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The Role of The Correct Use of Scientific Language and Scientific Researches in Improving the English Language In Universities. The Relationship between English Learning and Research Writing

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Abstract

In several previous researches, the focus was on creating greater opportunities for student mobility and producing the use of the English language through practiced activities. We studied a mobility program which was developed for several schools of different countries in Albania. This program focused on developing a more competitive higher education by integrating the Adriatic school system. Statistically, we showed how the program achieved its goal through exposure to different cultures, languages, and curricula, with great effect in terms of intercultural competences and newly acquired skills. In particular, we focused on language acquisition, as well as the intercultural experiences.
Similarly, this paper addresses the correct use of scientific English as a framework for the development of new skills, opportunities and pathways to be followed in university studies according to which the student's challenge is practical. Our work shows how students from different levels can improve upon scientific language by practicing ongoing interactions with each other.
The results of our research show that in order to achieve these goals, a university's primary focus should be the development of students' academic mobility, the learning and using of the scientific English language, and the development of research writing [2]. In our research, we kept statistics to compare the results of the achievement and approximate the results achieved with those predicted. Finally, we show them statistically and lay out the conclusions.

Key words: *integrate systems, language learning, curricula, academic mobility, research writing*

1. Introduction

For several years, only valuable things have created a tradition that will continue to create a valuable work. It was this idea that created the possibility of a mobility program some years ago in high education schools of Adriatic Sea countries. The joint program has developed for four months in some experimental classes of three high schools in Albania. Students from six countries like Italy, Slovenia, Croatia, Bosnia Herzegovina, Monte Negro and Albania took part. This program was implemented to lay the foundations for a unique educational program and for other mobility programs. The program aimed to create an international educational experience, as well as a premise for other mobility programs to transmit knowledge and culture.
We analyze steps of improving students' skills toward international collaboration [1]. We see how a mobility program create the potential to extend to a more comprehensive mutual recognition of schools, offering intercultural and multilingual experiences, capable of improve their English language.
For the purpose of our study, we deal with English language acquisition [9], as well as the learning of new skills. This experience created the opportunity to see achievements in several directions. From the system data, we concluded statistically based on the following questions.
- How did the students participating in the program improve their English language?
- How did the students gain knowledge and new skills about the cultures of the participating countries?
At the end of the program, a scientific commitee tested the students through a questionnaire and very satisfactory results were achieved, expected in accordance with the purpose of the program. From the system data, a sample of the results of 20 students is taken at random. Compared to the results at the beginning of the program, the results of this sample showed that 16 students had a significant improvement in English, i.e. 80% of the students.

Based on the experience, something similar was implemented in our university. This research is guided by the principle of correct use of the scientific language in English. The coordination of lecturer-student work leads us to the following questions: How can lecturers teach their students the correct use of scientific language [7]? How much and how will students be able to use the English language perfectly in the classroom, in practice and in research? The exploration of the above questions leads to the content of our article and leads to the question: What would be the ways of coordination to achieve this goal?

The purpose of the present study was to investigate whether or not the students have visible improvements related to their growth in English vocabulary knowledge and comprehension, taking into account contextual factors that serve as barriers to independent scientific reading and wrting [5]. The internationalization of educational programs [1] involves attracting and training students from outside the borders of nation states; elaboration and implementation of academic mobility programs for teachers and students; organization of scientific and academic events, where the exchange of good practices takes place [6].

Some of our practical course focuses on mastering the research articles [3], but while the lecture so doing, the lecturer also teaches students to edit each other's work and to learn from this as well as from editing of their scientific and English writing. We implement some methods to specify the results [2]. For this purpose we used computerized scientific management programs.

Language acquisition can thus be seen as a type of skill acquisition, using similar mechanisms to those involved in learning in front of white boards, in labs, in auditors, in workshops and the need to acquire knowledge of the abstract structure of language is dissolved based on learn menagement philosophy [5].

The process of our research is stimulated by the requirements of the competitive conditions in the educational environment [7]. The analysis of strategies aimed at improving the level of foreign language proficiency of all participants, motivation, methodology of applicants, research, academic mobility programs and international research projects are the prospects for further research.

2. The procedure of scientific English literacy development

2.1 Independent reading related to the growth of students' scientific vocabulary

The students of our study are not native English-speaking students. Twenty students participated in the experimental class of a selected subject course.

