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The Effect of Linguistic Homogenization on English Proficiency of Students, Case Study: Junior Students of Shahid Sadoughi University of Medical Sciences, 2018

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ABSTRACT

Introduction: Iranian students of health need to bone up on their academic English to be able to read the English sources of health as a factor contributing to community health promotion. In the Iranian academia, students are placed in Basic and General English courses not on the basis of proficiency levels, but on the basis of their academic majors with the same protocol, teaching materials, and methodology used for these heterogeneous classrooms leading to failure and dissatisfaction in the use of academic English as a vehicle for increasing their knowledge of community health. This study investigated the effect of English proficiency homogenization on linguistic proficiency of Iranian students of health as a means of health enhancement via reading English sources.

Methods: In this quasi-experimental study conducted in 2018, the Cambridge Placement Test was given to 71 students of three health majors at Shahid Sadoughi University of Medical Sciences selected with convenient sampling method. The students were divided into three language ability groups using placement test percentiles and taught with two different protocols which were used till the midterm exam. The midterm exam was given and the data were collected and analyzed with SPSS20 using descriptive statistics, i.e., frequency, percentiles, mean, and standard deviation and also inferential statistics, i.e., one-way ANOVA, Levene statistic, Tukey HSD, and independent T-test.

Results: A significant difference was found between the three groups on the placement test (p=0.015); there was no significant difference among the three different academic majors with regard to Criterion-referenced Test (CRT) scores (p=0.05); there was no significant difference among the three Norm-referenced Test (NRT) forms (Forms A, B, & C) (p=0.05); also, there was a significant difference among the two CRT forms (Forms A, B) (p=0.05). Regarding the placement test, the significance indices demonstrated a significant difference between group A, on the one hand, and groups B and C, on the other with no significant difference between groups B and C (p=0.05). The findings of the second part of the post hoc test showed a significant difference for the midterm exam between Group A, on the one hand, and Group B and Group C (p=0.05), on the other, with no significant difference between groups B and C (p=0.05), indicating the success of the present study.

Conclusion: The students of health should be grouped in Basic English and EGP courses, not based on their academic majors, but based on their English proficiency levels for a successful English pedagogy leading to successful use of English texts of health as a means of promoting health community.

Key Words: Health promotion, homogeneity, proficiency level, Criterion-Referenced Test, Norm-Referenced Test, English for General Purposes, placement test

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Introduction

The English language courses are among the main courses for the students of any major at any level, BA (Bachelor of Arts), BS (Bachelor of Sciences), MA (Master of Arts), MS (Master of Sciences), or PhD (Doctor of Philosophy). Many allied health texts are available in English. Iranian students of health need to bone up on their rusty English to be able to read and understand the English texts of allied health, leading to their enhanced capacity for increasing their knowledge of community health. So, as some scholars have emphasized, their learning and teaching are of utmost significance (1, 2, 3).Nevertheless, there are fundamental differences between the teaching of English courses and other courses such as the following: 1. Each university student is required to pass numerous English courses such as Basic English, EGP (English for General Purposes) courses, and EAP/ESP courses (English for Academic Purposes/English for Special Purposes) though the EAP courses, e.g., English for the Students of Medicine I & II, are emphasized over EGP courses by scholars (4,5). 2. The English courses are among the few courses in which the students may gain some proficiency before entering the university. Some survey indicates that most students attend the language school classes before university, and some of them have even progressed to the Advanced levels of English courses at language schools. 3. Other factors like residence in a foreign country, going abroad, native English parents or friends, membership in English language groups, etc. may also promote language acquisition. These factors affect the leaning of other courses to a lesser degree. One complaint was that the teaching material presented by the instructors and profs was old and repetitious and that they should be taught and tested for what they already knew. However, in the second semester, students with heterogonous levels of language proficiency are grouped in one class. The question to be asked here is whether all these students learn English in the EGP course at the same rate. Simply put, presently students of heterogeneous proficiency levels are grouped in the same classes such as EGP for the Students of Public Health, EGP for the Students of Occupational Health, EGP for the Students of Management of Health Services, etc. These classes contain students at the beginner levels to advanced levels of language proficiency. Another unfortunate issue for these classes is that the same teaching material and the same protocol are used for these heterogeneous classes regarding language proficiency. Hence, some appropriate measures should be taken to overcome these unfavorable situations.

