ACADEMIC WRITING SKILLS DEMONSTRATED IN UNIVERSITY STUDENTS' FINAL YEAR PROJECT REPORTS, AND IMPLICATIONS ON THE TEACHING OF ENGLISH FOR ACADEMIC PURPOSES, IN THE ARAB WORLD

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Abstract
This study highlights the academic writing skills that English as a Foreign Language (EFL) Arab students demonstrate in their final year project reports, and identifies the report’s constituent features such as topics, rhetorical forms, layout and structures. The study also elaborates on how the design of English for Academic Purposes (EAP) courses targeting students with similar background may be informed by such findings. The methodology of the study is underpinned by needs analysis, a genre approach to teaching EAP, and syllabus design. At the University of Nizwa, in the Sultanate of Oman, students coming from an Arabic background learn EFL to be able to meet the requirements and challenges of studying through the medium of English. Based on the finding that the final year reports have similarities and differences in terms of conventions and rhetoric, the author argues that a wide-angle approach might be more appropriate to teaching the language skills that the students need for writing a final year project report.

Keywords: EFL, project report, academic writing, research skills, needs analysis, EAP

Introduction
This paper seeks to develop an insight in respect of the academic writing skills that Arab students, learning EFL, demonstrate in their academic courses, and the extent to which such skills may inform the design of EAP courses. Literature asserts that to be able to perform efficiently in academic contexts, EFL students should acquire a number of complex strategies and skills which are practiced in university content classes (Flowerdew, 2005a; Cotterall and Cohen, 2003; Shih, 1986 and Spack, 1988). Research (e.g. Johns 2006, Cotterall and Cohen 2003) also asserts that learners require instruction on general conventions and registers of academic genre. These include selection, evaluation and integration of sources into their own texts, bearing in mind that this “involves some of the most difficult expert routines” (Johns, 2006 p 171). Other research relating to university academic writing however, shows that there are potential discrepancies between the skills required for writing research assignments on content courses, and the skills taught on EAP courses. These differences are particularly apparent when writing is analysed in terms of topics, process, audience, style, data collection and analysis, rhetorical mode, and student responsibility for the content (Zhu, 2004a, Spack, 1988 and Horowitz, 1986).

Like many similar Arab universities, the University of Nizwa in the Sultanate of Oman, English is a medium of instruction in academic majors such as Engineering, Business, Information Technology, Nursing and Pharmacy. The students, who are foreign learners of English, are required to perform different learning tasks using English as the language of communication and requires them to function effectively, often for the first time, with
different types of academic genre e.g. homework, exam papers, hand-outs, quizzes, workshop/lab reports, semester assignment reports and final year project reports. This means that students should have learned the conventions of academic writing during their language course. In order to develop a clear understanding of students' requirements within the academic writing domain, and provide the language course with first-hand information about what to teach those students, this study investigates student final year project reports, posing the following research questions:

What are the academic writing skills that university students demonstrate in their final year project reports?

What impact should that have on the design of English for Academic Purposes courses?

**Literature Review**

Attempts to close the gap between the skills required on content courses and those taught on EAP courses focused on the types of writing activities required in university classes, the types of rhetorical skills required to complete the writing tasks (Horowitz, 1986), the faculty reactions to students’ writing, students' writing needs and students' perceptions of their needs (Leki and Carson, 1994), and the methods, challenges and possibilities of teaching research skills to English language students (Johns, 2006; Flowerdew, 2005a; Cotterall and Cohen, 2003).

It is asserted that in addition to reading and responding to texts in university content classes, students must be able to manipulate data from different sources such as interviews and questionnaires (Cotterall and Cohen, 2003; Spack, 1988; Horowitz, 1986). Students are also sometimes asked to formulate and test generalizations, observe and report significant details, or generate criteria for contrasting similar phenomena (Spack, 1988), and they may also be asked to connect theory to data that they have researched (Horowitz, 1986). The writing process in academic context includes strategies such as planning, prewriting, drafting, consulting, revising, and editing (Spack, 1988):

Planning is the assignment of tasks and timetabling study and composition.

Prewriting requires gathering, exploring, and organizing raw material.

Drafting requires the structuring of ideas into linear discourse.

Rewriting phases take place including revision, editing and proofreading (Shih, 1986).

Consultation to ensure aims and objectives are satisfied.

