Towards a Project-based Approach to ESP Teaching and Learning. The case of Graduate Students of the Department of Mathematics at Abbess Laghrour University, Algeria

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Abstract

The English language has indulged itself within the Algerian educational system among its tertiary-level institutions and has gained a prominent place not only in EFL classes, but also in other fields of study ,namely, economics, law, technology, science, human science, engineering, and so many others. Students in these departments are exposed to English courses i.e., English for specific purpose courses which are supposed to be aligned along with their needs, serve the communicative objective and equip students with the working skills. However, graduate students in the Department of Mathematics at Abbess Laghrour University find that ESP courses do not match the professional needs they face after graduation. This paper attempts to explore graduate students' attitudes towards ESP courses and to investigate the challenges ESP teachers encounter. This study proposes the integration of the project-based approach to overcome challenges faced by ESP teachers and students as well as prepare this later to acquire the necessary competencies under the umbrella of learner-centeredness. To fulfill this paper's objective, a descriptive study is conducted. Qualitative data are gathered by the means of a questionnaire distributed to a sample of 20 graduate students and 5 teachers of English in the Department of Mathematics. The findings show that project-based approach is indeed a better way of bridging the gap between theory and practice and a vital means for helping learners' to fulfill their potential inside and outside the university's setting.

Keywords: English for a specific purpose; Project-based approach.

لخص

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ان اللغة الإنجليزية انغمست داخل النظام التعليمي الجزائري خاصة في مؤسسات التعليم العالي، واكتسبت مكانة بارزة، ليس فقط في تدريس اللغة الإنجليزية كلغة أجنبية، ولكن أيضاً في مجالات الدراسة الأخرى وهي: الاقتصاد، القانون، التكنولوجيا، العلوم، العلوم الإنسانية، الهندسة، وغيرها حيث يتعرض الطلاب في هذه الأقسام لدورات اللغة الإنجليزية المتخصصة لغرض معين والتي من المفترض أن تكون متوافقة مع احتياجاتهم، وان تخدم الهدف التواصلي وتزود الطلاب بمهارات العمل. ومع ذلك، يجد طلاب الدراسات العليا في قسم الرياضيات في جامعة عباس لغرور أن دورات الإنجليزية لأهداف خاصة لا نتتاسب مع الاحتياجات المهنية التي يواجهونها بعد التخرج. يحاول هذا البحث الى استكشاف نظرة الطلبة الجامعيين تجاه دورات الإنجليزية لأهداف خاصة واستكشاف التحديات التي يواجهها الاساتذة في ميدان التدريس. ولهذا الغرض تقترح هذه الدراسة الى استخدام النهج القائم على المشاريع للتغلب على التحديات التي يواجهها المعلمون والطلاب وكذلك إعداد الطلبة لاكتساب الكفاءات اللزمة في سوق العمل. بغية الوصول الى الهدف المنشود نقوم بإجراء دراسة وصفية حيث تم جمع البيانات النوعية عن طريق استبيان وزع على عينة تتكون من 20 طالب دراسات عليا و 5 مدرسين للغة الإنجليزية في قسم الرياضيات. تبين النتائج أن النهج القائم على المشاريع هو بالفعل طريقة أفضل لسد الفجوة بين النظري والتطبيق وكذلك وجد انه وسيلة حيوية لمساعدة المتعلمين على تحقيق إمكاناتهم داخل وخارج بيئة الجامعة. الكلمات المفتاح: الإنجليزية لأهداف خاصة؛ النهج القائم على المشاريع.

