within the last two weeks is the second student objective area our study compared in the Substance Abuse topic area of Healthy Campus 2020. Wechsler, Davenport, Dowdall, Grossman, and Zanakos (1997) found that students involved in college athletics engaged in binge drinking (heavy, episodic alcohol consumption) more often than students not involved in athletics, but were less likely to be cigarette smokers or marijuana users. The strongest predictors of binge drinking among students involved in athletics were residence in a fraternity or a

sorority, a party lifestyle, engagement in other risky behaviors, and previous binging in high school (Wechsler et al., 1997). Other findings indicate that athletes are more likely to report binge drinking, in part, because they view alcohol use as being more normative (Ford, 2007). With the increased use and acceptance of energy drinks, Woolsey, Waigandt, and Beck (2010) found student-athletes who combined energy drinks and alcohol consumed significantly more alcohol and had riskier drinking habits than student-athletes who used alcohol only.

The National Collegiate Athletic Association (NCAA) has indicated progress in the alcohol abuse arena. In 2013, the NCAA surveyed roughly 21,000 student-athletes regarding their substance use habits as part of an ongoing assessment conducted every four years (Rexroat, 2014). In 2009, 63% of male student-athletes reported drinking more than five drinks in a sitting. Interestingly, by 2013 that male student-athlete statistic had dropped to 44%. Female student-athletes reported a smaller, but still significant, decline in excessive drinking, with 33% reporting drinking four or more drinks, down from 41%. While excessive drinking is down, about 80% of student-athletes reported using alcohol within the past year, which is on par with the rate among the general collegiate population (Rexroat, 2014). Student-athletes are shown to be at greater risk for abusing alcohol and they experience more frequent negative consequences (Brenner & Swanik, 2007).

Drinking is not harmless and is among the most serious public health problems of American college students (Hingson, Zha & Weitzman 2009). Student-athletes with the heaviest drinking patterns are 6.15 times more likely to experience unintentional alcohol-related injuries, including those that may be season- or career-ending (Brenner, Metz & Entriken, 2014). Student-athletes' heavy drinking can result in a "hangover effect" which may reduce athletic performance by 11.4% (O'Brien & Lyons, 2000). Male student-athletes also reported drinking significantly

more drinks on their heaviest day in the last year (Yusko, Buckman, White & Pandina, 2008) while female student-athletes reported consuming alcohol significantly less frequently over the past month (Yusko, et al., 2008).

The proportion of students who report nonmedical use of prescription drugs within the last 12 months is the third student objective area our study compared in the Substance Abuse topic area of Healthy Campus 2020. Ford (2008) analyzed data from 2001 and the results indicate that student-athletes are less likely to report nonmedical prescription drug use. There is more interest in performance enhancing drugs; athletes use ephedrine and amphetamines to boost metabolism and endurance (Tokish, Kocher & Hawkins, 2004), nutritional supplements and weight loss products to control weight and improve health (Froiland, Koszewski, Hingst & Kopecky, 2004), and prescription painkillers (used with or without a valid prescription) to mask injury (Tricker, 2000). The use of nutritional supplements is common (Froiland, et al., 2004) and the use of painkillers is evident in a sizeable subset of student-athletes (Froiland, 2004). Velez, Quyen, Austic, Boyd, and McCabe (2015) found indications that there is an association between previous involvement in interscholastic sports and prescription opioid use and misuse. Male student-athletes were significantly less likely to report cigarette, smokeless tobacco, marijuana, cocaine or crack, hallucinogens, methamphetamines, and prescription drug (without prescription) use during their athletic season compared with off-season use (Yusko, 2008); and female student-athletes were significantly less likely to report use of cocaine or crack, hallucinogens, prescription drugs without a prescription, and weight-loss products in-season versus offseason (Yusko, 2008).

The proportion of students who report driving after consuming any alcohol is the fourth student objective area our study compared in the Substance Abuse topic area of Healthy Campus

2020. Despite widespread prevention efforts, approximately 3.4 million (30%) college students report driving after drinking alcohol (Hingson et al., 2009). College students are more likely to drive after drinking than their same-aged peers who do not attend college (Paschall, 2003). Students who reported consuming alcohol mixed with energy drinks were more than twice as likely to report riding with an intoxicated driver (O'Brien, McCoy, Rhodes, Wagoner, & Wolfson, 2008). O'Brien, et. al's (2008) results suggest that the association of energy drink ingestion with alcohol on driving a car under the influence was heightened at lower levels of alcohol consumption. One piece of positive data indicates that during a study by Teeters, Borsari, Martens, and Murphy, (2015), counselor-administered brief motivational interventions that include descriptive normative feedback were associated with significant reductions in alcohol-impaired driving compared with controls.

The proportion of students who report receiving information on alcohol and other drug use from their institution is the fifth student objective our study compared. This student objective resides in the Health Communication topic area of Healthy Campus 2020. In 2010, The Office of Safe and Drug-Free Schools at the U.S. Department of Education published a document summarizing the fundamental parts of effective campus-based alcohol and other drug abuse prevention practices (2010). This document highlights communication as the core of prevention efforts: formal social norms campaigns, community/campus meetings, printed and electronic newsletters, posters, flyers, calendars, web-sites, videos, and curriculum infusion (U.S. Department of Education, 2010). Results from a study by Hoffman, Pinkleton, Austin, and Reyes-Velazquez (2014) suggest that colleges should consider social, cultural, and cognitive factors when organizing and planning alcohol education programming.

