The Correlation Between the Results of General English Proficiency and Numeracy Test of IER and the GPA in ESLCE

Desalegn Chalchisa*

1. The Description of the General English Proficiency and Numeracy Test (GEPN)

The GEPN was developed by IER in 1997. It consists of three subsets: English Comprehension, Vocabulary and Grammar; Written English; and Numerical Ability. The test was developed to be used as an instrument for the selection of candidates for the Professional Certificate and Diploma in Management, a new programme which is launched by the Federal Democratic Government of Ethiopia in Collaboration with the Open University Business-School of the UK, and the local higher education institutions (Ethiopians Management Development Office).

The English comprehension, vocabulary and Grammar subset contains 50 multiple choice items. The comprehension section contains 10 items based on two reading passages. All the items in this section are with five options. The vocabulary section contains 30 items each item followed by four options and the Grammar section contains 10 items with each four options. A total of 45 minutes was allowed for this sub-test. In the written sub-test, a topic was assigned where examinees were instructed to write an essay and to compose in standard written English for 30 minutes. The Numerical Ability sub-test contains 25 items with four to five options to be completed in 45 minutes. All the sub-tests were presented in a single booklet.

The test was administered to a total of 1047 candidates in April 1997 in six centers of five regional states, namely: The Tigray, Amhara, Oromya (2 centers), Addis Ababa and the Southern Nations and Nationalities and People's Regional States at the same date and time. The following table presents total number of candidates who took the test in each regional state. Out of 1047 candidates who took the test the number of female candidates were 143 (13.7%). With respect to

---

* Lecturer, Institute of Educational Research, AAU.

The Correlation Between the Results of General English Proficiency and Numeracy Test of IER and the GPA in ESLCE

Desalegn Chalchisa[*]

1. The Description of the General English Proficiency and Numeracy Test (GEPN)

The GEPN was developed by IER in 1997. It consists of three subsets: English Comprehension, Vocabulary and Grammar; Written English; and Numerical Ability. The test was developed to be used as an instrument for the selection of candidates for the Professional Certificate and Diploma in Management, a new programme which is launched by the Federal Democratic Government of Ethiopia in Collaboration with the Open University Business-School of the UK, and the local higher education institutions (Ethiopians Management Development Office).

The English comprehension, vocabulary and Grammar subset contains 50 multiple choice items. The comprehension section contains 10 items based on two reading passages. All the items in this section are with five options. The vocabulary section contains 30 items each item followed by four options and the Grammar section contains 10 items with each four options. A total of 45 minutes was allowed for this sub-test. In the written sub-test, a topic was assigned where examinees were instructed to write an essay and to compose in standard written English for 30 minutes. The Numerical Ability sub-test contains 25 items with four to five options to be completed in 45 minutes. All the sub-tests were presented in a single booklet.

The test was administered to a total of 1047 candidates in April 1997 in six centers of five regional states, namely: The Tigray, Amhara, Oromya (2 centers), Addis Ababa and the Southern Nations and Nationalities and People's Regional States at the same date and time. The following table presents total number of candidates who took the test in each regional state. Out of 1047 candidates who took the test the number of female candidates were 143 (13.7%). With respect to

---

[*] Lecturer, Institute of Educational Research, AAU.

the regional distribution of candidates, the largest proportion of candidates were from Addis Ababa (25.5%) followed by Southern Region (20.5%) and then by Amhara (19.2%).

Table 1: Frequency Distribution of Candidates who took the GEPN in each Regional State

Region	Number and Percent of Examinees							
	Male	%	Female	%	No Response	%	Total	Percent
Tigray	151	14.4	13	1.2	9	0.9	173	16.5
Amhara	187	17.9	13	1.2	1	0.1	201	19.2
Oromia Jimma	48	4.6	3	0.3	-	-	201	19.2
Oromiya Nazareth	125	11.9	12	1.2	3	0.3	51	4.9
Southern	212	20.2	2	0.2	1	0.1	215	20.5
Addis Ababa	161	15.4	100	9.5	6	0.6	267	25.5
Total	884	84.4	143	13.7	20	1.9	1047	100.0

Each sub-test was scored by hand by two competent scorers (University teachers with a minimum rank of lecturer in the appropriate field). A score of "1" was assigned to all the correct responses of the multiple choice items and "0" to wrong responses. The written test was assigned a maximum of 10 points and a minimum of 0 points. The average score of the two independent ratters was taken as a score of a candidate.