I- Introduction

Today, the English language presents a vital requirement for personal, national and international development. Like other countries of the world, the Algerian government gave the English language the status of the ambassador in its educational institutions. At the university level, students tend to choose the domain of study that would serve their personal and professional objectives. Whatever the choice is, learners are presented with an ESP course, which would supply them with knowledge in the English language that fits the tackled discipline of study. Hutchinson et al. (1987) define ESP as "an approach to language teaching which aims to meet the needs of particular learners."(p.21). Within this scope, a needs analysis should be done to label what students require from studying English. Traditional trends in ESP teaching have generally focused on the accumulation of language information related to vocabulary and grammar, neglecting the demand for developing communication skills and competencies (Mamakou & Grigoriandou, 2011). Nationwide, different ESP courses are provided under different labels such as EST 'English for Science and Technology', EBE 'English for Business and Economics', and ESS 'English for Social Sciences'.

المنسل تشارات

With the spread of teaching English across the Algerian universities, the demand was beyond the supply. Teachers of general English and part-time teachers are asked to provide ESP courses to cover the situation. However, this is not an easy task to do, instead, it is hard to cope with as it was stated by Strevens (1988). Teachers find themselves swinging between the course content and the learner's needs. To make a balance, an integrative pedagogical approach that entails a project-based instruction could be the best way to deliver the intended aims of the ESP course (Guo & Yang, 2012).

An increasing interest in PBL and its integration into ESP instruction attracts researchers worldwide (Borza, 2013). Actually, this approach is particularly effective in English for specific purposes. ESP contexts, due to its undeniable characteristics which are enumerated by different researchers; for instance, Stoller (2006) and Ushioda (2010), as follows: PBL lend itself to (i) authentic language use, (ii) focus on language at the discourse rather than the sentence level, (iii) authentic tasks, (iv) learner -centeredness, and (v) purposeful language use.

The ultimate aim of learning any language is to fulfill communicative purposes, which became a worldwide concern. Algerian authorities implemented the use of English in different departments, and this is incarnated through teaching ESP courses to meet the learners' academic and occupational goals. However, graduate students of the Department of Mathematics in Abbes Laghrour University –Khenchela find that ESP courses did not help them to achieve the previously mentioned goals because of the inadequate teaching method followed by the teachers. Hence, in the light of what has been said earlier, teachers have to adopt project-based learning so that to help their learners reach the underlined objectives.

Aims of the Study

This study handles coupled aims: first, exploring the reasons beyond the graduates of the department of mathematics dissatisfaction of the ESP courses and the second offering a theoretical ground for undertaking a project-based approach towards teaching English for specific purposes.

Research Questions

- 1/ What is the graduate students' attitude towards ESP courses?
- 2/ How do students perceive project-based learning in referring to the communication skills needed for their work?
- 3/What are the challenges that English teachers face in teaching ESP?

Research Hypotheses

The researcher steers this study by the following hypotheses:

- 1. Graduate students in the department of mathematics are aware of the importance of English in the business market.
- 2. Inadequate teaching methods adopted by teachers who are general English teachers and not ESP teachers are the major reason that lies behind the students' dissatisfaction with their level.
- 3. The project-based learning can help students elevate their level.

I.1.Literature Review

English for Specific Purposes in the Algerian Setting

Nowadays English is viewed as the "language of communication" glued to the varying disciplines in educational institutions all over the world. Algeria shares the same concerns as the rest of the globe by giving importance to English in education EFL teaching in Algeria is edged into two parts; vocational and professional. The latter came to be known as ESP which is traced back to the 1960s' (Hutchinson &Waters, 1987) as a result of economic globalization that called for linguistic internationalized innovations as Waters (1987) puts it:

"But as English became the accepted language of technology and commerce, it created a new generation of learners who knew specifically why they were learning a language - businessman and - women who wanted to sell their products, mechanics who had to read instruction manuals, doctors who needed to keep up with developments in their field and a whole range of students whose



course of study included textbooks and journals only available in English."(p.6)

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In the Algerian higher educational institutions, the most commonly used mediums of instruction are Arabic and French; within this context, learners come to meet English only in the classroom where it is used as a subject.

