

SKILLS-CENTRED APPROACH FOR AN ESP COURSE DESIGN: CASE OF MASTER PHYSICS STUDENTS WRITING SCIENTIFIC PAPERS AT THE UNIVERSITY OF TLEMCEM

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ABSTRACT

The 21st century is characterised by its rapid shift towards a global as to a technological movement. To this end, many disciplines witnessed many changes. The domain of education is not an exception. A part from this, English for Specific Purposes (ESP) is seen nowadays as a critical agent in resolving many problems in different domains where English is taught. Amongst the difficulties, writing in English and more precisely a scientific paper is likely to be the main concern. The main objective of this paper is to investigate the difficulties encountered by master physics students at the University of Tlemcen while writing their scientific papers. For this purpose, a case study was conducted as a research field work. The data collected from a semi-structured interview, a questionnaire, and content analysis were analysed both quantitatively and qualitatively. The main results obtained revealed that the difficulties lie in terms of format and content. This is why; it is strongly believed that rethinking about the ESP course is more than needed. Besides, training language teachers to cope with those difficulties should alert the whole staff to ensure that training.

Keywords: ESP, Skills-Centred Approach, Course Design, Master Physics, Writing Scientific Papers.

INTRODUCTION

The advance of the 21st century has resulted in a huge expansion of technology, and thus, English in particular. Accordingly, what is generally viewed as the *Americanisation* of the world under the concept of *globalization*. This process is aiming at unifying the world under the same political system (Democracy), the same economic system (Capitalism and the Free Market System), the same religion (Monotheism or to believe in one God), and the same educational system (the LMD).

Apparently, the above mentioned issues gave birth to the spreading of English all over the world and through all domains. In other words, English nowadays has been given the status of being the first international language; or also known as the universal language; the global language; the language of technology, or a lingua franca. This is why; most countries are obliged to rethink about the position of that language within their jurisdictions where Algeria, as our case study, is not an exception.

Speaking about Algeria; expending the use of English sounds to be more than a necessity to meet the demands of the target as to the international job markets. Moreover, overcoming the dilemma of the linguistic situation in Algeria which is characterised by the dominance of the French language gave birth to English. At the level of education, lot of attempts are continuously made at the highest level of the political decision making process. Consequently, English is nowadays taught almost at all stages of education except the primary level where Algeria witnessed a pilot experience with some schools during the 1990's. This is referred to as EGP or English for general purposes.

Regarding English and more precisely within higher education districts, a new branch is integrated namely ESP or English for specific purposes. This new discipline is fundamentally based on needs specification and thus, process adaptation, i.e., the English taught in the ESP situation should mainly based on learners' needs in terms of skills notably: reading; speaking; listening; and writing which, in fact, represents many difficulties encountered by our EFL students at both EGP situation and ESP context.

These kinds of challenges deeply motivated the researcher to undertake this study which revolves around the following problematic situation: how to overcome the difficulties encountered by master physics students at the University of Tlemcen while writing their scientific papers. Therefore, it has been thought to conduct this investigation through skills-centred approach to ESP course designs. Hence, the overall aim is to diagnose those difficulties using a triangulation process for data collection and analysis to systematically design the appropriate writing course.

To deal with this problematics, the following research questions have been proposed:

1. Which type of difficulties master physics students encounter while writing their scientific papers?
2. At which level those difficulties lie?
3. How can ESP teacher training and course design help overcoming those difficulties?

Thus the following hypothesis are formulated to guide the study

1. Master physics students seem to come across different kinds of difficulties while writing scientific papers.
2. It appears to be at both format and content.
3. Harmonizing the ESP teacher training with the target course design may help our learners of physics overcome the difficulties of writing their scientific papers.

Research Design, Methods, and Procedures

The current paper attempts to describe the research design, methods, and procedures. It states the rationale behind using the case study. It also gives a more or less clear idea of the combination of the research methods adapted to both quantitative and qualitative methods and; essentially used to analyse the obtained data. In this respect, a semi-structured interview, a questionnaire, and content analysis have been exploited as research instruments.

Research Design

This research was conducted under the umbrella of the case study research design. The reason for choosing this type of research is that it focuses on understanding the phenomenon - in this case writing a scientific paper by master physics students - within its natural settings and objectives. Before talking about the case study as a research design, it is worth mentioning here that the whole process can be summarized- as stated by Mouton (2001:133): *"To satisfy the information needs of any study or research project, an appropriate methodology has to be selected and suitable tools for data collection and analysis have to be chosen"*.