The descriptive statistics for the scores on the sub tests of GEPN and the total GEPN scores were presented in the next table.

Table 2. Descriptive Statistics of the Scores on Sub tests of GEPN and total Scores in GEPN

Variable	Mean	SD	Coefficient of Variation
GEPN-English Comprehension, Vocabulary and Grammar	25.2	9.0	0.36
GEPN-Written	3.3	2.5	0.76
GEPN - Numeric	13.3	4.0	0.30
GEPN - Total	41.8	13.7	0.33

The results of descriptive statistics shows that the greatest variability was obtained in GEPN - Written with coefficient of variation of 0.76. A range of 0.30-0.36 coefficient of variation were observed among the remaining GEPN subset scores and the total GEPN Scores.

2. The ESLCE Predictive Accuracy

The ESLCE has been serving as an instrument for the selection of students to the Institutes of Higher Learning since 1959 (MOE, 1992). It has also been serving as a screening device for selecting candidates to employment, promotion and qualification (Tsegaye, 1991). From the comprehensive summary of past studies about the prediction accuracy of the ESLCE, Makonnen et.al. (1991) concluded that the ESLCE has moderate relationship with achievements in higher education. They also made a simple regression analysis of the variables that could predict first semester GPA. The result of the analysis showed statistically significant beta weights for aptitude scores, the 12th grade reported average, the ESLCE GPA and the ESLCE English grades in predicting first semester GPA for natural science and social science students. The study by Belay (1990) in the use of the GPA of ESLCE for predicting performance in Teachers Training Institutes (TTI) showed positive significant correlation between the GPA of ESLCE and GPA in TTI Courses.

Another study by Tassew and others (1990) on students admitted to AAU from 1972 to 1976 showed a correlation of 0.34 to 0.43 between the GPA in ESLCE and College grades. Although some studies on ESLCE obtained low predictive accuracy, (Lakew, 1972; Mittman 1972 and Semira, 1991) from the above reviews, it may be concluded that the ESLCE has moderate predictive accuracy in predicting success in higher institutes of learning.

3. The Correlation between GEPN and ESLCE

If a newly developed test is highly correlated with a test which already has predictive accuracy, it would indicate that the new test has enough potential as a predictor of success in higher education (Gronlund, 1976). To find whether GEPN correlates highly with the ESLCE or not, data on ESLCE GPA was attained from reports of the candidates' GEPN. Out of 1047 candidates who took the GEPN a total of 629 examinees or (60.1%) reported their GPA.

The mean and standard deviation of the reported GPA was computed and found to be 2.4 and 0.5 respectively. The reported GPA was correlated with GEPN and, the following result was obtained.

From the intercorrelations of GEPN sub-tests scores, the total GEPN scores and the GPA in ESLCE, the highest correlation was obtained between the GEPN -

Table 3: Inter-correlation among the scores in the Sub-tests of GEPN, Total GEPN and GPA in ESLCE

Variable	1	2	3	4	5
ESLCE GPA(1)	-	0.5371*	0.4171*	0.4933*	0.5733*
GEPN-English Comprehension, Vocabulary & Grammar (2)		-	0.7157*	0.5844*	0.9584*
GEPN - Written (3)			-	05015*	0.7982*
GEPN - Numeric (4)				-	0.7685*
GEPN - Total (5)					-

*P<0.000

English comprehension, vocabulary, and Grammar and the GEPN total scores (r=0.9584). From this data it can be inferred that a good part of a domain that the GEPN total test measures is also measured by the GEPN - English comprehension, vocabulary and grammar sub-tests. However, the sub-tests are not equally powerful in predicting the performance in colleges because they correlated differently with GPA in ESLCE. The second highest correlation was obtained between GEPN-written scores and the GEPN total scores (r = 0.7982). In fact, high positive correlation coefficients were obtained between all the GEPN sub-tests cores and the GEPN - total scores, which were all statistically highly significant (p < 0.000).