The literature indicates that NCAA level student-athletes report misusing alcohol and other drugs which emphasizes the necessity for more intentional efforts for alcohol and other drug education and prevention programming. In an effort to be more intentional in their prevention and education efforts, the SSRU participated in the American College Health Association's National Collegiate Health Assessment IIb (ACHA-NCHA, 2015).

Method

During the spring of 2016, one hundred and eighty-nine (189) student-athletes from the National Collegiate Athletic Association (NCAA) Division II level SSRU program filled out the American College Health Association-National College Health Assessment (ACHA-NCHA) IIb online survey. The student-athlete population was either in the 18 to 20-year-old age range (67%) or in the 21 to 24-year-old age range (33%). Females identified as 57.1% of the surveyed student-athlete population which is very similar to the total SSRU female population of 55.7%. Males identified as 42.9% of the surveyed student-athlete population which is also similar to the total SSRU male population of 44.3 % (see Table 2). The surveyed student-athlete population was unduplicated as the survey was administered by an e-mail invitation which was sent to all undergraduate email addresses of currently registered undergraduate students at the SSRU. The email announcement included a link to the ACHA-NCHA IIb survey. Multi-sport student-athletes would only be sent one link to the survey. All student-athletes at the SSRU were part of the NCAA CHOICES grant program integrating the athletics department into campus wide-efforts to reduce alcohol abuse.

Students consented and voluntarily participated in the survey which they had the right to refuse at any time. The incentive given to complete the survey included five dollars on their university account for the first 50 students and their emails were entered into a drawing for

electronics. The confidential survey required about 30 to 40 minutes to complete. Students' email addresses or names were not attached to their response.

Results

Healthy Campus 2020 Topic: Substance Abuse

Student-Athlete objective: Reduce the proportion of students who report using marijuana (pot, weed, hashish, hash oil) within the last 30 days. The Healthy Campus 2020 target is set at 15.30% and the SSRU's student-athletes' results were at 12.10%. This is a 20.9% difference and indicates that the SSRU is already below the healthy Campus 2020 target.

Student-Athlete objective: Reduce the proportion of students who report engaging in high-risk drinking of alcoholic beverages within the last two weeks. The Healthy Campus 2020 target is set at 31.60% and the SSRU's student-athletes' results were 48.06%. This is a 53.8% difference and indicates that the SSRU is above the Healthy Campus 2020 goal.

Student-Athlete objective: Reduce the proportion of students who report nonmedical use of prescription drugs within the last 12 months. The Healthy Campus 2020 target is set at 13.8% and the SSRU's student-athletes' results are at 17.9%. This is a 29.7% difference and indicates that the SSRU is above the Healthy Campus 2020 target.

Student-Athlete objective: Reduce the proportion of students who report driving after consuming any alcohol within the last 30 days. The Healthy Campus 2020 target is set at 16.1% and the SSRU's student-athletes' results are at 8.5%. This is a 47.2% difference and indicates that the SSRU is already below the Healthy Campus 2020 target.

Healthy Campus 2020 Topic: Health Communication

Student-Athlete objective: Increase the proportion of students who report receiving information on alcohol and other drug use from their institution. The Healthy Campus 2020

target is set at 71.3% and the SSRU's student-athletes results are at 95.8%. This is a 34.4% difference and indicates that the SSRU is already above the Healthy Campus 2020 target.

Limitations

The limitations for this descriptive study should be noted. The number of student-athlete respondents (189 student-athletes) was small. Second, the study was limited by self-reporting truthfulness of the participants. Third, the sample was limited to undergraduate student-athletes at one rural, Division II, SSRU, and therefore, the results should not be generalized to undergraduate student-athletes in other regions of the United States.

Discussion

Since 2013, a stronger effort was made by the SSRU to educate student-athletes about the risks involved with the misuse of alcohol and other drug issues. In this effort, the SSRU applied for and was awarded funding for NCAA CHOICES; a grant program for NCAA member institutions to integrate athletics departments into campus wide-efforts to reduce alcohol abuse. Since receiving the grant, the athletic department has partnered with other campus departments in the development and implementation of effective alcohol and drug education projects. The prevention programs for student-athletes have focused on the social and environmental influences that are exclusive to college athletes. The CHOICES program goals include:

- Increasing peer to peer education among student athletes and the campus community,
- Challenging the norm that all student athletes drink in excessive and dangerous ways,
- Increasing night programming offer to students,

- Raising self-awareness about personal alcohol risk among high risk student groups.

The results of this survey demonstrate continued efforts are necessary to affect alcohol and other drug education and prevention efforts on behalf of the student-athletes. To align the student health objectives with the Healthy Campus 2020 targets for the student-athletes, the SSRU has identified the following areas which need additional efforts: high-risk drinking and the nonmedical use of prescription drugs.

Interventions aimed explicitly at collegiate student-athletes have been shown to be successful at changing perceptions of drinking norms on campus, but have not been as successful at reducing drinking behavior among student-athletes (Thombs & Hamilton, 2002). Results by Taylor, Ward, and Hardin (2017) suggest that it may not be the sport structure (Team vs. Individual) or the specific sport team, but the culture created by the student-athletes and the coaches that effects student-athletes' motivations for alcohol consumption. A recent study by Fetherman and Bachman (2016) researching Division III student-athletes suggests that teammates do influence health behaviors such as alcohol consumption. Research has also shown that Athletic Departments' alcohol policies and prevention programming for first-year student-athletes should address the potential influence of different types of friends on alcohol use (Massengale, Ma, Rulison, Milroy, & Wyrick, 2017).

The development and utilization of effective prevention and early intervention programs should remain a priority for universities emphasizing protective factors and risk reducing factors. The SSRU is utilizing data from this study to design and implement programs that employ collaboration among student-athletes, their respective coaches, the athletics staff, and prevention specialists.