Case study, as labelled by Yin (1994), Eisenhardt (1989), and others, has well-defined steps. However it is significant, at this level, to note down that it does not involve the use of a particular sort of evidence. Yin (1994) lists six most important sources of evidence:

documents, archival records, interviews, direct observation, participant observation, and physical artifacts. Table 1.1 summarizes both strengths and weaknesses of the six elements:

Table: 1. Strengths and Weaknesses of Sources of Evidence adapted from (Yin, 1994: 103)

Source of Evidence	Strengths	Weaknesses
Documents	Stable – can be reviewed repeatedly Unobtrusive- not created as a result of the case study Exact- contains exact names, references, and details of an event Broad coverage- long span of time, many events , and many settings	Irretrievability- can be difficult to find Biased selectively- if collection is incomplete Reporting bias- reflects (unknown) bias of author Access- many of deliberately withheld
Source of Evidence	Strengths	Weaknesses
Archival records	Same as those for documentation Precise and usually quantitative	Same as those for documentation Accessibility due to privacy reasons
Interviews	Targeted- focuses directly on case study topic Insightful- provides perceived causal inferences and explanations	Bias due to poorly articulated questions Response bias Inaccuracies due to poor recall Reflexivity- interviewee gives what interviewer wants to hear
Direct observations	Reality- covers events in real time Contextual- covers context of case	Time – consuming Selectivity- broad coverage difficult without a team of observers Reflexivity- event may proceed differently because it is being observed Costs- hours needed by human observers
Participant observation	Same as above for direct observation Insightful into interpersonal behaviour and motives	Same as above for direct observation Bias due to participant observer’s manipulation of events
Physical Artifacts	Insightful into cultural features Insightful into technical operations	Selectivity Availability

Additionally, it can be accomplished using quantitative and/or qualitative methodologies. A frequent confusion is that case studies are solely the result of ethnographies or of participant observation (Yin, 1981). This unique characteristic-the ability of the researcher to use observations of a single unit or topic, or contextual case, as the central point of a study, along

with its plurality as a research method-has enabled researchers using the case study to go beyond the boundaries of the traditional research paradigms.

As stated previously, the strengths of the case study justify its choice in this work. For instance, it has enabled the researcher to have an in-depth vision of writing scientific papers as a means of content delivery for an ESP course at the University of Tlemcen; and the series of procedures related to it (the way those papers are delivered and received by the audience).

It is also a significant plan for answering the research questions; its strengths outweigh its limitations. The case study offers a means of investigating complex social units consisting of multiple variables of potential importance in understanding the phenomenon. Anchored in real-life situations; the case study results in a rich and holistic account of a phenomenon. It has offered insights and illuminates meanings that expand its readers' experiences. Hence, a researcher selects a case study design because of the nature of the research problem and the questions being asked.

Research Methods

The present study opted as well as for a combination of quantitative and qualitative methods worthy to improve the readers' understanding. In practice, both methods are frequently considered to be suitable within a single investigation. It is up to the researcher to choose a specific method which will allow him to obtain somehow clear understanding of the topic. Before defining, giving the strengths, and justifying the use of the combination of both quantitative and qualitative methods; it seems much more appropriate to draw the reader's attention to each one of them in isolation.

Yet, it is of great value here to make a clear distinction between three main concepts used in both methods: data, information, and knowledge. Data are the primary source or the ground to start with. They are characterized by being abstract, general, and with no context; whereas, information can be defined as being data in context. Now, if this information widens one's horizon and increases his/her understanding about the living world; it is then called knowledge.

When it comes to the combination of both methods, this technique was conceived to improve an evaluation by ensuring that our limitations of one type of data are balanced by the strengths of another. Additionally, this was considered to guarantee that understanding is improved by integrating different ways of knowing. Most evaluations have been collected both quantitatively (numbers) and qualitatively (text, images); however, it was quite important to plan in advance how these will be combined as Coll and Chapman (2000:28) assert: *"Some research questions will be readily answered using qualitative means, others quantitative, and some will be best addressed using a combination of the two. What is necessary, is the appropriate research designs"*. The following figure summarizes the whole process.