Our experimental research started 3 weeks before the beginning of the academic year. During this preparatory phase, which is the first stage of our research 20 students of the experimental class were asked to read and write as many scientific topics as possible that were previously sent by the lecturer during the study period. This was an obligation for this experimental class. The students in the other two classes of the same course were asked to read as much as possible during the study period. The amount of reading that students engaged in was up to them. Our study determined whether independent reading was related to students's growth in scientific reading comprehension and vocabulary knowledge [2]. The following questions guided our research of English literacy. See the table as follows.

Table 1. Demographic table for English literacy

Nr.	questions guided our research	Experimental class 1	Class 2	Class 3
1	Did the students have adequate access to lectures?	100%	100%	100%
2	Did the students engage in independent reading?	95%	72%	60%
3	Did scientific reading relate to growth in comprehension?	80%	68%	56%
3	Correct scientific expressions used	84%	68%	58%

We used the computerized management programs for the evaluation of results as shown in the data table above. For the point 3 in the table we have created a quiz to check the growth of knowledge and understanding of the scientific English language. For each student's quiz taken, the software recorded (1) number of questions answered correctly and (2) the difficulty level. Our program uses different quizzes, so data of the table were analyzed by number of quizes taken. As we concluded after analysing the results obtained, by reading the data that was collected we concluded that the experimental class got better results.

2.2 Scientific vocabulary used by students

In the second stage of our research, the first 4 weeks of the academic year, our experimental research continued for all three classes. We made the lectures possible in three different ways:
1. The experimental class received the lectures in classroom by implementing the lesson with a video projector and notes on the white board. All students took notes by correctly implementing each scientific term in the English language.
2. The second class received the lectures only with a video projector in the classroom.
3. The third class received the lectures only with online video presentation implementing the Hy-Flex system. A Hy-Flex class makes class meetings and materials available so that students can access them online.
After four weeks, we tested the students of the three classes. To estimate students's English vocabulary, data on the exact answers of questions were collected. The questionnaire was based on (1) receptive vocabulary, (2) expressive vocabulary, (3) correct vocabulary and correct scientific expressions used and (4) correct expressions of mathematical formulations.
The following questions guided our research of scientific English vocabulary. See the table as follows.

Table 2. Demographic table for scientific English vocabulary improvement

Nr.	questions guided our research	Experimental class 1	Class 2	Class 3
1	Receptive vocabulary	80%	66%	65%
2	Expressive vocabulary	88%	72%	64%
3	Correct scientific expressions used	88%	72%	68%
4	Correct expressions of mathematical formulations	86%	68%	66%

Students were required initially cycle the exact solution as the first part of questionnaire quiz. This part of the questionnaire deals with the first 2 questions in the table. The task was discontinued once student made threee consecutive errors. The scores and percentile scores were calculated for each student.
The second part of the questionnaire quiz deals with the last 2 questions in the table. In this task, students were given a list of scientific expressions and expressions of mathematical formulations, both out of context asked to write exactly as many as they can. The scores and percentile scores were calculated for each students. We used the computerized management programs for the evaluation of results. As can be seen again, the class with the best results was again the experimental class.

3. Practicing English language in laboratories and student's research

Introducing interests in the development of language skills in science education, the work as a scientific language support has given the opportunity to witness some challenges and how to use the Language of a lab report [8]. Introducing some of the issues related to practice language instruction to the students, we created the questionnaire for the students of each class. These academic questions of a science lab report require careful use of language to communicate. We are prepared to analyze and teach the language functions required in a science lab report.
For about six weeks, in the third stage of our research we give students the posibility to extend their research. Students are expected to design their own experiments with increasing competence. In order to reach the highest levels of academic achievement, students are expected to explain scientific ideas, using correct scientific reasoning, interpreting data and finding out the conclusions.
The students of the experimental class participated in the scientific project that we had in our department. This class was at every moment in practical contact with the instructor. We feel confident to teach the scientific language and using it in research. By exact scientific language structures we mean the specific features of academic language used for specific purposes, like explanation, hypothesis, procedure, and analysis [4]. For this class we used teaching and learning strategies related to language in science that could help their students communicate scientific ideas with lscientific language.
The students of the other two classes worked on the research topic independently, but still under the guidance of the lecturer and could also use the laboratory at any time. It was clear that the students' writing was not achieving the desired goals. Working together, not independently they could do that.