Definition of ESP

The term ESP cannot be fully defined because it is too broad and complicated as it has been stated by Stapa (2003). In a broader sense, ESP is an approach confined by learners' reasons for learning (Hutchinson &Waters, 1987). In another definition provided by Dudley-Evans &St. Johns (1998), ESP is known by absolute characteristics and variable characteristics: ESP is meant to meet the specific needs of the learner; it makes use of the underlying methodology and activities of the discipline it serves; ESP is related in content (i.e. in its themes and topics) to particular disciplines, occupations, and activities; it is centered on the language (grammar, lexis, register) skills, discourse, and genres appropriate to these activities. Referring to Variable characteristics; ESP may be related to or designed for specific disciplines; ESP is likely to be designed for adult learners, either at a tertiary level institution or in professional work.

Types of ESP

In a traditional division of ESP provided by Hutchinson and Waters (1987), ESP is subdivided into two main types; English for Academic Purposes (EAP) and English for Occupational Purposes (EOP)

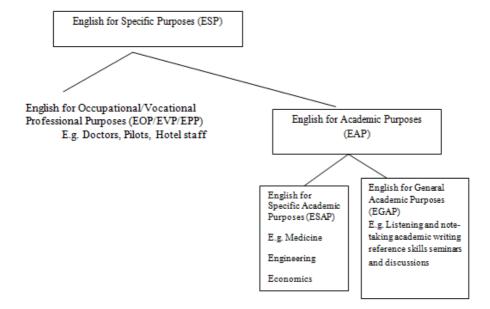


Figure (1): Jordan's Model for the Categories of ESP

ESP VS GENERAL ENGLISH

Hutchinson et al (1987) draw the distinction between General English and English for Specific Purposes. They state that "What distinguishes ESP from General English is not the existence of a need as such but rather an awareness of the need". In this scope, the defining factor that differentiates General English from ESP is the learning needs; i.e, whenever teachers are aware of their learners' needs, they are categorized as ESP teachers, if not they are regarded as General English teachers. However, this distinction does not constitute the only area of difference. Hamp-Lyons (2001) states that in addition to specific learners' needs, ESP differs from GE in three main areas, as shown in the following table:



Table (1) ESP and GE differences

ESP	GE
A learner-centered approach	Concerned with language features especially grammar
Depends on the learner' needs	Genres of language are conversational and social
Genres of language are formal and academic	5 · · · · · · · · · · · · · · · · · · ·

Incorporating Project Work in the ESP Classroom

With the advent of globalization and information technology, the importance of English as a language has tremendously increased and became no longer restricted to some sections rather than the other. To address the learners' needs, teaching witnessed a notable paradigm shift in the methods implemented. As a result of this shift, teachers relinquished the absolute authority in the classroom by establishing a partnership with their students; project-based learning came to make the classroom vivid and challenging to help learners imbibe 21st-century skills.

According to Mamakou & Grigoriadou (2011) traditional teaching of ESP has generally focused on the delivery of language information through reading comprehension, writing, and vocabulary and grammar exercises but has neglected the need to incorporate it with skills. However, they believe that these skills could be ingrained and promoted through introducing an integrative, dynamic pedagogical approach which is referred to as project-based learning (PBL) (Guo & Yang, 2012) in the light of learner-centeredness, ESP instructors have oriented their interest towards involving learners in PBL activities and team-work (Noom-ura,2013). A PBL approach enables students to develop and improve their language fluency and accuracy, and at the same time build personal qualities and skills such as self-confidence, problem solving, decision-making, and collaboration (Fried-Booth & Diana, 2002; Beckett & Slater, 2005; Little, 2009). Various definitions of PBL have been provided by scholars and researchers. Thomas (2010) views PBL as a teaching model organized through projects which are complex, challenging questions or problems that involve learners in designing, problem-solving, decision-making, and/or investigative activities, that give them opportunities to work relatively autonomously that is knowing and doing.