In addition, university courses emphasise collaborative learning so feedback is provided by colleagues and/or peers in order that ideas are re-examined and reorganized. On many occasions, research projects and other types of tasks are carried out by a group of students (Zhu, 2004a&b; Davidson & Worsham, 1992 and Horowitz, 1986).

The implication of the nature of academic writing, as discussed above, for the EAP courses is that learners should be taught the research and report writing skills required in their majors. However, teaching research skills to EFL students is a challenging task. It should include helping “students to develop the motivation, confidence, self-reflection, and meta-awareness that will enable them to ask the right questions, make the right observations, select the appropriate genres, and take the necessary routes to task completion” (Johns, 2006 p 126). The practical experiences of Cotterall and Cohen (2003), Flowerdew (2005a), and Johns (2006) in teaching these skills confirms that before embarking on classroom instruction, teachers should have sufficient understanding of why their students want to learn English, what and how to teach them. Flowerdew (2005a) points out that needs analysis (NA) provides the rationale for the course, as well the syllabus. A course should help students develop the ability to develop an appreciation of: research context, topic and genre/texts; interaction with other people for data collection and teacher and peer feedback; writing process; and learners’
reflection. Providing students with authentic, non-textbook-driven, research topics helps in establishing a research context, given that real topics encourage students towards motivation and interest. As a result they feel that they write with a purpose and for real audience. Cotterall and Cohen (2003, p 163) argue that “an important aspect of planning the writing programme involved identifying appropriate texts for the learners to work with, given that many of the standard university texts were beyond their level of comprehension”. Assisting learners to locate information and data sources helps them manage their time more effectively by making them focus on the writing process, rather than spending much of their time searching for sources (John, 2006; Cotterall and Cohen, 2003). Most importantly, as Johns (2006) argues, improving students’ engagement with sources, develops their awareness of plagiarism. It also helps them facilitate the implementation strategies of acknowledgement of sources and framing of citations within their arguments. Examples of such strategies include paraphrasing, summarising and direct quoting. Students should also be provided with guidance on how to communicate and interact with live audiences such as people in a workplace situation (Johns, 2006; Flowerdew, 2005a). Interaction also takes place with peers in terms of receiving and giving feedback when peer and group correction occurs (Johns, 2006 and Cotterall and Cohen, 2003).

The text-based approach (Flowerdew, 2005b), and the scaffolding approach (Cotterall and Cohen, 2003 and Johns, 2006) used for teaching research skills sustains staged instruction so that within each stage, students are helped to acquire and develop a particular research requirement. For example, Johns (2006) implements three interrelated stages. Stage one of which is an information competence task through which students locate and evaluate sources. In stage two, students integrate the sources located in stage one. For learners, proceeding successfully through these stages requires rethinking of their reading plans and strategies for locating details necessary for their argumentations. Teachers, on the other hand, are required to be able to scaffold activities of modelling, providing feedback, and practicing. In stage three, students reflect on their work during the previous two stages. Reflection gives students opportunities for feedback on their growth as learners and researchers, by recording, discussing, and developing strategies for success (Johns, 2006).

Methodology

Research on academic writing suggests that the development of a true understanding of the writing produced by students in specific academic contexts would require a critical investigation of students' writings which can be achieved by collecting and analysing students’ assignments in the target context (Shih, 1986 and Spack, 1988). This study analyses twenty one final year project reports collected randomly from three majors i.e. IT, Engineering and Business courses to understand their constituent features, e.g. topics, rhetorical forms, layout and structures using a genre analysis approach. Genre theorists assert that genre is used within a particular context to fulfil specific communicative purposes and address a specific audience, according to specific text features (conventions), content and organization (Swales, 1990). To recognize genre communicative functions, Dudley-Evans (1994) suggests using the direct and indirect linguistic evidence in the text and the analyst’s prior knowledge about the underlying features of a text at both local and global level. There is a close relationship between the communicative purposes of a genre and its structure, or formal features (Bhatia, 1993b and Johns, 1997). Textual formal features or structure, as Johns (1997) explains, can refer to the macrostructures which can be known by headings e.g. introduction, methodology, data analysis, recommendation, conclusion, or by sentences and phrases, e.g. to conclude, I recommend. Therefore, this study inquires about the content and organisation of the final year project reports and seeks answer for the following questions. What is the content of the final project report? What are the communicative functions? Who is
the audience? What are the organisational features? What are the rhetorical modes and language functions? What are the information sources?