Table 1

Topic Areas Related to Healthy Campus 2020

Topic Area: Substance Abuse	Data Source	Baseline 2016	Target 2020	% Difference
Reduce the proportion of students who report using marijuana (pot, weed, hashish, hash oil) within the last 30 days.	American College Health Association – National College Health Assessment II (ACHA-NCHA II), Question 8A6	12.10%	15.30%	-0.20
Reduce the proportion of students who report engaging in high-risk drinking of alcoholic beverages within the last two weeks.	American College Health Association-National College Health Assessment II (ACHA-NCHA II), Question 13	48.60%	31.60%	0.53
Reduce the proportion of students who report nonmedical use of prescription drugs within the last 12 months.	American College Health Association-National College Health Assessment II (ACHA-NCHA II), Question 18A-E	17.90%	13.80%	0.29
Reduce the proportion of students who report driving after consuming any alcohol within the last 30 days.	American College Health Association-National College Health Assessment II (ACHA-NCHA II), Question 14A	8.50%	16.10%	-0.47
Increase the proportion of students who report receiving information on alcohol and other drug use from their institution.	American College Health Association-National College Health Assessment II (ACHA-NCHA II), Question 2A1	95.80%	71.30%	0.34

Table 2

Demographics of Sample Population (N= 189)

Student-Athlete Demographics	n	%
Age		
18-20	127	67
21-24	62	33
25-29	0	0
30+	0	0
Sex		
Females	108	57.1
Males	81	42.9
Full –time student status		
Yes	185	97.9
No	4	2.1
Ethnicity		
White	148	78.3
Black or African American	25	13.2
Hispanic or Latino	7	3.7
Asian or Pacific Islander	0	0
American Indian or Alaskan Native		
Or Native Hawaiian:	3	1.6
Biracial or Multiracial	4	2.1
Other	2	1.1
Relationships status		
Single	175	92.6
Married/Partnered	6	3.2
Separated/Divorced/Other:	8	4.2

References

American College Health Association. (2015). *American College Health Association National College Health Assessment IIb (ACHA-NCHA IIb).* Retrieved from http://www.acha-ncha.org/

American College Health Association. (Fall, 2011). American College Health Association-National College Health Assessment II: Reference Group Executive Summary Fall 2011. Hanover.

American College Health Association. (2016). *Healthy Campus 2020.* Retrieved from: https://www.acha.org/HealthyCampus/HealthyCampus/Student_Objectives.aspx

Brenner, J.W., & Swanik, K.A. (2007). High-risk drinking characteristics in collegiate athletics. *Journal of American College Health 65*(3), 267-672.

Brenner J.W., Metz S.M., & Entriken J. (2014). Alcohol-related unintentional injury among collegiate athletes. *Athletic Training and Sports Health Care 6*, 228-236.

Buckman, J.F., Yusko, D.A., Farris, S.G., White, H.R., & Pandina, R.J. (2011). Risk of marijuana use in male and female college student athletes and non-athletes. *Journal of Studies on Alcohol and Drugs 72*(4), 586-591.

Calfee, R., & Fadale, P. (2006). Popular ergogenic drugs and supplements in young athletes. *Pediatric. 117*, 577–589.

Fetherman, D. & Bachman, J. (2016). Social ecological examination of alcohol use among Division III athletes. *American Journal of Health Studies 31*(2), 82-92.

Ford, J.A. (2007). Alcohol use among college students: A comparison of athletes and nonathletes (2007). *Substance Use and Misuse 42*(9), 1367-1377.

Ford, J.A., (2008) Nonmedical prescription drug use among college students: A comparison between athletes and nonathletes. *Journal of American College Health 57*(2), 211-220.

Froiland, K., Koszewski, W., Hingst, J., & Kopecky, L. (2004). Nutritional supplement use among college athletes and their sources of information. *International Journal of Sport Nutrition and Exercise Metabolism 14*, 104–120.

Green, G.A., Uryasz, F.D., Petr, T.A., & Bray, C.D. (2001) NCAA study of substance use and abuse habits of college student-athletes. *Clinical Journal of Sport Nutrition 11*, 51-56.

Hingson, R.W., Zha, W., & Weitzman, E.R. (2009). Magnitude of and trends in alcohol-related mortality and morbidity among U.S. college students ages 18-24, 1998-2005. *Journal of Studies on Alcohol and Drugs, 16*, 12-20.

Hoffman, E.W., Pinkleton, B.E., Austin, E.W., & Reyes-Velazquez, W. (2014). Exploring college students' use of general and alcohol-related social media and their associations with alcohol-related behaviors, *Journal of American College Health 62*(5), 328-335.

Massengale, K.E., Ma, A., Rulison, K.L., Milroy, J.J., Wyrick, D.L. (2017) Perceived norms and alcohol use among first-year college student-athletes' different types of friends. *Journal of American College Health 65*(1), 32-40.

National Association of Sport & Physical Education (NASPE). (2006). *National Standards for Sports Coaches (*2nd ed.). Champaign, IL: Human Kinetics.

O'Brien, C.P. & Lyons, F. (2000) Alcohol and the athlete. *Sports Medicine 29*(5), 295-300.

O'Brien, M.C., McCoy, T.P., Rhodes, S.D., Wagoner, A., & Wolfson, M. (2008). Caffeinated cocktails: Energy drink consumption, high-risk drinking, and alcohol-related consequences among college students. *Academic Emergency Medicine 15*(5), 452-460.

Paschall, M.J. (2003). College attendance and risk-related driving behavior in a national sample of young adults. *Journal of Studies on Alcohol and Drugs 64*, 43–49.