Stoller (2006) sheds the light on the defining characteristics of PBL: (1) having both a process and product; (2) giving students (partial) ownership of the project; (3) extended over a period of time (several days, weeks, or months); (4) integrating skills; (5) developing student understanding of a topic through the integration of language and content; (6) students both collaborating with others and working on their own; (7) holding students responsible for their own learning through the gathering, processing, and reporting of information gathered from target-language resources; (8) assigning new roles and responsibilities to both students and teacher; (9) providing a tangible final product; and (10) reflecting on both the process and the product.

II-Methods and Instruments

The descriptive study is opted for by means of two questionnaires administered to five (05) ESP teachers and twenty (20) graduate students. The questionnaire was chosen as the data collection instrument used in this study because it has the facility of gaining information in a short period and generating quantifiable data to answer the research questions.

The population under investigation is 05 ESP teachers and 20 graduate students of the Department of Mathematics from Abbess Laghrour University, Khenchela. Yet, it is impossible to work with the entire population of students; a purposeful sampling technique was used to select a sample from the population. According to Lodico et al. (2010), "the goal of purposeful sampling is not to obtain a large and representative sample; the goal is to select persons, places, or things that can provide the richest and most detailed information to help us answer our research questions" .Thus the researcher has selected a sample of 20 graduates working in Sonatrach Company in Hassi Messaoud besides five ESP teachers working in the Department of Mathematics at Abbes Laghrour University.

The students' questionnaire is made up of two sections, the first allotted to the background information of the participants, whereas the second section is devoted to information about students'



attitudes towards learning English and the importance of PBL.On the other hand, teachers' questionnaire is divided into two sections; the first explores background information and the second investigates teachers' views on PBL and the challenges they face in teaching ESP.

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Before administering the questionnaire, the researcher piloted it with two colleagues and four graduate students from the targeted department so that to check out if there were any misunderstandings, ambiguities or inappropriateness in the questionnaire. Some comments were shared and have been considered.

III- Analysis and Discussion Students' Questionnaire

Section One: Background Information

The questionnaire gave the following results:

Table (2): Descriptive Statistics of the Respondents

Yes	ars	01	02	03	04	05	06	07
Experience	N=20	00	00	7	6	4	2	1
	Percentages	00%	00%	35 %	30 %	20 %	10 %	5 %
Years of	N=20	6	14	00	00	00	00	00
studying ESP	Percentages	30 %	70 %	00%	00%	00%	00%	00%

The obtained results show that the majority of employers are newly graduated which suggests that they still remember ESP courses they learned. Besides, it is noted in the table above that they had been taught ESP for no more than two years, which is considered a very short period to learn English and be able to use it in careers.

Section Two: students' attitude towards ESP

Item 01: What is the content of the English subject that you have received during the academic years?

Table (3) the Content of the ESP Courses

ESP Content	Grammar & Vocabulary	Domain related information	General Culture
N=20	07	00	13
Percentages	35 %	00 %	65 %

From the findings demonstrated in Table 3, we can see that the content of the ESP courses is almost a general culture (65%) that is not linked to the domain of study and which does not serve workers' needs.

Item 2: How do you perceive your level in English?

Table (4): Employers' Perceptions of their Level in English

Employers'Level	Poor	Average	Good	Very Good	Excellent
N=20	07	07	04	00	02
Percentages	35 %	35 %	20 %	00 %	10 %

According to the results shown in this table, most of the workers (70%) rank their level in English as poor and average and this can be traced back to the content of the ESP course shown in Table 01

Item 3: What are the difficulties that you encounter in your job which are related to English?

Table (5): English Related Difficulties Faced by the Employees

Difficulties related	Communication	understanding	Reading and writing
to English			
N=20	12	06	02
Percentages	60 %	30 %	10 %



The majority of workers (60%) faced difficulty in communication with native and non-native speakers of English, whereas (40%) of them confront difficulty in understanding written English such as names of machines and the accompanying guidelines

Item 4: Do you find ESP courses beneficial for your work?