Analysis

It was stated, in the methodology section above, that this study seeks facts about the constituent features, e.g. topics, rhetorical forms, layout and structures of the final year project reports, using a genre analysis approach. For analytical convenience, information is collected below in five categories: research topic, problem and objectives; information sources and integration; audience and interactions; reports structure and organisation; rhetorical modes and language functions. Any texts between brackets [...] below are quotes taken from the final year project reports collated from IT, Business and Engineering majors.

Research topic, problem and objectives

Some of the analysed project report stated research problem, while authors did not but imply listing a number of project objectives. This difference may be due to the purpose of the project. For example, the IT students designed a computer programme, as a solution to a problem encountered by the university admin staff [there is currently no computerised system in the book store. There is a big difficulty in the process of managing borrows and returns operations and management of book purchase orders. We are developing a system that will control this process]. On the other hand, the electrical and electronic devices designed by the Engineering students were not solutions to any existing problem, but a practical administration of their ability to design such tools [the major objective of the project lies in the design process]. However, this should not mean that the IT and Business projects were more problem-solution oriented than the Engineering project. Problem-solution oriented writing, as Zhu (2004a) explains, requires students to analyze information, identify problems, recommend solutions and justify recommendations. The projects of the three specialisations were problem oriented in the sense that they required students to analyze information, identify problems, recommend solutions and justify recommendations even though this phenomenon was more explicitly stated in some of the IT and Business reports than in the Engineering ones.

It should be recognized that the ultimate goal of the projects of the three majors remains institutional, not for solving a real problem as such, but fulfilling an assessment requirement. This suggests that the students were performing as learners rather than businesspeople, engineers or computer program designers.

The indication for the EAP course, then, is that learners should be provided with research topics presenting real life topics and the topics found in their majors. EAP students prefer to practice writing in the language classes on topics relevant to their specialisations rather than on general topics (Johns, 2006, Flowerdew, 2005a, Cotterall and Cohen, 2003 and Leki and Carson, 1994). The tasks also should not be topic oriented, as this requires the tapping of information from personal experience or library research, but should be problem oriented which fosters an analytical approach, gathering and analysing information from different sources to solve the problems posed (Zhu, 2004a).

Information sources and integration

The analysis of project reports proves that students were required to perform finding, selecting, and synthesizing sources, a finding on which the study concurs with Horowitz (1986), Spack (1988) and Leki and Carson (1994). The analysed reports also required the utilisation of library and research skills because students deal with information from both primary and secondary sources. Furthermore, this study demonstrates that the extent to which such skills were required across the three specialisations (IT, Business and Engineering) was
determined by the nature of the specialisation and the research topic. For example, in the Engineering reports, data collection was conducted and details about the required device were assembled in order [to satisfy the potential customer needs]. The analysis was presented in timetables, diagrams, pictures and formulas explaining, rationalising, and illustrating the design of the instruments i.e. [automatic generator controller for power failure], [plastic welding device] and [electronic digital interruption counter]. Regarding the IT project, the data used in the design of the new computerized system was collected from the end users. Some reports included no data analysis in the form of tables, diagrams, formulas, etc. because the data was only meaningful in terms of providing ideas about what the end users were going to use the programme for and the different functions it should offer.

In some of the Business project reports, data was collected through surveys and interviews as primary sources. Participants included experts, employees, employers, businessmen and managers from different work places. Information was also collected from secondary sources e.g. books, magazines and websites. The data was analysed and presented in the form of tables, charts, pie/bar diagrams and statistical tools such as mean, mode, percentages, and averages. These styles were combined with short explanatory paragraphs [the above table presents the percentage distribution of respondents according to five age groups in the three types of organisations. 40% of the respondents belong to the age raining from 31 to 40. It constitutes the highest proportion of the total respondents from Ministry sector. 53% of respondents come from private sector and 40% are self-employed belonging to the age group of 21-30, constituting the highest proportion of respondents]. A pilot study was also conducted where corrections were made and a sampling of respondents was decided.

