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UNIVERSITY, SUDAN

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RESEARCH ARTICLE

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SUDAN**

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ABSTRACT

Objectives: The aim of this study was to investigate the relationship between English language proficiency and academic achievement of undergraduate medical sciences students in Sudan at Karary University.

Methods: A cross sectional survey was obtained including 275 students selected from Karary University students, from faculty of Medicine, Dentistry, and Pharmacy of the second, third, fourth, and fifth undergraduate years. Stratified systemic random sampling was done, self-administered questionnaire with content analysis were used as a research instruments, to collect information regarding their English language level measured by the English Language grade the student obtained from his/her final high school exam, first and second university semesters and academic achievement measured by the student's GPA from the current university level. Gathered data were analyzed using SPSS® version 18, data were analyzed using Pearson Correlation coefficient to examine the degree of relationship between English language proficiency and academic achievement. Linear Regression Analysis was also used to determine the impact of English language proficiency on students' overall academic achievement at confidence level of 95%.

Results: The results revealed that English language proficiency has a positive significant relation with the academic achievement of students and that there is a positive impact of English language proficiency on student' overall academic achievement, which means that English language proficiency is one of the factors that affects students' academic performance.

Conclusions: There is a significantly positive relation between English language proficiency and the academic achievement of Sudanese medical sciences students at Karary University. Present study identified the positive correlation between English language proficiency of students and their academic achievement and highlights the impact of English language proficiency on overall students' academic achievement.

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INTRODUCTION

The theoretical framework adopted in this study is derived from the multiple intelligence theory discovered by a psychologist, Howard Gardner, in 1983 in his book, *Frames of Mind*. The theory suggests that "there are at least seven ways that people have of perceiving and understanding the world". Gardner labels "each of these ways a distinct 'intelligence' – in other words, a set of skills allowing individuals to find and resolve genuine problems they face" (discover-multiple-intelligences.com, 2012). One of these ways of intelligence is Linguistic intelligence that "involves sensitivity to spoken and written language, the ability to learn languages, and the capacity to use language to accomplish certain goals. This

intelligence includes the ability to effectively use language to express oneself rhetorically or poetically; and language as a means to remember Information. Writers, poets, lawyers and speakers are among those that Howard Gardner sees as having high linguistic intelligence. (infed.org). The reason of adopting this theory is that it is related to the variable in study. (Yeterli D, Ba A., 2006)

According to (Blagojevich, Ruiz and Dunn, 2004), *English language proficiency*: English language learners' communication information, ideas and concepts necessary for academic success in the content area of social studies. Limited English proficient student is defined as a student whose first language is a language other than English who is unable to perform ordinary classroom works in English (Driscoll, 2003).

The definition of English language proficiency adopted in this study is the ability to perform the classroom works in English. As theories among pedagogues as to what constitutes proficiency go, there is little consistency as to how different organizations classify it.

Academic achievement according to (Annie Ward, Howard W. Stoker, Mildred Murray-Ward, 1996) is the outcome of education referred to: the extent to which a student, teacher or institution has achieved their educational goals. Academic achievement is commonly measured by examinations or continuous assessment but there is no general agreement on how it is best tested or which aspects are most important — procedural knowledge such as skills or declarative knowledge such as facts.

GPA: In some countries, all grades from all current classes are averaged to create a grade point average (GPA) for the marking period. The GPA is calculated by taking the number of grade points a student earned in a given period of time of middle school through high school (grade point average. (n.d.). WordNet2.0). The GPA can be used by potential employers or educational institutions to assess and compare applicants. A *cumulative grade point average* is a calculation of the average of all of a student's grades for all of his or her complete education career (GPA Calculation and Unit Conversion: MIT Office of the Registrar. Web.mit.edu). GPA is used as a grading system for all medical sciences colleges. It comprises five classes that range from excellent to fail as follows: Excellent (4.00-3.5), Very Good (3.49-3.00), Acceptable (2.99-2.5) and Fail (Less than 2.50).

Many scholars investigated the relationship between English language proficiency and academic achievement. (Wille, 2006) studied the relationship between English language proficiency and academic achievement of Hispanic students at secondary level in the United States. He found that there is a positive relation between these two variables.