Table (6): Students' Attitude towards Learning ESP

Do you find ESP courses beneficial for	Yes	No
your work?		
N=20	03	17
Percentages	15 %	85 %

It is highlighted in Table 6 that employers (85%) did not benefit from ESP courses they were exposed to in the university.

Item 5: Do you think that the ESP teaching method affected your level in English?

Table (7): Students' Views of the ESP Teaching Method

Do you think that the ESP teaching method affected your level in English?	Yes	No
N=20	16	04
Percentages	80 %	20 %

The results of Table 7 explain the results of table 04 which indicates that the reason behind employers' dissatisfaction of their level in English and the difficulties they are facing is due to the methodology followed by teachers to teach ESP in the Department of Mathematics

Item 6: Do you think that PBL is the best way to teach ESP?

Table (8): Employers 'Attitudes towards PBL

Do you think that PBL is the best	Yes	No
way to teach ESP?		
N=20	14	06
Percentages	70 %	30 %

The majority of employees (70%) say that PBL is an effective instructional method to teach ESP courses. The results reflect the employers' awareness of the necessity of implementing a teaching methodology that would supply learners' with adequate employability skills

4.2.2. Teachers' questionnaire

Section One: Background Information

Table (9): *Background Information of the Participants*

Respondents (N=05)		Number	Percentages
	Part-time	03	60%
Status	Full-time	02	40%
	BA	01	20%
Academic Degree	MA	3	60%
	Ph.D.	1	20%
ECD to all in a comparison on	01-03 years	2	40%
ESP teaching experience	03-06 years	3	60%

The table reveals that 60 % of the respondents are part-time teachers and not permanent and the same percentage holds an MA degree and have to a certain extent experience in teaching ESP.

Section Two: ESP teaching from the teachers' perspective $% \left(\mathbf{r}^{\prime }\right) =\mathbf{r}^{\prime }$

Item 1: Are you an ESP teacher or General English teachers?

Table (10): Teachers' Specialty

Are you an ESP teacher or General English teachers?		GE
N=05		5
Percentage	00%	100%



It is noticed that all respondents are GE teachers which means that they are teaching ESP as an extra job.

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Item 2: Have you received any training to teach ESP?

Table (11): ESP Training

Have you received any training to teach ESP?	Yes	No
N=05	00	5
Percentage	00%	100%

The results show that teachers teaching ESP did receive no training that would illuminate and uncover the veil over how to teach ESP.

Item 3: What challenges do you face in teaching ESP?

Table (12): ESP Teaching Challenges

	*Lack of training
	*Lack of interdisciplinary knowledge
What shallonges do you face in teaching ECD?	*Insufficient time allotted to ESP courses
What challenges do you face in teaching ESP?	*absence of coordination
	*lack of a clear curriculum

Item 4: What teaching method do you undertake to teach ESP?

Table (13): Teaching Method Adopted by Teachers to Teach ESP

What teaching method do you undertake to teach ESP?	Lecture- based	Content- based	Learner- centered	Teacher- centered	Project-based
N=05	3	1	00	1	00
Percentage	60%	20%	00%	20%	00%

The method followed by most teachers teaching ESP is lecture-based (60%), depending highly on the teacher and marginalizing learners from taking part in course preparation and decision making over what seems to be important for them.

Item 5: Do you think that adopting a project-based approach to teaching ESP would help students better to take responsibility for their learning and acquire the necessary skills needed to get a job in the future?

Table (14): Teachers' Attitude towards PBL

Do you think that adopting a project-based approach to teaching ESP would help		
students better to take responsibility for their learning and acquire the necessary skills		No
needed to get a job in the future?		
N=05	4	1
Percentage	80%	20%

Table 14 elucidates that teachers find that implementing PBL in ESP classes would help them to achieve the underlined goals that would serve what learners need and achieve better results. This is to say that, GE teachers (80%) are aware of the importance of PBL in serving as a moderator to help them cope with the difficulties they face to teach ESP in the way that fits learners' needs.