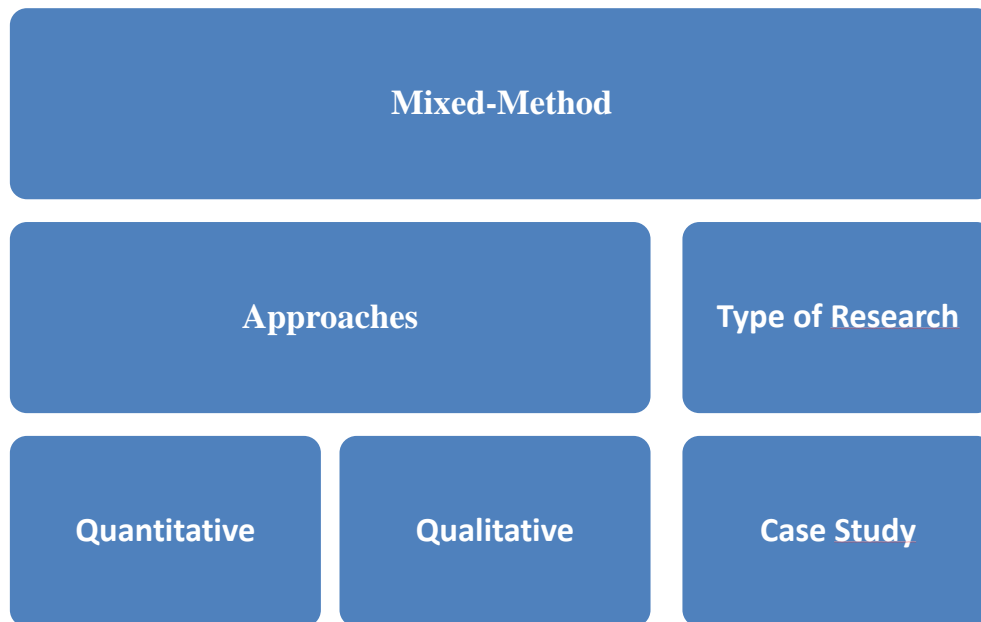


Figure: 1. Mixed Methods Process

Data collection

Data collection was viewed as a compulsory step and quite essential component to conducting our current case study-based research work. Hence, it is the process of gathering and measuring information on targeted variables in a more or less established systematic fashion, which then enables one to answer relevant questions and evaluate outcomes. The data collection component of research is common to all fields of study including physical and social sciences, humanities and business.

While methods vary by discipline, our emphasis was mainly on how to ensure accurate and objective data collection. The goal was to capture quality evidence that then translates to rich data analysis and allows the building of a convincing and credible answer to questions that have been posed.

The principle collection categories include: participant observation, interviews and focus group (Dalton, Elias et al., 2001). In this study, two techniques as to content analysis were used: an interview (semi-structured) and a questionnaire. A detailed description of these instruments is provided below.

Instruments

As already stated, a semi-structured interview has been addressed to the teachers along this research. Here is a bird-eye view about data collection instruments.

Teachers' Semi- Structured Interview

The Semi-structured interview has been used as data collection instrument or technique. The researcher had a list of key-themes, issues, and questions to be covered. In this type, the classification of questions has been changed depending on the direction of the interview. A guide (rubrics) was also used, but additional questions have been asked.

The Questionnaire

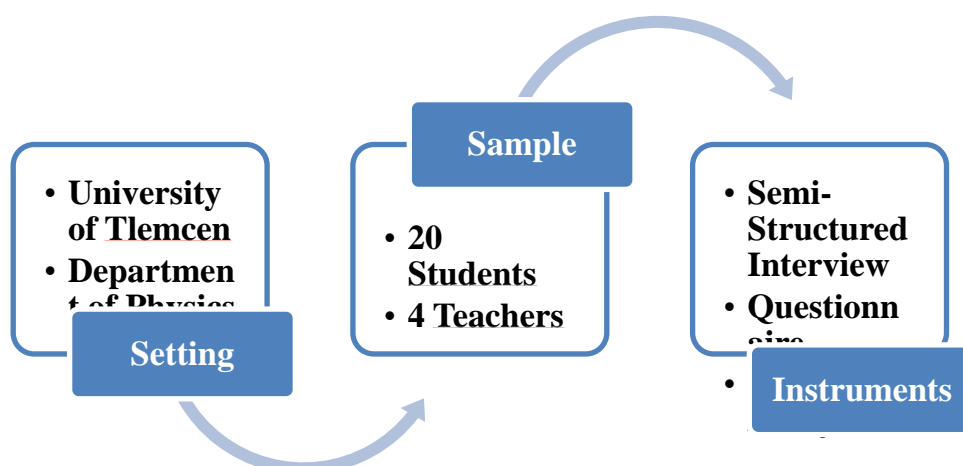
This part focuses on the questionnaire and how it has been conceived in identifying the problems generated when writing a scientific paper. To do so, a brief overview of the questionnaire and the types of study questions for which it is most suited are highlighted. It is worth mentioning that the greater deal of this part is devoted to a discussion of the steps involved in using the instrument in this study or what is called questionnaire design as well.

Content Analysis

In the same line with the semi- structured interview and the questionnaire, content analysis has been used as a data collection instrument. This part attempted to provide a general overview about this qualitative analysis method for qualitative social research.