With regard to the correlation between GPA in ESLCE and the GEPN sub-test scores and total test scores, the highest correlation was obtained between GPA in ESLCE and GEPN total scores (r=0.5733) suggesting that it would be better to use the GEPN total score in predicting college performance rather than each individual sub tests. Of course, the scores in two of the sub-tests correlated moderately with the GPA in ESLCE. The sub-test that correlated least with ESLCE was the GEPN - written sub-test scores (r=0.4171). From Table 4 it can be seen that all the sub-tests correlated highly significantly with the GPA in ESLCE Therefore, the data from Table 4 indicates the usefulness of the GEPN - Sub tests scores and the GEPN total scores in predicting performance in institutes of higher learning.

4. Summary and Conclusion

In this study a brief description of the aptitude test (GEPN) developed by IER, used in the selection of candidates for the Professional Certificate and Diploma in Management, and the corelations of the test with ESLCE were presented. The aptitude test, GEPN, consists of three sub-tests: The English comprehension, Vocabulary, and Grammar sub-test, the written English sub-test and the numerical ability sub-test. The test was administered to a total of 1047 candidates out of which 629 reported their GPA in ESLCE at the time of the administration of the test. The mean scores and the standard deviations of the scores for all those who took the GEPN test were computed.

The result of correlational analysis between the reported GPA in ESLCE and the GEPN sub-tests and GEPN total scores showed that the correlation between the English comprehension, vocabulary and Grammar sub test and GPA in ESLCE was 0.5371; the correlation between the written test and GPA in ESLCE was 0.4171; the correlation between the Numerical Ability test and GPA in ESLCE was 0.4933 and the correlation between the total GEPN test scores and the GPA in ESLCE was 0.5733. All the correlation coefficients were found to be statistically significant as presented in table 3 ($P<0.000$).

The data from the GEPN sub-tests and total test showed that the GEPN test has high potential in predicting success in the training of candidates for the professional certificate and Diploma in Management. This conclusion however is tentative. Further study is essential by using performance of the candidates while they are in the training for Professional Certificate and Diploma in Management as a criterion to support the present result.

References

Belay Tefera (1990). **An Evaluation of the Predictive Validity of Admission Criteria for Teacher Training Institutions in Ethiopia.** Unpublished Masters Thesis, Addis Ababa University

Ethiopian Management Development Office (Not dated) Brochure Addis Ababa, Ethiopia.

Lakew Woldetekle (1972). **The Differential Effectiveness of Amharic and English Language Predictors of College Success.** Unpublished Doctoral Dissertation Syracuse University, Syracuse, New York, USA

Makonnen Yimer, et.al. (1991). *The comparability of the Predictive Power of the Ethiopian School Leaving Certificate Examination with other Measures: Preliminary Observations.* In the **Proceedings of the Workshop on Major Issues Related to ESLCE and Possible Solutions.** Institute of Educational Research, Addis Ababa University

Mittman, A. (1972). *A Multivariate Prediction Study for HSIU.* **Technical Report,** University Testing Center,

Semira Alhadi (1991). *Correlation Between Mode of Admission (Regular, Auota, National Military Service) and Success at college.* In the **Proceedings of the Workshop on Major Issues Related to the ESLCE and Possible Solutions.** Institute of Educational Research, Addis Ababa University.

Tassew Zewdie et.al. (1990). **Assessment of the Degree of Correlation Between the ESLCE Results and the Four Years of Secondary School and University Academic Performance.** Institute of Educational Research, Addis Ababa University.

MOE (1992). **Historical Background of National Examinations,** Memograph, MOE, Addis Ababa

Tsegay Kassa (1991). *Examination, Selection, and Admission to Institutes of Higher Education in Ethiopia. In the* **Proceedings of the Workshop on Major Issues Related to the ESLCE and Possible Solutions.** Institute of Educational Research, Addis Ababa University.