Table 3. Demographic table for students research project

Nr.	questions guided our research	Experimental class 1	Class 2	Class 3
1	Receptive vocabulary	84%	68%	70%
2	Expressive vocabulary	88%	74%	66%
3	Correct scientific expressions used	90%	80%	74%
4	Correct expressions of mathematical formulations	90%	76%	72%

4. Expectations for scientific reports

Our research requires following the ways to achieve the objectives regarding the correct use of scientific English language. According to these expectations, students must use correct scientific language in their research. They have to formulate the problem correctly, they have to use the correct formulations using scientific reading and writing as well as collecting and processing data in the right way. Everything must be presented with scientific reasoning [3]. Finally, the methods used in the scientific language should be analyzed to achieve the predicted expectation. These expectations represent a variety of structures in scientific English. The language data is then analyzed for successes, errors and improvements. We present them in the following tables. Table 4 presents the results as a function of English language subgroup. Table 5 presents the means and standard deviations for the English language as a function of all stages of research.

Table 4. Demographic table for the results as a function of English language subgroup

Nr.			Class 1	Class 2	Class 3
1	Questionnaires taken	***M*** (arithmetic mean) ***SD*** (standart deviation)	98.1 (88.4)	88.02 (68.3)	88.62 (68.9)
2	Avg % correct	***M*** (arithmetic mean) ***SD*** (standart deviation)	88.8 (22.1)	70.2 (15.2)	66.6 (14.1)
3	Avg class level	***M*** (arithmetic mean) ***SD*** (standart deviation)	8.8 (2.1)	7.01 (1.6)	6.4 (1.4)
4	Points earned	***M*** (arithmetic mean) ***SD*** (standart deviation)	56.6 (90.1)	44.2 (76.2)	40.1 (68.1)

Table 5. Growth comparisons for all stages of research as a function

Nr.			Class 1	Class 2	Class 3
1	Avg % correct in the first stage	***M*** (arithmetic mean) ***SD*** (standart deviation)	86.33 (23.8)	69.33 (15.1)	58.02 (12.9)
2	Avg % correct in the second stage	***M*** (arithmetic mean) ***SD*** (standart deviation)	85.5 (22.1)	69.5 (15.2)	65.8 (14.1)
3	Avg % correct in the third stage	***M*** (arithmetic mean) ***SD*** (standart deviation)	88.1 (25.1)	74.8 (20.6)	70.1 (18.4)
5	Avg **total** % correct of research	***M*** (arithmetic mean) ***SD*** (standart deviation)	86.64 23.66	71.21 16.96	64.64 15.13

Table 6. Demographic table for the results as a function of scientific English language

Nr.		Experimental class 1	Class 2	Class 3
1	***M*** (Arithmetic mean)	86.6	71.2	64.6
2	***SD*** (Standart deviation)	(23.7)	(17.0)	(15.1)

Table 6 presents the average number as a function of scientific language.
Based on the tables 5 and 6, our computerized program revealed a significant main effect of scientific English language. There were significant differences in the average percentage correct on English language of three classes. Also, there was a statistically significant difference in the average class level and total number of points earned.

5. Conclusions

Our research was based on the challenges students face in using scientific language correctly and the complexity of the language structures of scientific writing. Our article actually helps students understand how important it is to write precisely in the scientific structures of the English language. Furthermore, our subtopics of this research convince the students of the need to teaching scientific language in science subjects in some different ways.
The results of our research can contribute to the deepening of students' scientific knowledge and understanding, correcting the teaching of scientific language at any time. Combining classroom learning with practical scientific work in the laboratory, as well as with scientific research, can be a powerful combination to support student achievement in the correct use of scientific language.
Our research indicates that scientific science lecturers and the English lecturers are teaching students how to write exactly in the subjects of science. It is clear that language in scientific subjects is complex and unique. This shows how important it is for lecturers to feel prepared for this task. Some of the following writing instruction strategies: editing, revising, emulating good models, and combining sentences are very important.
We have introduced the importance of practical interactions and the readiness that science lectures have to use scientific English correctly in classrooms, laboratories and projects. Based on the students' expectations, we have proposed some questions to guide our research. After the obtained results, we have written a scientific report based on tabular results.
With the data we collected and the statistics we formed, we realized how different scientific English is from everyday language. We aim to provide methods for building stable structures of scientific language in a relationship of scientific activity, teaching practice as well as classroom teaching.
Our article shows that for the correct use of English in university science departments, the main focus should be the learning and use of scientific English, the correct use of research writing, and the practice of interactions.

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