According to Titscher *et al.* (2000:55), content analysis is "*the longest established method of text analysis among the set of empirical methods of social investigation*". Nevertheless, homogenous understanding of this method does not seem to exist at present, but originally the term "*referred only to those methods that concentrate on directly and clearly quantifiable aspects of text content, and as a rule on absolute and relative frequencies of words per text or surface unit*" (ibid).

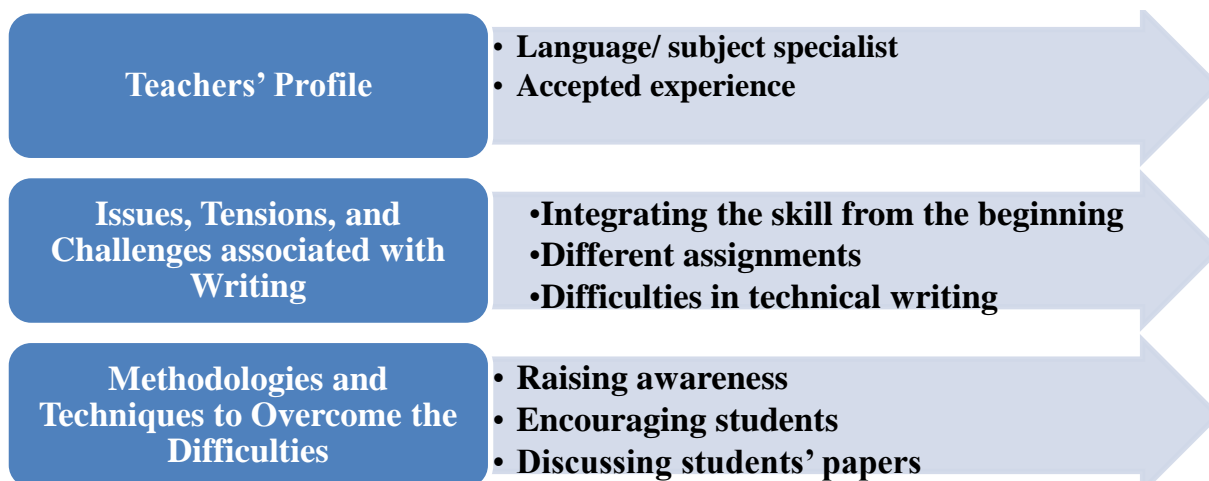
The following figure tries to summarize the whole process of data collections procedures undertaken in the present research. Besides, it highlights the setting as well as the informants the necessary data was collected in and with.



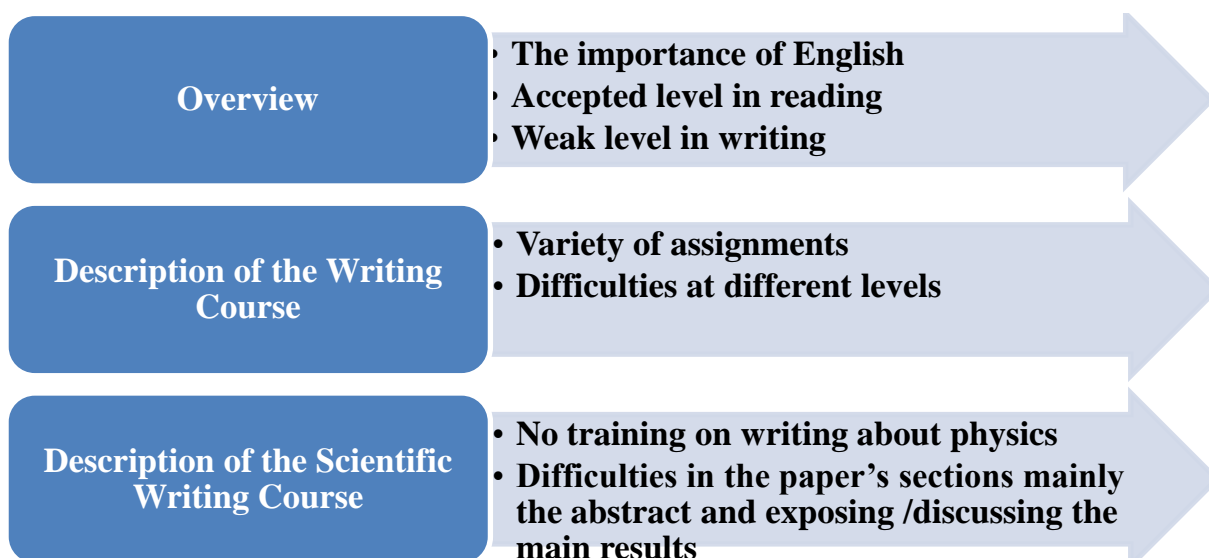
The Main Results

As stated previously, the present research opted for three data collection instruments. The main results obtained are summarized in the following figures.