Based on these evidences, there are considerable studies conducted in this area, (Shahragard, Baharloo and Ali, 2011) investigated the relationship between academic achievement and language proficiency of Iranian college students at Shiraz. University in Iran; they revealed that there is a significant positive relation between language proficiency and academic achievement.

In Africa, (Orgunsi & O, 2009) argue that English language plays the fundamental roles of being the means of instruction in Nigerian schools from primary to tertiary level. The knowledge of the contents of school subjects is transferred to the students at all levels of education via English language medium. It therefore follows that how well students would fare in academic achievement depends largely on their level of proficiency in English language which is the medium of instruction. (Orgunsi & O, 2009) assert that their results showed that “there is a significant impact of English language proficiency on students’ overall academic achievement and that English language proficiency of the students has a significant positive relationship with their overall academic achievement”.

(Sahragard *et al.*, 2011) carried out a research aimed to find out the relationship between Iranian college students’ language proficiency and their academic achievement selecting a sample of 151 college students majoring in English literature at Shiraz University, Iran. They found the existence of a significant positive relationship between language proficiency and academic achievement. (Orgunsi & O, 2009) examined the extent to which Nigerian secondary school students’ proficiency in English predicted their overall academic achievement. They proportionately sampled 400 students from eight randomly selected secondary schools; they found that English proficiency has significant impact on students’ overall academic achievement. They also found that English language proficiency has significant relationship with their overall academic achievement. This study is more relevant than that conducted by (Sahragard *et al.*, 2011), since this study can be generalized according to the scope and the sample size.

(Kong *et al.*, 2012) investigated the use of English language proficiency to predict the future academic success of English learner (EL) students. Their study revealed that English language proficiency is a factor of prediction for future academic success.

(Zangani and Maleki, 2007) asserted that one of the most serious problems that Iranian EFL students face in their field of study is their inability to communicate and handle English which will influence their academic success; they carried out a survey intended to examine the strength of the relationship between English language proficiency and the academic achievement of Iranian EFL students. Accordingly, the relation between English language proficiency and academic achievement was examined in their study, and a significant connection was found between proficiency and grade point averages (GPA) of academic achievement. Similarly, the results revealed a significant correlation between English language proficiency and achievement in English speaking and writing subjects.

In Sudan, to the researchers’ best knowledge; there is no evidence in the literature with regard to studies that investigates the relationship between English language proficiency and academic achievement of Sudanese higher education students. Thus this current study examines the relationship between these two variables.

METHODS

Study design and participants

This descriptive cross-sectional study was carried out among second to fifth years in medical, dental and pharmacy students from Karary University. The research was approved by the Gezira University ethical committee and endorsed by the corresponding colleges’ deans of Karary University. Students’ participation was on a voluntary basis and their identities remained anonymous. The privacy and confidentiality of the graduates was guaranteed, and their consent to take part in the study was taken. Personal data for staff and students are only available to administration of involved faculties – only

summary and aggregate data were observed by the data collectors.

Hypotheses

English language proficiency affects the overall students' academic achievement.

Research questions

Main Research Question: Is there is a correlation between English language level and academic achievement among under graduate students of medical sciences at Karary University?

Sub Question: Does English language level predict the academic achievement of undergraduate students of medical sciences at Karary University?

Questionnaire development and validation

The questionnaire used in this study is a custom made one comprised of 12 questions and is divided to three sections (A, B and C). Section A consists of 7 questions that identify demographic information, whereas section B consists of 3 questions relating to English language level and section C contains 2 questions that relating to academic achievement of the students.

The face and content validity of the questionnaire was assessed by 5 academic staff and expertise from various disciplines. After addressing the feedback/comments received from the academicians the draft questionnaire was pre-tested on a sample of twenty students prior to its final use on study participants. The reliability of questionnaire was tested using Cronbach-alpha test and a value of 6.45 was considered reliable.

Sampling and data collection

A sample size calculation using Epi Info™ program determined that 264 students would be necessary for this study. A convenience sampling approach was adopted and a total of 275 students agreed to participate in this study. We increased the number to 275 to compensate for the missing data if present.

Then stratified systemic random sampling technique was adopted by dividing the total number of participants between the three colleges in proportion related to its corresponding population size. Therefore, we strongly believed that responses generated can be considered as convenient.