IV. Conclusion

This paper aimed at shedding the light on teaching ESP in the Department of Mathematics, Abbes Laghrour University –Khenchela-From the tables and the discussion of the findings, it is clear that ESP teachers who are, in fact, GE teachers receive no training that would equip them with the necessary knowledge and skills to teach ESP. Furthermore, this study reveals that the lack of training makes teachers present their learners with information that has no link with their subject of interest which makes learners less motivated to learn it and face obstacles when they come to the professional field. ESP is an unavoidable trend in ELT and now becomes a vital element to get involved in the business world. Taking into consideration the benefits it can provide to the ESP classroom, the project-based method is a viable and conducive pedagogical approach that should be applied to surmount major challenges encountering both ESP learners and teachers. It is worth mentioning that PBL can be more effective when teachers undertake a needs analysis of the learners before initiating the teaching process.



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Appendix A Students' Questionnaire

Dear Students

This questionnaire is a part of a research work entitled" Towards a Project-based Approach to ESP Teaching and Learning. The case of Graduate Students of the Department of Mathematics at Abbess Laghrour University, Algeria. It aims at exploring the benefits of the English course for special needs and the difficulties you are facing.

The project-based approach, which is referred to as Project Based Learning, or PBL, is an instructional approach built upon learning activities and real tasks that have brought challenges for students to solve. These activities generally reflect the types of learning and work people do in the everyday world outside the classroom. PBL is generally done by groups of students working together toward a common goal.

You are kindly asked to respond to each question either by ticking the convenient box or by writing full answers where necessary.

Section One: Background Information
Job experience: years
How many years have you studied ESP at the university? Years
Section Two: students' attitude towards ESP
Item 01: What is the content of the English subject that you have received during the academic years? a. Grammar & Vocabulary b. Domain related information c. General Culture
Itam 2. Have do you noncive your level in English?
Item 2: How do you perceive your level in English? a. Poor
b. Average
c. Good
d. Very good
e. Excellent
Item 03: What are the difficulties that you encounter in your job which are related to English?
Item 4: Do you find ESP courses beneficial for your work?
b. No
Item 5: Do you think that the ESP teaching method affected your level in English? a. Yes b. No
Item 6: Do you think that PBL is the best way to teach ESP? a. Yes No



Thank you for your collaboration.

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Appendix B Teachers' Questionnaire

Dear Teachers,

This questionnaire is a part of a research work entitled" Towards a Project-based Approach to ESP Teaching and Learning. The case of Graduate Students of the Department of Mathematics at Abbess Laghrour University, Algeria. the challenges you face in the field of ESP teaching.

The project-based approach, which is referred to as Project Based Learning, or PBL, is an instructional approach built upon learning activities and real tasks that have brought challenges for students to solve. These activities generally reflect the types of learning and work people do in the everyday world outside the classroom. PBL is generally done by groups of students working together toward a common goal.

You are kindly asked to respond to each question either by ticking the convenient box or by writing full answers where necessary.

Section One: Backgroun	d Information
-Statue:	a. Part-time teacher
	b. Permanent teacher
-Degree:	a.BA
	b.MA
	d. Ph.D.
-Teaching experience:	years
	ching from the teachers' perspective teacher or General English teachers?
	a.GE b. ESP
Item 2: Have you receive	ved any training to teach ESP?
	a. Yes
	b. No
Item 3: What challenge	s do you face in teaching ESP?
Item 4: What teaching i	nethod do you undertake to teach ESP?
	a. Lecture-based
	b. Content-based
	c. Learner-centered
	d. Teacher-centered
Item 5: Do you think the	d. Project-based approach to teaching ESP would help students better to take
	rning and acquire the necessary skills needed to get a job in the future?
	a. Yes b. No



Thank you for your cooperation.