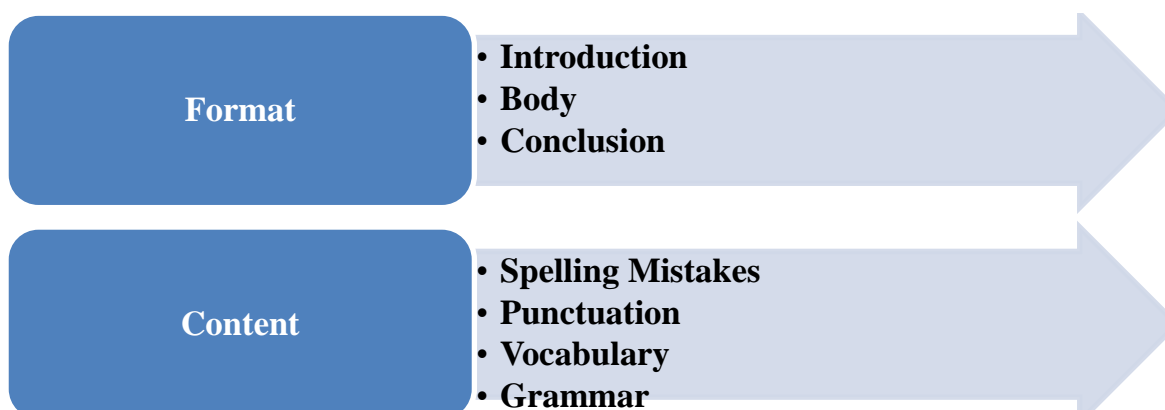
Analysis of the Interview



Analysis of the Questionnaire



Analysis of Content Analysis



DISCUSSION AND INTERPRETATION OF THE MAIN RESULTS

The main results obtained revealed that the difficulties lie in terms of format and content. This is why; it is strongly believed that rethinking about the ESP course is more than needed. Besides, training language teachers to cope with those difficulties should alert the whole staff to ensure that training.

Since it is research, the present investigation suffered from some limitations. Those limitations will be taken into consideration for future research. First, the sample size was relatively small, and limited to master physics students (option: Physics of gases and plasmas) at the department of physics/ Tlemcen University, thus affecting generalisation of the results.

Second, the problem of being objective while analyzing, interpreting, and discussing the results is there. This due to the fact that the researcher is an ESP teachers and have already experienced those difficulties with other students in other departments (department of dentistry and the department of commerce).Third, access to documents (papers, essays, articles) written by students was quite difficult (administratively speaking).

The last limitation is that organizing the meeting with teachers for the interview and with students for the questionnaire was really hard (as it was by the end of the year. And you know the rest!!).

CONCLUSION

Despite the above mentioned limitations, the present work ends up with important suggestions and recommendations related to the topic chosen i.e. ESP course design. This last represents the effect of the worldwide interest in the study of English which is gaining more and more importance. In addition to this the approach used (skills centred approach) is seen to be important as it looks to the end when designing ESP courses.

Now for a better understanding of the topic , this paper emphasises the idea that ESP teachers not only teaches but also provide materials, design syllabus, collaborate with subject specialists, conduct research and evaluate the course and the students. This is why a professional ESP teacher must be able to switch from one professional field to another without being obliged to spend months on getting started. He/she simply brings the necessary tools, frameworks and principles of course design to apply them to new material. The last word to say is that it should always be remembered that the ESP teachers are not specialized in the field, but in teaching English.

Another point to mention here is that using skills-centred approach as a framework of ESP, ESP teachers are provided with the necessary knowledge and tools needed to cope with their students' needs in the specialized arena. However, it is of great deal to emphasise the idea that ESP teachers are not specialists in the field, but in the teaching of English. In other words, their duty is English for the profession but not the profession in English. This is done by helping their students, who know their subject better than the teachers do, develop the essential skills in understanding, using, and/or presenting authentic information in their discipline.

Now speaking about the future of ESP teaching as a whole and further research out of this present investigation, the following questions are seen to be of great value if addressed in

future research: what are the underlying criteria to cope with the lack of adequate teaching materials in ESP and the necessity to design a needs-oriented ESP syllabus;? How to bridge the gap between theory and practice regarding the teaching of ESP? How teachers deal with the necessity to pick up teaching materials suitable for mixed-ability groups of learners as well as for groups of learners with different individual needs?

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