Concerning the relationship between language proficiency and other learner variables, some scholars have conducted some useful research. For example, Wen & Johnson (6) studied the relationship between L2 (Second Language) learner variables and English proficiency. Further, Baker Smemoe & Haslam (7) investigated the effect of language learning aptitude, strategy use and learning context on L2 pronunciation proficiency. Additionally, Galaczi (8) surveyed the interactional competence across various proficiency levels. Moreover, Iwashita et al. (9) worked on assessed levels of second language speaking proficiency to see how distinct they are. Tomiyama (10) further studied the effect of age and proficiency on L2 attrition using data from two siblings. Ortega (11) studied the syntactic complexity measures and their relationship to L2 proficiency. Finally, Al-Gahtani & Roever (12) elaborated on the proficiency and sequential organization of L2 requests.

According to Abbasian Boroojeni et al. (13), a prominent position is devoted to testing in the Iranian test-oriented situation in which the matriculation examinations cause serious educational and occupational consequences. On the other hand, tests have been traditionally categorized into two main divisions: norm-referenced tests and criterion-referenced tests. The two types of tests are different in their intended objectives, content selection, and the scoring process which determines the way the test results must be interpreted.

According to Bond (14), NRTs are applied to compare a test-taker's performance to that the performance of other test-takers. Standardized examinations such as the Scholastic Aptitude Test are NRTs that aim at ranking the group of testees to

make decisions about their chances of success. CRTs differ from NRTs in that each test-taker's performance is compared to a pre-established set of criteria. The findings of these tests are usually "pass" or "fail" and they are utilized in making decisions about issues as job entry, certification, or licensure. An example of a CRT is the national board medical exam. The examinee is shown either to have the skills to practice the profession, in which case he or she is licensed or not. Based on the previous literature, some relationship has been found between NRT and CRT. On the other hand, it is possible to predict CRT (quizzes, midterms, final exams) scores based on NRT, for example, placement tests.

This study was an action research which, as Rahimi & Askari Bigdeli (15) put it, provided a viable solution to the all-inclusive academic problem elucidated above. Briefly, it is concerned with the effect of proficiency homogenization in students of health as a means of community health promotion, i.e., grouping students based on their level of language ability rather than their university major, on Iranian students' language learning rate by answering the following research questions:

1. Is there any significant difference among the three different majors of health with regard to NRT scores?
2. Is there any significant difference among the three different majors of health with regard to CRT scores?
3. Is there any significant difference among the three NRT forms (Forms A, B, & C)?
4. Is there any significant difference among the two CRT forms (Forms A, B)?
5. Is there any significant difference between different levels of language ability in students of health with regard to NRT and CRT?

Since we are not concerned with the technical operationalization of the term "proficiency" here, as it has a certain je ne sais quo for readers, we use it loosely to mean "language ability".

Methods

Participants

The participants of the present study were 71 junior students of Shahid Sadoughi University of Medical Sciences in three different branches of Health, i.e., Public Health, Occupational Health, and Management of Health Services. They were selected with a convenient sampling method in 2018. No subject attrition rate was predicted because all the students were expected to pass the pre-university course as it is a prerequisite for the General English course. The protocols used for the three groups were approved by three experts in TEFL (Teaching of English as a Foreign Language). No ethical considerations were necessary for this study.

Design of the Study

This study used convenient sampling method to select the participants; thus, the present study was a quantitative Quasi-experimental study. It is quantitative because the gleaned data are manipulated by the researcher and to be analyzed using descriptive and inferential statistics. It is quasi-experimental since it is based on convenient non-random sampling, and there are three experimental groups: one +intermediate and two – intermediate groups.

Instruments

Cambridge Placement Test (Form A, Form B, and Form C) was used to cull the required data for placing the students at different levels. This test includes 20 items on listening comprehension, 20 items on reading comprehension, and 40 items on grammar and vocabulary. Also, a researcher-made midterm exam (Form 1 and Form 2) was used to observe the effects of different protocols on the learners' language ability levels.