**Audience and interactions**

The study finds that some of the reports were collaborative, conducted by more than one student (between 2 and 5), and some were presented individually. Like Zhu (2004a), Canseco and Byrd (1989), this study finds that the projects of the three specialisations required collaborative work. Teamwork in academic discipline aims at preparing students for real-world tasks. Students should develop the skill to interact and negotiate expertise with other members of the team, and contribute to team effort (Johns, 2006, Flowerdew 2005a and Zhu, 2004a). In addition to their fellows and tutors, students interacted with people outside the discipline. The end users of one of the IT projects [design of an attendance system] were not only the supervisors who assessed the students' work but also other college tutors and administrators. There was a manual enclosed with the programme to which users could refer for guidance. The librarians, who were the users of the library system prepared as an undergraduate project, revealed that the students interacted with them at different stages to obtain information, which was helpful for the design of the software and trained them on its use. The Engineering students were also taught to take into account potential end users. It was explained earlier in (1) that the Engineering reports included data collection in which information about the required device, from end users’ perspective, was assembled. Nevertheless, those devices were not designed to fulfil the requirements of any particular customer. In fact, the customers mentioned in the quote (in 2 above) were imaginary, mentioned only as a research requirement. The indication of audience awareness for the EAP is that students should be enabled to deal with an audience other than their teachers. Zhu (2004b) asserts that faculty members stress the importance of audience awareness as an academic writing skill.

**Reports structure and organisation**

In terms of organisation and layout, the reports of the three specialisations had some similarities and differences, as illustrated in table one in the appendix. As to the similarities,
all reports have a title page, table of contents, abstract, acknowledgement, chapters, references and appendices. The organisation of those sections differs across the three specialisations.

As to some of the differences, the Business reports were different from others, in that chapter 3 was about the methodology and chapter 4 was on data analysis. The IT project reports devoted chapter 3 to discussing the design of the new programme and chapter 4 to its use. The Engineering reports assigned chapter 3 described the design process while chapter 4 was a conclusion. There were some differences among the Engineering reports as well. Some reports were organised chapter-wise, others into sections e.g. introduction, planning, materials, design etc. Furthermore, some reports included action plans, others did not. Chapter 1 in all reports gave an introduction into the research and its context. Chapter 2 in most of the reports were literature reviews while in some literature review was embedded in chapter one.

The variations in the structure and layout of the project reports included in this study may be due, in addition to the differences in the nature of data and information, to the way the tutors inform the students about the projects. In one of the majors, students were referred to shared convictions as a model provided by the faculty. There were similar convictions in another specialisation but less detailed. The project tutors explained that they asked the students to follow a certain layout but this was neither written nor taught. In one of the majors, there was neither a research methodology course to attend nor a particular report layout to follow. Each teacher had their own style, which was conveyed to students through verbal instruction. Therefore, reports of the same major differed among themselves in terms of layout and content. Dissimilarity in academic genre structure is reported by previous research e.g. Hopkins and Dudley-Evans (1988) and Flowerdew (2000). The latter even finds that reports belonging to the same genre, i.e. mechanical engineering final year projects, differ in terms of structural pattern.

**Rhetorical modes and language functions**

It should be clarified that an inclusive linguistic analysis of the project reports is beyond the scope of the study. Each of the analysed reports combines several rhetorical modes and moves from one to another purposefully, a finding that the study shares with previous research i.e. Zhu (2004a) and Flowerdew (2000). Besides, each of the project reports analysed in this study seem to contain a number of language functions that were used to serve various communicative purposes. Language functions refer to what Swales (1981) called moves and steps, actually meaning “the purpose for which an utterance or unit of language is used” (Richards and Schmidt, 1992 p 214). Some examples of language functions in these reports are: definition, appreciation, description, listing, narration. Functions within these reports can be recognized by the general structure of the reports. For example, the heading [abstract] at the top of the page refers to a section contains main ideas and provides a summary of the study. Similarly, the section entitled [summary] at the end of the report provided a conclusion summarising the report. It should also be acknowledged that each main section or even some subsections contained more than one language function. For example, the [abstract] starts with background information providing a kind of rationale for conducting the project, e.g. [as everyone knows libraries are one of the main sources of information of different subjects. Libraries may face some difficulties in keeping their items safe. Therefore, different systems have been developed to keep libraries and their content secure. Our project, generally, deals with library systems including searching for items, borrowing, returning, and paying fees]. Then, it summarised each stage of the project for example, [our project consists of four stages. They complement each other]. The abstract also contains narration about what the students did at some stages e.g. [after we implemented the designed device we moved to the testing phase].
In addition, there were certain language functions occurring interchangeably in the three specialisation reports. For example; a statement of gratitude, definition, description, narration, conclusion, exemplifying, and listing. This might suggest that there were some generic language functions used by all majors. Previous research on the business (Zhu 2004a), and engineering genres (Flowerdew, 2000 and Swales, 1990) report similar language functions. For example, Zhu (2004a) reports that in a business genre, a problem-solution mode is combined by narration, comparison, process, enumeration, and description, while the engineering genres contain background information, explanation, exemplification, deduction referencing, justification and recommendation.