Rexroat, M. (2014). *NCAA National Study of Substance Use Habits of College Student-Athletes*. [Final Report Power Point Slides]. Retrieved from http://www.ncaa.org/sites/default/files/Substance%20Use%20Final%20Report_FINAL.pdf

Taylor, E.A., Ward, R.M., & Hardin, R. (2017). Examination of Drinking Habits and Motives of Collegiate Student-Athletes. *Journal of Applied Sport Management 9*(1), 56-82.

Teeters, J.B., Borsari, B., Martens, M.P., & Murphy, J.G. (2015). Brief motivational interventions are associated with reductions in alcohol-impaired driving among college drinkers, *Journal of Studies on Alcohol and Drugs 76*(5), 700-709.

Thombs, D.L. & Hamilton, M.J. (2002). Effect of a social norm feedback campaign on the drinking norms and behavior of Division I student-athletes. *Journal of Drug Education 32*(3), 227-244.

Tokish, J.M., Kocher, M.S., & Hawkins, R.J. (2004). Ergogenic aids: A review of basic science, performance, side effects, and status in sports. *American Journal of Sports Medicine 32*, 1543–1553.

Tricker, R. (2000) Painkilling drugs in collegiate athletics: Knowledge, attitudes, and use of student athletes. *Journal of Drug Education 30*, 313–324.

U.S. Department of Education, Office of Safe and Drug-Free Schools. (2008). *Alcohol and Other Drug Prevention on College Campuses: Model Programs*. Retrieved from http://www.alcoholeducationproject.org/DOEModelPrograms2008.pdf

U.S. Department of Education, Office of Safe and Drug-Free Schools. (2010). *Higher Education Center for Alcohol, Drug Abuse, and Violence Prevention, Field Experiences in Effective Prevention: The U.S. Department of Education's Alcohol and Other Drug Prevention Models on College Campuses Grants*. Retrieved from http://files.eric.ed.gov/fulltext/ED514324.pdf

Velez, P., Quyen, E-N., Austic, E., Boyd, C. & McCabe, S. (2015). Opioid use among interscholastic sports participants: An exploratory study from a sample of college students, *Research Quarterly for Exercise and Sport 86*, 205-211.

Wechsler, H., Davenport, A.E., Dowdall, G. W., Grossman, S. & Zanakos, S. (1997). Binge drinking, tobacco, and illicit drug use and involvement in college athletics: A survey of students at 140 American colleges. *Journal of American College Health 45*(5), 195-200.

Woolsey, C., Waigandt, A., & Beck, N.C. (2010). Athletes and energy drinks: Reported risk-taking and consequences from the combined use of alcohol and energy drinks. *Journal of Applied Sport Psychology 22*(1), 65-71.

Yusko, D.A., Buckman, J.F., White, H.R., & Pandina, R.J. (2008). Alcohol, tobacco, illicit drugs, and performance enhancers: A comparison of use by college student athletes and nonathletes. *Journal of American College Health 57*(3), 281-290.

Incorporating Multiple Intelligences in the English Classroom

Evangelin Arulselvi

Abstract

The purpose of this essay is to discuss Multiple Intelligences described and defined by Howard Gardner and other authors who followed and revised the theory in terms of language teaching. In the student-centered approach, individual students' needs, interests, and strengths make sense and every student has a different intellectual profile. Using a common curriculum for these students with different intellectual abilities is a significant challenge for teachers. Incorporating Multiple Intelligences in the classroom fills the needs and expectations. Multiple Intelligences have significant implications for educational performance and they change students' perceptions of intelligence and academic achievement in the learning world. This essay focuses to incorporating Multiple Intelligences in the English classroom and includes grouping and listing possible activities and tasks which are appropriate for language learners with different sets of abilities or intelligences.

Keywords: Multiple Intelligences, individualized education, different intellectual abilities, language teaching, pluralistic view, creativity

Dr. Evangelin Arulselvi is Associate Professor in the English Language Department, College of English Language, Riyadh Region, Kingdom of Saudi Arabia. She can be reached at eva.arul@gmail.com.

Today's ideas about education focus on individualized education and learner autonomy. Students are supposed to be responsible for their own learning and should be made aware of their strengths and weaknesses (Ibmian & Hadban, 2013). Teachers have always known that their students have different strengths. In the language teaching field, some of the differences among students have been attributed to students' having different learning or cognitive styles. Individual cognitive and affective factors like aptitude, introversion, extroversion, motivation, empathy, anxiety, self-confidence, self-regulation, inhibition and many others have an important influence on the speed and ease of second language learning. People have varying degrees of each of these attributes and, consequently, some are more successful language learners while others are not (Haley, 2004).

Intelligence has traditionally been measured by using Intelligent Quotient tests but those tests measure only one type of intelligence. Hatch (1974) distinguished between learners who are data gatherers and those who are rule-formers. Data gatherers are fluent but inaccurate; rule formers are more accurate but often speak haltingly.

Dr. Howard Gardner, Professor of Education at Harvard University, asserts that every individual has eight intelligences and they all work together in a unique way. The Theory of Multiple Intelligence was developed by him in the year 1983 and was first published in the book *Frames of Mind: The Theory of Multiple Intelligences.* In this book, he points out that human talents and intelligences are much more complex than the previous IQ tests had shown. It is no longer a question of how intelligent people are; it is how their intelligence works. He presented a new vision on intelligence and the theory is a pluralistic view of mind which recognizes different styles of cognition and cognitive styles.