This sample size has been chosen according to the literature. As mentioned by (Yeterli and A, 2006) Previous studies took sample sizes between 50-150 like (Vázquez&López, 1997), 100, (Zangani and Maleki, 2007), 50, (Sahragard et al., 2011), 151. The average of these samples gives 100.

A team of data collectors consists of nine individuals were trained by the researcher and guidelines for the students to fill

the self-administered questionnaire was discussed with them in details. They covered the three colleges of medicine, dentistry, and pharmacy. Then students filled their questionnaires. Collected data including figures namely, English language grade of semester 1, 2, and high school certificate, and the final GPA of current undergraduate level, was revised from students' records by the assistance of data collectors, registrars of each corresponding college under direct supervision of the researcher to avoid any errors.

Statistical analysis

Collected Data were entered and statistically analyzed using SPSS® version 18. Data were analyzed using Pearson Correlation coefficient to examine the degree of relationship between English language proficiency and academic achievement. Linear Regression Analysis was also used to determine the impact of English language level on students overall academic achievement at a confidence level of 95%.

RESULTS

Socio-demographics of study population

Table1. Shows that: A total of 275 students from faculty of medicine, dentistry and pharmacy participated in this study, among them 149 (54.18%) were females, while males represented 126 (45.82%) of the participants. This indicates that both genders have participated in this study. Percentage of 39.64% of the participants was from college of Medicine, 32.36% from college of Dentistry and 28% from college of Pharmacy. Participants of public admission were 35.27% and 64.73% of them were privately admitted.

According to the desire of admission to the corresponding college whether Medicine, Dentistry or Pharmacy 76.84% of the participants were admitted to the college of their first desire, while 23.16% of them were admitted to a college not of their first desire.

Table1 Sociodemographic data (n=275)

Variable	Frequency	Percent
Gender		
Male	126	45.82%
Female	149	54.18%
Type of College		
Medicine	109	39.64%
Dentistry	89	32.36%
Pharmacy	77	28%
Type of admission		
Public	97	35.27%
Private	178	64.73%
Desire on admission		
First	209	76.84%
Other	63	23.16%
Type Of Certificate		
Sudanese	241	87.64%
Arabic	34	12.36%
Other	0	0.00%
Residence		
Not with family	97	35.27%
With family	178	64.73%

According to the type of high school certificate of participants 87.64% of them were Sudanese one, while 12.36% of them were Arabic high school certificate. There were no other high

school certificates such as English one. Regarding the residence of the participants, 35.27% of the participants were not living with their families, while 64.73% of them were living with their families.

The relationship between English Language level and academic achievement of students

- **English language grade of semester 1 and the academic achievement (GPA):** The results in Table 2 Shows that: 0.000 indicates that there is significant correlation between grade of English language grade of semester1 and the final GPA at 0.05 significance level, 0.39 indicates that there is positive weak correlation between these two variables.

Table2 English language grade of semester 1 and the academic achievement (GPA) (n=275)

The Correlation between grade of English in semester1 and the final GPA	
Correlation Coefficient	P-value
0.391268903	0.00

- **English language grade of semester 2 and the academic achievement (GPA):** The results in Table 3 Shows that: 0.000 indicates that there is a significant correlation between grade of English language grade of semester2 and the final GPA at 0.05 significance level, 0.45 indicates that there is positive weak correlation between these two variables.

Table3 English language grade of semester 2 and the academic achievement (GPA) (n=275)

The Correlation between grade of English in semester2 and the final GPA	
Correlation Coefficient	P-value
0.454817142	0.00

- **English language grade of high school and the academic achievement (GPA):** The results in Table 4 Shows that: 0.322 indicates that there is no significant correlation between grade of English language grade of high school and (GPA) at 0.05 significance level, 0.059 indicates that there is positive very weak correlation between these two variables.

Table4 English language grade in high school and the academic achievement, GPA (n= 275)

Correlation between grade of English in high school and the final GPA	
Correlation Coefficient	P-value
0.059849074	0.322736273

- **English language proficiency as a predictor to academic achievement:** Linear Regression Analysis was also done to determine the impact of English language level on students overall academic achievement at 0.05 level.

R square= 20.83% this means that 20.83% of the variation in GPA explained by Grade of English in semester one. (One unit increase in grade of English in semester 1 will increase GPA by 0.01.)