Data Collection Methods

To carry out the research, the following steps were taken consecutively:

The Cambridge Placement test was given to 71 students with three majors: Public Health, Occupational Health, and Management of Health Services. As the listening skill is not part of these students' syllabus, the testlet of listening was omitted from the battery. Of course, the test battery was proved to be valid and reliable without the listening testlet. 2. The data gleaned on the placement test was given to SPSS20 and percentiles

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were used to divide the students into three ability groups: one +intermediate (Group A) and two –intermediate groups (Groups B & C). At first, the test of inequality was performed for Group A with Groups B and C and also between Groups B and C. 3. Then, two protocols were designed for the groups as the following: for Group A, 90% of the classroom interactions were in English as they had higher levels of language ability and participated in more English classes before university. In the second protocol used for Groups B and C, the medium of instruction and interaction was more dominantly Persian. Some pedagogic power point slides were also prepared and used to promote the grammatical knowledge of students in Group A. Moreover, some synonyms, antonyms, and English definitions of terms were given to Group A. Besides, some points on reading comprehension strategies were presented to the students in Group A. If this protocol was used for the other two groups, it would demotivate them as they enjoyed a low level of language ability. The primary teaching material was "Basic English for Medical and Paramedical Students by Mozayyan and Barzegar [16]. 4. These protocols continued to be used until the midterm exam, which was designed in two forms: Form 1 and Form 2. This test battery included three components: vocabulary, grammar, and reading comprehension. The test had face and content validity as it was based on a table of specifications, and its reliability was estimated to be 0.76. Since the placement test, according to Brown's (17) classification and Richards & Schmidt (18) definition, is rendered as an NRT, and the midterm exam is a CRT, so, they will have different indices. Reliability in CRTs is interpreted as an agreement index. The midterm exam was given, and the data were collected and analyzed with SPSS20 using descriptive statistics, i.e., frequency, percentiles, mean, and standard deviation and also inferential statistics, i.e., one-way ANOVA, Levene statistic, Tukey HSD, and independent T-test (P=0.05).

Results

The participants of the present study were 71 junior students of Shahid Sadoughi University of Medical Sciences in three different branches of Health. They were selected with a convenient sampling method in 2018. The protocols used for the three groups were approved by three experts in TEFL

To answer the first research question, i.e., *is there any significant difference among the three different majors with regard to NRT scores?* one-way ANOVA was used.

Table 1. Descriptive statistics of three groups in NRT

	N	Mean	SD	SE	Min	Max	p
1 Occupational Health	26	13.65	7.161	1.404	3	31	0.05
2 Public Health	26	13.92	6.170	1.210	6	30	
3 Management of Healthcare Services	19	19.32	7.513	1.724	8	33	
Total	71	15.27	7.247	.860	3	33	

As shown in Table 1, there are 26 students in Public Health and Occupational Health and 19 students in Management of Health Services. The range of the scores of the placement test is 0-50 (20 reading comprehension items and 30 vocabulary and grammar items). The highest mean belongs to students of Management of Health Services, and the lowest one belongs to the students of Occupational Health.

The condition of equality of variances for the three groups was tested by Levene statistic. The observed value of test significance (0.299) was higher than P-value (0.05), so, the variances were equal. The observed value of test significance was less than 0.015; hence, there was a statistically significant difference between the three groups.

The pairwise comparisons among the groups in the post hoc test indicated that there was no significant difference between Occupational Health and Public Health since the level of significance was greater than 0.05. Nonetheless, there was a significant difference between Occupational Health

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and Management of Health Services, and between Public Health and Management of Health Services.

To answer the second question, i.e., *is there any significant difference among the three different majors with regard to CRT scores?* one-way ANOVA was applied.

Table 2. Descriptive statistics of the CRT scores of the three groups using One-way ANOVA

	Total Score Mid								
					95% CI for Mean				
	N	Mean	SD	SE	Lower Bound	Upper Bound	Min	Max	p
1 Occupational Health	25	29.44	5.508	1.102	27.17	31.71	20	45	
2 Public Health	27	31.11	5.820	1.120	28.81	33.41	18	40	0.05
3 Management of Healthcare Services	17	29.65	6.264	1.519	26.43	32.87	19	41	
Total	69	30.14	5.789	.697	28.75	31.54	18	45	

One-way ANOVA was used to represent the descriptive statistics of the three majors of the students showing that the range of the scores of the placement test was 0-50 (20 reading comprehension items and 30 vocabulary and grammar items). The highest mean belonged to students of Public Health, and the lowest one belonged to the students of Occupational Health. Again, the condition of equality of variances for the three groups was tested by Levene statistic. The observed value of test significance (0.347) was greater than 0.05; hence, the variances of the groups under study were equal. Also, the observed value of test significance (0.542) was greater than 0.05. Hence, there was no statistically significant difference between the three groups. Moreover, the pairwise comparisons of the groups in the post hoc tests demonstrated no significant difference among the three groups since the level of significance was greater than 0.05.