Gardner (1983) theorized that individuals have at least eight distinctive intelligences that can be developed over a life time. The eight are:

1. Logical/Mathematical – The ability to use numbers effectively to see abstract patterns and to reason well.
2. Visual/Spatial – The ability to orient oneself in the environment to create mental images and sensitivity to shape, size and color.
3. Body/Kinesthetic – The ability to use one's body to express oneself and to solve problems.
4. Musical/Rhythmic – The ability to recognize tonal patterns and sensitivity to rhythm, pitch and melody.
5. Interpersonal – The ability to understand another person's moods, feelings, motivations and intentions.
6. Intrapersonal – The ability to understand oneself and to practice self-discipline.
7. Verbal/Linguistic – The ability to use language effectively and creatively.
8. Naturalist – The ability to relate to nature and to classify what is observed.

Christison (1996, 2005) and Armstrong (1995) provide examples of activities that fit each type of intelligence:

1. Logical/Mathematical – puzzles and games, logical, sequential, presentations, classifications and categorizations.
2. Visual/Spatial – charts and grids, videos, drawing.
3. Body/Kinesthetic – hands on activities, field trips, athletics, pantomime.
4. Musical/Rhythmic – singing, playing music, jazz chants.
5. Interpersonal – pairwork, project work, group problem solving.

6. Intrapersonal – self-evaluation, journal keeping, options for homework.
7. Verbal/Linguistic – note-taking, writing, story-telling, debates.
8. Naturalist – collecting objects from the natural world, learning their names and about them.

Based on Gardner's theory, Chapman and Freeman (1996) draw three implications of intelligence. First, intelligences can be taught or enhanced through teaching. Second, intelligences can change throughout life. Third, the existence of different intelligences that different learners possess results in different learning styles and different needs. According to Armstrong (2008), whether an intelligence develops depends upon three main factors: (1) Biological endowment – including hereditary or genetic factors and insults or injuries to the brain, before, during and after the birth; (2) Personal life history – including experiences with parents, teachers, peers, friends and others who awaken intelligences, keep them from developing, or actively repress them; (3) Cultural and Historical background – including the time and place where one was born and raised and the nature and state of cultural and historical developments in different domains.

More recently, Gardner (2009) has developed a related theory, focused on cognitive abilities, that individuals need to develop in order to be successful in a changing world. Gardner proposes *Five Minds*, ways of thinking and acting in the world, which students need to develop. Of the five minds, three focus on intellectual development and two on character development. Gardner feels that these five minds are particularly at a premium in the world of today and will be even more so in the future. They span both the cognitive spectrum and human enterprise and are therefore comprehensive, global and can be cultivated. Education is the key to developing these five minds for the future, and while traditional forms of education will bear the burden of

training young minds, parents, peers and the media also play an as important role in influencing and developing minds of tomorrow. The five minds are described as follows:

1. The Disciplined Mind

It is the first of the intellectual minds in which students master a traditional body of information. The Disciplined Mind refers to the ability to think in ways associated with major scholarly disciplines such as history, math and science, and major professions like law, medicine, management, finance as well as the ability to apply oneself diligently, improving steadily and continuing beyond formal education.

Disciplines represent a radically different phenomenon. A discipline constitutes a distinctive way of thinking about the world. Distinctive ways of thinking characterize the professions and are modeled by skilled practitioners. Study should help students to acquire the habit of these discipline specific ways of thinking. Students need to understand information not as an end in itself or a stepping stone to more advanced information, but rather as a means to better-informed practice. Gardner believes that it is essential for individuals in the future to be able to think in ways that characterize the major disciplines. At the high school level, all students should be introduced and master the ways of thinking in science, mathematics, history and at least one art form. These few main disciplines are gateways to other sciences, the social sciences and other forms of art. Without acquiring these thinking patterns, students will be completely dependent on others to formulate views about the world.

2. The Synthesizing Mind

It is the ability to integrate ideas from different disciplines or spheres into a coherent whole and to communicate that integration to others. It focuses to bring together, organize, understand and articulate information from various disciplines in a unified and coherent whole.

The Synthesizing Mind takes information from disparate sources, understands and evaluates that information objectively, and puts it together in ways that make sense to the synthesizer and also to other persons.

3. The Creating Mind

The third is the creating mind whereby students are encouraged to come up with new ideas, original solutions to problems and creative questions. It puts forth new ideas, poses unfamiliar questions, conjures up fresh ways of thinking, and arrives at unexpected answers. This could include creative writing, or original historical or political analysis. Virtually all innovation can be communicated almost instantly the world over, available to be built on by another with the requisite disciplinary skills, understanding and motivation. Creativity is seen as the trait of certain individuals who could use this talent across various performance domains. However, in recent years this viewpoint has changed as we recognize a variety of relatively independent creative endeavors that do not stretch over to other areas.

4. The Respectful Mind

The Respectful Mind is reflected by an awareness of appreciation for, and openness to the differences and individuality of others. This would naturally include fostering tolerance for people from other cultural backgrounds, religions, races and identities within and beyond the classroom. The respectful mind responds sympathetically and constructively to differences among individuals and among groups, seeking to understand and work with those who are different, extending beyond mere tolerance and political correctness.

Humans exhibit a deep-seated tendency to create groups, to provide distinctive marks for these collectives and to adopt clearly positive or negative attitudes towards neighboring groups. We are inclined to delineate groups, to identify with and value members of our own group and to

adopt caution when dealing with other groups. However, even if biological bases can be found for division between groups, every generation must attempt to deal with these stereotypes and prejudices and to overcome them for peace and unity. Truly respectful individuals offer the benefit of the doubt to all human beings. They avoid thinking in group terms and remain open to the possibility that their past judgment of others may have been wrong. They are alert for a change in behavior that will reinstate a feeling of respect towards others.