R square= 25.15% this means that 25.15% of the variation in GPA explained by Grade of English in semester two. (One unit increase in grade of English in semester 2 will increase GPA by 0.02.)

DISCUSSION

Data collected were analyzed using Pearson Correlation coefficient to examine the degree of relationship between English language proficiency and academic achievement. It's found that there is a positive correlation between English language grade of semester one and semester two, grade of English in high school (English Language proficiency) and the final GPA (Academic Achievement).

The results of data analysis demonstrated that the null-hypothesis of this study, which asserts, "there is a relationship between English language proficiency and the academic achievement" was confirmed at (Correlation coefficient for English language grade of semester one is 0.39, 0.45 for English language grade of semester two and 0.059 for English language grade of high school). Therefore, there is a relationship between these two variables; in other words, the English language proficiency correlates positively with the academic success. English language proficiency can be used as a predictor to academic achievement, although it's weak but still significant enough. The positive relationship implies that the more proficient students are in English language, the better the academic performance such students.

These findings support the view of the researchers that there is relationship between English language proficiency and academic achievement. (Ogunsiji & O, 2009) investigated the relationship between English language proficiency and academic achievement of among EFL students in Nigeria, The results showed that English language proficiency of the students has a significant positive relationship with their overall academic achievement and that there is a significant impact of English language proficiency on students overall academic achievement. Also this study supported our findings which investigated the relationship between Iranian college students' language proficiency and their academic achievement (Sahragard, Baharloo and Soozandehfar, 2011).

Proficiency over scientific English language among higher education is not only the problem of Sudanese medical students. In many none English speaking such as Iran (Gobel, Thang, Sidhu, Oon, & Chan, 2013), Pakistan (Fikree & Marsh, 1996), Tanzania (Komba et al., 2012), Spain (Abella & Urrutia, 2013) and even in English speaking countries like Australia (Mann, Canny, Reser, & Rajan, 2013) and the United Kingdom (Meats et al., 2009), it was shown that students ability in scientific English (reading, writing and speaking) directly increases the success of medical students

Limitations

English language proficiency is ideally measured using standardized international tests such as IELTS and TOEFL, but in this study the author used the English language grades of the final high school exam, first and second university semesters

because of its feasibility. For this reason the word level is introduced in this study instead of proficiency. This research is a cross sectional study that reflects the existing situation so it doesn't express what happened in the past regarding English language proficiency of Sudanese students, or predicts what will happen in the future. This research used quantitative data collection techniques like Questionnaire which is not comprehensive on the other hand qualitative measures such as Focused Group Discussion and Interviews were not used which may add a new dimension to the findings. Karary University was chosen as a sample but other Sudanese universities were not included in this study. Moreover only faculty of Medicine, Dentistry and Pharmacy were included in this study - because of their homogeneous curricula- while other medical sciences faculties such as Medical Laboratories, Nursing, Veterinary Medicine, Optics, etc, were not included. Comparison with other institutes in which Arabic language is the main language of instruction was not done in this study.

CONCLUSIONS

It's found that there is a positive correlation between English language grade of semester one and semester two (English Language level) and GPA (Academic Achievement), positive correlation between grade of English in high school and the final GPA. Therefore, there is a relationship between these two variables; in other words, the English language proficiency correlates positively with the academic success. There is an impact of English language proficiency on students' overall academic achievement. The positive relationship implies that the more proficient students are in English language, the better the academic performance of such students. The results are in keeping with other studies indicating that variables, other than language proficiency may be relevant. Also there is a significant impact of English language proficiency on academic achievement, so English language level can be used as a predictor to academic performance or achievement. So effort should be exerted to prepare students in the pre graduate level especially in English language and scientific English in early undergraduate levels Other determinants of academic achievement of students should be thoroughly investigated.

Implications and future directions

A longitudinal study involving a cohort of students over full length academic periods can help provide deeper insight into challenges affecting students' academic achievement. Studies using qualitative methods are recommended for a better understanding of the sources of challenges that influence academic achievement of students and how they may be managed best, based on the views of the stakeholders. Interventional studies should also be designed to measure the effectiveness of existing support system in place.

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Conflict of Interest

The authors declare that they have no conflict of interest.

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