To answer the third question, *i.e., is there any significant difference among the three NRT forms (Forms A, B, & C)*? One-way ANOVA was again used.

One-way ANOVA gave the descriptive statistics of the three Placement Test Forms. The condition of equality of variances for the three groups was tested by Levene statistic. As the observed value of test significance (0.717) was greater than 0.05, so, the variances of the groups under study were equal.

The results of ANOVA indicated that there was no significant difference between the means of the three forms since the significance value observed (0.659) was greater than 0.05. The pair-wise comparisons of the three forms in the post hoc test suggested no significant difference among the three groups since the level of significance observed was greater than 0.05.

To answer the fourth question, i.e., *is there any significant difference among the two CRT forms (Forms A & B)?* independent T-test was performed. The results of the independent T-test revealed that the students who took Form A and those who took Form B had equal variances since the observed Levene statistic value was greater than 0.05. However, there was a significant difference in the means of the two forms since the T-test significance value observed was smaller than 0.05.

Finally, to survey the last research question, i.e., *is there any significant difference between different levels of Language ability concerning NRT and CRT?* one-way ANOVA was again applied.

The students absent in the midterm exam were rendered as lost data and excluded from data analysis. Again, the condition of equality of variances for the three groups was tested by Levene statistic. The observed value of test significance was greater than 0.05, hence, the variances of the groups under study were equal for both placement test and midterm exam. ANOVA indicated a statistically significant difference among the means of the three groups in the placement test as an NRT and the midterm exam as a CRT since the observed significance value of the test (0.000) was smaller than 0.05.

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Regarding the placement test, the significance indices of Tucky post hoc test demonstrated that there was a significant difference between group A, on the one hand, and groups B and C, on the other. However, there was no significant difference between groups B and C. In the second part of the post hoc test, the findings showed that for the midterm exam, there was a significant difference between Group A, on the one hand, and Group B and Group C, on the other, while there was no significant difference between groups B and C, indicating the success of the present study.

Discussion

Iranian students of health need to bone up on their academic English to be able to read the English sources of health as a factor contributing to community health promotion. In the Iranian academia, students are placed in Basic and General English courses not on the basis of proficiency levels, but on the basis of their academic majors with the same protocol, teaching materials, and methodology used for these heterogeneous classrooms leading to failure and dissatisfaction in the use of academic English as a vehicle for increasing their knowledge of community health. This was the first endeavor that focused on grouping Basic and EGP university classes based on the results of a placement test used to homogenize university students in academic English proficiency. Hence, there were no previous works with which to compare and contrast our findings.

Our findings suggested that the students should be grouped based on their language ability level, not on the basis of their academic major. Each class will be taught with a protocol specific to that level. In this respect, the key points of the study are the proficiency level of the learners and the relationship between NRTs and CRTs.

Considering the proficiency level and the effect of the homogenization on the effectiveness of learning and teaching, the following points are note-worthy mentioning the findings of the stated studies and the present one.

1.If learners are homogenized in a pre-university course, they can learn the educational materials based on their exact needs and the experience of the learning is more enjoyable. If it is accepted that meaningful learning is long-lasting; therefore, learning is meaningful when the educational materials levels and the proficiency level of the learners are the same. When a person cannot understand a simple question like “what is your name?” how is it possible to understand the meaning of “gastroscopy”.

2.When learners are homogenized, then there are different teaching protocols. In each protocol that is set based on the specified proficiency levels, a well-defined set of materials according to the proficiency level is presented. The weaker students are expected to learn the alphabets and sounds while the stronger learners are required to read the text and present a summary.

3.The similarity between and among all the proposed and present study is allocated to the different nature of English acquisition. Learners come to university with different backgrounds. It is not fair to place a learner who does not know A, B, C and the other one who is a fluent speaker since he passed 24 terms in a language institute.