5. The Ethical Mind

The Ethical Mind encourages students to cultivate a sense of responsibility for themselves and for the wellbeing of others. The Ethical Mind is able to merge roles at work and as a citizen and act consistently with those conceptualizations, striving towards good work and good citizenship. The ethical mind ponders the nature of one's work and the needs and deserves of the society in which one lives. This mind conceptualizes how workers can serve purposes beyond self-interest and how citizens can work unselfishly to improve the lot of all. The ethical mind then acts on the basis of these analyses.

We all want to live in a world characterized by good work that is excellent, ethical and engaging. An ethical orientation begins at home where children observe their parents at their work and play and in civic responsibilities. In contemporary society, peers and colleagues also assume importance from an early age, and the quality of one’s peers proves especially critical during adolescence in the development of ethical training.

Gardner concludes that each person may have strengths in one or more area and should endeavor to develop a balance of all five minds. Regarding the development of these five minds in the lives of a young children, parents and teachers should focus first on instilling a respectful mind, then a disciplined mind, followed by a synthesizing mind and finally, in secondary school,

an emphasis on ethics. Creativity goes hand in glove with disciplinary thinking. In the absence of relevant disciplines, it is not possible to be genuinely creative and in the absence of creativity, disciplines can be used only to go over the status quo. These five minds are likely to be crucial in a world marked by the hegemony of science and technology, global transmission of information, handling of routine tasks by computers and increasing contact between diverse populations. Those who succeed in cultivating the pentad of minds are most likely to thrive in the world.

Multiple Intelligences and Language Teaching

Armstrong (1995) believes that before we apply any model of learning in the classroom, we should apply it to ourselves as educators. Therefore, the first step in using Multiple Intelligence Theory in the classroom is to first determine our own Multiple Intelligence profile. Armstrong (2000) asserts that language teachers today have to be aware that students have different strengths, learning styles and even learning potentials but with the Multiple Intelligence theory we can teach students effectively in different ways. It is a good idea to give the students a Multiple Intelligence test to see which intelligences are outstanding for each student. Then the teacher can create a learning environment that is suitable for each student. By observing the students and keeping track of how they react to different activities. It is possible to improve teaching by appealing to the students' strengths. As long as teachers use a range of different activities according to the intelligences, there will always be a time during the day or week when students have their highly developed intelligences actively involved in learning.

As a tool to help students develop a better understanding and appreciation of their own strengths and learning preferences, Christison and Kennedy (1999) created some inventories or surveys which might help the students to define their predominant type of intelligence.

According to Christison, different language tasks and activities can be created in order to cater for the needs of multiple intelligences and the needs of the language learners. According to Christison & Kennedy (1999), raising students' awareness of their strengths and weaknesses can make them more responsive to a variety of learning activities and tasks which might otherwise be unfamiliar to students based on their backgrounds and experiences. Here, Multiple Intelligence types are explained with various activities applicable for the English language classroom.

Activities for Multiple Intelligences

Linguistic Intelligence

Armstrong (2000) states that people with high Linguistic Intelligence show abilities with words and languages. They like reading, writing, telling stories and playing word games. They are sensitive to sound structure and how language and words function. Linguistic Intelligence is the capacity to use language to express what's on one's mind and to understand other people. Linguistic Intelligence is an important skill for writers, orators, speakers, lawyers or any other persons who have great passions for language. The following are some activities and assignments that can promote linguistic intelligence:

- Reading, Writing, Narrating - Stories, Sequels, Poems, Drama, Jokes, Descriptions, News Reports;
- Doing oral activities before writing like story-telling, discussing and interviewing;
- Encouraging - Debates, Declamations, Impromptu Speech on current affairs, life and practically everything;
- Answering multiple questions related to a text;
- Choosing appropriate word to fill in a gap in a sentence;

- Choosing an appropriate synonym or antonym for a given word;
- Starting - a Newsletter, Magazine, Journal;
- Conducting - Mock Interviews, Chat Shows, Role Plays, Dramas, Story Telling;
- Creating Slogans, Defense, Case Studies etc.;
- Solving - Puzzles, Crosswords, Vocabulary Games;
- Initiating Vocabulary Banks;
- Preparing and Giving Presentations;
- Using virtual libraries and desktop publishing.

Logical and Mathematical Intelligence

According to Armstrong (2000), people with high Logical-Mathematical Intelligence have the ability to use numbers effectively and are sensitive to logical patterns and relationships. They like experimenting, questioning, and figuring out logical puzzles. They have a unique way of searching for relationships and connections, categorizing, sequencing and outlining. The logical-mathematical learner typically solves problems with logic, calculates mathematics problems quickly and prefers to see things categorized in a logical sense of order.

People with logical/mathematical intelligence are known to:

- Be good with numbers;
- Have a good understanding of logical concepts;
- Have above-average reasoning skills;
- Be skilled at understanding and applying scientific principles;
- Be skilled at manipulating numbers and operations;
- Enjoy solving puzzles and mysteries;
- Enjoy experiments;

The following are some activities and assignments that can promote Logical-Mathematical Intelligence:

- Word order activities;
- Story telling with the essential concepts of puzzles;
- Brain storming ideas to develop group project;
- Tape recording to record students' thoughts on tape as an alternative mode of expression;
- Problem solving activities;
- Computer games;
- Critical thinking activities;
- Journal writing;
- Publishing articles and compositions;
- Sequencing events in a chronological order, finding logical errors;
- Presenting timelines of events presented in a story or a text;
- Jigsaw puzzles and games, concept maps;