To sum up, the IT, Business and Engineering final year project reports are research-based genres. They include some similarities and differences in terms of topics, audience, content, organisation and layout. This should inform EAP design as will be discussed in the forthcoming section.

Discussion
The analysis of the final year project reports presented in the previous section evokes two argumentative issues: one relates to the research nature of the projects, the second to the differences and variations within such genres. To start with, research, as specialists assert, is a systematic process of inquiry, which consists of secondary and primary research and includes statement of a research problem, hypotheses, questions; data collection, data analysis and interpretation and conclusions (Robson, 1993 and Charles, 1995). The constituent features of the investigated project reports, as pointed out in the previous section, include project problems or objectives, secondary and primary research, data collection, data analysis, interpretation, discussion and conclusion. This finding aligns with the previous research findings, of Canseco and Byrd (1989), Leki and Carson (1994), Leki and Carsons’s (1994) and Zhu (2004a & b), that assignments in university classes are research based rather than personal experience oriented and that university students deal with intellectually stimulating and demanding subjects and complex writing assignments incorporating multiple sources.

However, the major project reports analysed in the study are not identical but witness some differences and similarities. From genre theory perspective, differences and variations within genre are meaningful, purposeful and have pedagogical significance. Differences in terms of audience, style, features, lexis, register, etc. are normal consequences of having different personal and institutional writing purposes. Therefore, variation is just as important as similarity because they enable writers to expand their understanding of the discourse community, enlarge their portrait of the target audience and develop sufficient writing skills that are more likely to be useable in new writing experiences and contexts (Hyland, 2003). Such theoretical orientation has its underpinning impact on EAP courses specifically from the point of view of narrow-angle and wide-angle language courses.

This spectrum of narrow-angle/wide-angle course, suggests that the more situation-specific or discipline-specific the students’ target needs are, the narrower angle is the course, and vice versa. In other words, narrow-angle courses are discipline-specific and cater for learners with clearly defined English usages and tasks in a given context. Wide-angle courses, on the other hand, accommodate learners with less clearly defined eventualities (Widdowson, 1983 and Bruce, 2005). A wide-angle EAP course should, then, teach generic research skills such as, research questions, data collection, and data analysis. However, in terms of course objectives, an EAP course preparing academic students to do final year reports might state that at the end of the course, students will be able to: Write research questions on a given topic.

Read printed and electronic resources critically as part of literature review to use others’ information and ideas in one’s own report.
Acknowledge and document precisely the information/ideas extracted from printed/electronic resources.

Design a questionnaire and interview questions and administer them to a number of participants in order to collect data for assignments.

Analyse using charts, tables, diagrams, etc. the data collected by research tools.

Interpret the analysed data in order to provide an explanation for the phenomenon investigated in the research.

Monitor, check and revise or edit one’s own work and that of other course participants and give feedback. Write a multi-section research report that consists of: Introduction Literature review; Analysis and interpretation; Conclusion Reference list; appendices

Conclusion

In EAP syllabus literature there are two important questions to ask: what is to be learnt? And why is it to be learnt? The answers to these questions are informed by NA and research findings (Watson Todd, 2003; Flowerdew 2005a and Hutchinson and Waters, 1987). The main message this paper would promote for any other EAP is that Arab students doing final year project reports should attain a number of complex academic research and writing skills, some of them are discipline-specific but others generic. It is hoped that the analytical framework implemented in this paper, which is underpinned by EAP, genre analysis approach, syllabus design, and NA might be generable to similar context.

Further research might be conducted to explore EAP teachers’ readability in order to teach research and report writing skills to EFL EAP learners. For educational change to be implemented successfully, teachers’ attitudes, training needs, understanding of the change etc. have to be accounted for (Waters and Vilches, 2001; Wedell, 2003 and Riley, 2000). Second, further research might be conducted on the effectiveness of an EAP course teaching research and report writing skills. Specialists in syllabus design e.g. Hutchinson and Waters (1987), Holliday (1997) confirm that neither needs identification, nor change implementation, is the end of the story for innovation implementation. Therefore, course evaluation should be considered carefully to insure successful employment of the EAP course.

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