Other scholars have worked on the association between learner variables and other variables. Chen, Chen, & Kim (19) compared various equating methods by the use of two parallel or alternative tests. Nonetheless, this study has scrutinized the robustness of different linking methods used between the CRT and the NRT. They explored the psychometric adequacy and potential educational merits for linking CRT and NRT to detect whether both CRT and NRT information may be gained via the administration of only the CRT. The performance of three different linking methods, Concurrent Calibration (CC), Fixed Common Item Parameter (FCIP), and Mean/Sigma Linking (MSL), were compared between a state CRT and a commercially available NRT. They found that the FCIP method yielded better results than the other two methods.

Wen & Jonson (6) concentrated on the relationships between learner variables and

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proficiency achievement. They found that six factors produced direct effects on English achievement. Three characteristics existed before the students' enrolment to tertiary education including sex, and first language and second language proficiency as measured in the matriculation examinations while the other three variables were substantiated by categories of strategies on vocabulary acquisition. The only negative direct effect was ambiguity tolerance. First, language avoidance management strategies had the most substantial indirect effect on English achievement. Finally, the direct effects of belief variables on strategy variables were found to be strong and consistent.

In another study, Ortega (11) assessed the cumulative evidence concerning the application of syntactic complexity measures as coefficients of college-level second language writers' general proficiency in the target language. Applying a synthesis of twenty-five works, they realized that first, the relationship between second language proficiency and second language writing syntactic complexity differed systematically across studies noting whether a second or a foreign language learning context was probed and whether proficiency was defined by program level or by holistic rating. Second, they found critical magnitudes for between-proficiency disparities in syntactic complexity for four measures by combining available cross-sectional results.

Iwashita (9) focused on the nature of speaking proficiency in English as an L2 in the context of a larger-scale study to develop a rating scale for a new international test of English for Academic Purposes, TOEFL iBT (17). On a large-scale, the correlation between detailed features of the spoken language produced by testees and holistic scores obtained by raters to these performances was reported. On the whole, the study gives valuable insights into the nature of spoken proficiency as it progresses and recommends practical implications for methodological issues of the appropriateness of the use in language testing research of measures developed in research on L2 acquisition.

Finally, Al Ghatani (12) worked on the second language requests in developmental pragmatics research which are frequently surveyed by the use of non-interactive data collection techniques. They used a different approach to the study of second language requests speech acts and reported that lower-level learners were less liable to project the upcoming request and lay the groundwork for it by finding out the interlocutor availability and providing accounts.

4.There are some facts and predictions on the relationship between CRTs and NRTs. Presumably, according to the scores of NRTs, especially in the case of English using some placement tests or standardized tests like TOEFL or IELTS, the results of the CRTs can be predicted. Even in this regard, through concurrent or predictive validity, the scores of CRTs can be predicted or accredited by the mentioned analyses. If the relationship between NRTs in our context such as Entrance exam percentage, and the score of the placement test are considered, and then the learners are homogenized based on these scores and taught with different teaching protocols, not only are the outcomes better, but the pleasures of learning and teaching are obtainable.

Conclusion

We concluded that grouping students based on their language ability levels instead of their academic major leads to the application of a specific protocol for each level of homogenous students. This would result in the greater success of our pedagogic programs of English teaching and learning. By generalizing the findings of this study to other universities in Iran and other parts of the globe, some problems of English teaching and learning could be resolved. The upper hand objectives of this study could be objectified if the findings are reported in the national and international journals. One problem that exists, nonetheless, is the opposition, reluctance, or hesitations of the lagging teachers who are against any innovation in language pedagogy.

Another problem is the opposition of university policy-makers, syllabus designers, and curriculum developers due to physical, administrative, or personnel limitations. Finally, it should be

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emphasized that this procedure is particularly useful for essential majors, including medicine, dentistry, and pharmacy in medical universities. Presently, in addition to different majors of Health, it was approved by the Educational Council of our university to group the students of medicine, dentistry, and pharmacy as three linguistically homogenous groups of -intermediate, intermediate, and +intermediate groups each consisting of the three majors of medicine, dentistry, and pharmacy.

Conflict of Interests

The authors declare no conflict of interests.

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