Visual-Spatial Intelligence

Visual-Spatial Intelligence has to do with vision and spatial judgment. People who are strong in this intelligence have an exceptional visual memory and are often artistic. They are sensitive to colors, shapes, form, space and relationships that exist between these elements. They like designing, drawing and visualization (Armstrong, 2000). Visual-spatial intelligence deals with shapes, patterns, designs and the entire spectrum of colors and with the placement and relationship of objects in space including distance and direction. It includes the capacity to visualize, dream and imagine. People with this intelligence possess the ability to visualize the world accurately, modify their surroundings based upon their perceptions, and recreate the

aspects of their visual experiences. People with high visual-spatial intelligence are good at remembering images, faces, and fine details. People with Visual-Spatial Intelligence are known to:

- Be observant;
- Pay attention to visual details;
- Have good visual imagination;
- May doodle and mind-map;
- Have spatial awareness;
- Have good sense of direction;
- Have good color sense;
- Can read maps;
- May be a good driver;
- May have vivid dreams.

The following are some activities and assignments that can promote Visual-Spatial Intelligence:

- Organizing vocabulary using Mind-maps or Spidergram;
- Making spelling words into pictures, drawing images for the vocabulary words, using pictures and to illustrate a project;
- Making charts and drawing diagrams and maps.
- Using pictures as prompts for writing and matching pictures with words;
- Creating videos for grammar, listening, speaking, reading and writing;
- Entering vocabulary words into Google Images provides a wide range of pictures that vividly illustrate each word;

- Doing imagination exercises like imagining what their ideal school would look like;
- Taking photographs and describing pictures or images;
- Creating slide shows and making arts and craft projects;

Body-Kinesthetic Intelligence

According to Armstrong (2004), this area has to do with movement and actions. In this category, people are generally skilled at physical activities such as sports or dance and often prefer activities which include movements. They may enjoy acting, dancing, touching, gesturing and in general they are good at building and making things. They like hands-on learning and tangible experiences. People with this intelligence are good at building things and like to stay active. They have good motor skills and are very aware of their bodies. They learn best through movement and experimentation. The word "kinesthetic" derives its meaning from another technical term called "Kinesthesia" which means a sense for any movement. In other words, it also refers to a keen awareness for perceptible changes in our body momentum, balance, position and stationary presence. With this sense, we can easily know how our bodies and their components are moving in a perfect balance. Three of the most significant aspects of kinesthetic intelligence include: Invisible control of motions within the body; an ability to handle objects and things with good skills; and an ability to use the entire body to get required motions. People with Body-Kinesthetic Intelligence are known to:

- Excel at dancing, sports and activities that involve movements of bodies;
- Learn and remember by “doing”, rather than hearing or seeing;
- Have excellent physical coordination - children are very active and agile with their bodily functions;
- Explore independently with objects or tasks versus listening about the object or task;

- Be adept at achieving their goals by using their body and mind;
- Have very good motor control, hand-eye coordination and muscle coordination;
- Possess an ability to create things and patterns with their hands;
- Have excellent physical shape and strength;
- Learn best through movement and experimentation;

The following are some activities and assignments that can promote Body-Kinesthetic Intelligence:

- Curriculum related field trips and excursions;
- Computer typing related to English concepts;
- Movement games especially popular in English classes like 'Guess who' games;
- Role plays and dramatization using dialogues;
- Pantomime vocabulary activities;
- Facial expression games;
- Small group work and team competitions;
- Peer teaching;
- Drawing and coloring;
- Making and using models of objects, games;

Musical/Rhythmic Intelligence

According to Armstrong (2000), Musical and Rhythmic Intelligence has to do with rhythms, music and listening. People who have high musical intelligence are more receptive to sounds, rhythms, tones and music. They like singing, whistling, humming and tapping feet and hands. This intelligence enables them to recognize, create, reproduce, and reflect on music, as

demonstrated by composers, conductors, musicians, vocalist, and sensitive listeners. People with musical intelligence are able to hear and recognize patterns easily. They are very sensitive to rhythm and sound. They remember things by turning them into lyrics or rhymes. People with musical intelligence have a strong appreciation of music. Many of them learned the alphabet through this intelligence and the "A-B-C song."

People with Musical-Rhythmic Intelligence are known to:

- Seek patterns in their environment and be drawn to sound;
- Easily memorize phrases and words in foreign languages;
- Enjoy dancing and singing;
- Use patterning to remember things;
- Have good rhythm;
- Be skilled at playing several instruments;
- Be zealous about music;
- Have the ability to easily remember songs;
- Have a high level of understanding of musical structure, notes, tone, and rhythm.

The following are some activities and assignments that can promote Musical-Rhythmic Intelligence:

- Songs and English Rhymes;
- Tongue twisters;
- Reciting poetry aloud and clapping to accentuate the rhythm of the words;
- Playing songs in order to introduce a topic or analyze the lyrics, transforming lyrics into a text;
- Listening to raps and having students write their own;

- Singing folk songs and having students write new verses;
- Creating readers' theatre with writing;
- Practicing stress and intonation;
- Writing their own songs and music;
- Listening to videos and CDs that teach writing concepts (e.g., parts of speech, sentence structure).

Interpersonal Intelligence

According to Armstrong (2000), people who have high Interpersonal Intelligence are usually friendly and are sensitive to others' moods, feelings and motivations. They always have interaction with others. They like leading, organizing and relating and work best as part of a group. Interpersonal intelligence is the ability to understand and interact effectively with others. It involves effective verbal and nonverbal communication, the ability to note distinctions among others, sensitivity to the moods and temperaments of others, and the ability to entertain multiple perspectives. People with interpersonal intelligence are able to pick up on the mood, characteristics, emotions, and intentions of those around them. They are also able to use this information to tailor their approach of interacting with each individual.

People with Interpersonal Intelligence are known to:

- Work well with others;
- Have many friends and empathy for others;
- Be skilled verbal and non-verbal communicators;
- Enjoy being around others;
- Be able to examine a situation from multiple points of view and have good problem solving skills;

- Be good at socializing with others and enjoy discussion;
- Form strong positive relationship with others and are natural leaders among peers and groups.

The following are some activities and assignments that can promote Interpersonal Intelligence:

- Peer-teaching and paired activities;
- Using peer groups for brainstorming, revising, and editing;
- Working with cooperative learning groups to design and complete writing projects;
- Connecting writing activities to the community outside the school;
- Interactive computer games;
- Inviting guests to the classroom to tell stories or to give lectures;
- Tutoring young students or classmates;

Intrapersonal Intelligence

According to Armstrong (2000), people with high Intrapersonal Intelligence have great self-knowledge and they have an accurate picture of themselves. They know about their strengths and weaknesses as well as their motivations, desires and intentions. They are good at setting goals for themselves, planning and reflecting on their work. They prefer to work alone.

People with Interpersonal Intelligence are known to:

- Have deep understanding of their own feelings;
- Have the ability to discriminate among people;
- Have thorough knowledge of their strengths and weaknesses, desires, and intelligences;
- Be lifetime authors of classic autobiographies;

The following are some activities and assignments that can promote Interpersonal Intelligence:

- Have students choose their best writing pieces for portfolios;
- Have students write in a daily or weekly journal;
- Write essays from the perspective of famous literary figures;
- Assign independent projects;
- Have students keep personal journals and write reflections on topics studied in class;
- Use life maps and personal topics as springboards for writing and incorporating mind-maps;
- Research activities and using software;
- Exploring personal interest.

Naturalist Intelligence

According to Armstrong (2000), people with high Naturalist Intelligence possess expertise in the flora and fauna of the environment. They might like playing with pets, gardening, investigating nature and caring for the Earth. Naturalist Intelligence describes a person who is curious about living things and the planet. It is the ability to understand, relate to, categorize, classify, comprehend, and explain the things encountered in the world of nature. People with Naturalist Intelligence are known to:

- Have the ability of observation in nature;
- Have awareness of changes in weather, climate and atmosphere;
- Have intense interest in learning about nature;
- Have dramatic enthusiasm and joy when in contact with nature;
- Have physical and emotional adversity to pollution;

The following are some activities and assignments that can promote Naturalist Intelligence:

- Attending class outside and caring for classroom plants;
- Reading books and articles about nature and the environment;
- Keeping a nature journal to record changes or discoveries in nature;
- Writing articles, poems and short stories about nature;
- Researching animal habitats and writing essays on the topic;
- Performing skits about nature and its cycles;
- Observing natural surroundings in preparation for writing;
- Conducting mini-projects about local foliage;
- Enacting role-plays on real environmental topics;
- Participating in park/playground clean-ups, recycling drives, and beautification of the environment.

Conclusion

Multiple Intelligence Theory can be applied by educators, and language educators specifically, in the classroom. Using the multiple intelligences approach in the English classroom, a teacher can provide opportunities for authentic learning based on students' needs, interests, and talents. There are many Multiple Intelligence assessment tools available online or in print for use in the classroom. These tests can provide a fascinating snapshot for teachers to identify their students' innate abilities. Identifying students' abilities, teachers are able to organize a variety of contents that offer learners ways to engage in active learning that matches or enhances their Multiple Intelligences.

References

Armstrong, T. (1995). *Seven kinds of smart: Discovering and using your natural intelligences.* New York: Plume/Penguin.

Armstrong, T. (1995). *Multiple Intelligences in the classroom.* Alexandria, VA: Association for Supervision and Curriculum Development.

Armstrong, T. (2000). *Multiple Intelligences in the classroom* (2nd ed.). Alexandria, VA: Association of Supervision and Curriculum Development

Armstrong, T. (2008). *Multiple Intelligences in the classroom* (3rd ed.). Alexandria, VA: Association for Supervision and Curriculum Development.

Chapman, C. & Freeman, L. (1996). *Multiple intelligence: Centers and projects*. Retrieved from www.metagifted.org/topics/multiple intelligence

Christison, M. (1996). Teaching and learning language through multiple intelligences. *Teaching English as a Second Language Journal, 6,* 10-14.

Christison, M. (2005). *Multiple intelligence and language learning: A guidebook of theory, activities, inventories and resources.* San Francisco, CA: Alta Bank Center Publishers.

Christison, M.A. & Kennedy, D. (1999). *Multiple intelligences: Theory and practice in adult ESL.* Retrieved from http://www.cal.org/adultesl/resources/digests/multiple-intelligences.php

Gardner, H. (2007). *Multiple intelligences: New horizons in theory and practice.* New York: Basic Books.

Gardner, H. (2009). *Five minds for the future.* Cambridge, MA: Harvard Business Review Press.

Hatch, E. (1974). *Second language learners–universals?* Working papers on Bilingualism 3: 1-17. Retrieved from https://trove.nla.gov.au/work/152726656?q&versionId=166445502

Haley, M. (2004). Learner centered instruction and the theory of MI with second language learners. *Teachers College Record, 106*(1) 163-180.

Ibmian, K.S & Hadban, A.D. (2013). Multiple intelligence theory in ELT field. *International Journal of Humanities and Social Science*. *3*(4) [Special Issue – February 2013].