Academic Literacy:
An Investigation of Problematic Areas in EAP at KNT University of Science and Technology

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Abstract

Despite its sociopolitical basis, Academic Literacy (AL) is recently referred to as a set of complex skills such as writing, which lays undeniable foundations for success in academic communities (Hyland & Lyons, 2002). This study is aimed at improving students' AL in general and their writing skill in particular at Khaje Nasiredin Toosi (KNT) University of Science and Technology. Based on the domain of EAP (Flowerdew & Peacock, 2001; Jordan, 1997), and among various academic assignments (Braine, 1995; Canseco & Byrd, 1989), students' summary writings at KNT University were selected to be investigated. Besides the summaries, 20 students were interviewed to delve more into the problematic areas. Data analysis of 1270 written errors indicated that sequence of tense, article use, and appropriate selection of words are the most prevalent error types. Further analysis of the data revealed that students had failed to develop their ideas properly in unified paragraphs. Moreover, students were unsuccessful to put their ideas in the simple format of introduction, body, and conclusion. The paragraphs also lacked cohesive ties. The article, accordingly, ends with some practical recommendations addressing the present issues.

Key Words: EAP, academic literacy, error gravity, writing
Background and Purpose

Literature is rich with many studies that have been conducted in relation to the teaching and learning of English for Academic Purposes (e.g., Allison, Berry & Lewkowicz, 1995; Flowerdew, Li & Miller, 1998; Lee, 1999; Lu & Julien, 2001; Peacock & Ho, 2003; Hood, 2008; Harwood, 2009; Ha, 2009). English for Academic Purposes (EAP) is generally defined as teaching English with the aim of facilitating learners’ study or research in English (Flowerdew & Peacock, 2001; Jordan, 1997). This definition covers both teaching and learning study skills as well as general English.

EAP is “language research and instruction that focuses on the specific communication needs and practices of particular groups in academic contexts” (Hyland & Hamp-Lyons, 2002, P. 2). Besides their undergraduate courses, many universities have also developed EAP courses specifically designed for postgraduate students (e.g., Cargill, Cadman & McGowan, 2001) in recognition of the difference in tasks and skills required for postgraduate compared to undergraduate students. These courses, on the whole, aim to develop the learners’ writing skills, including development of more sophisticated and accurate levels of academic language use. Literature is replete with papers providing descriptive accounts of different courses and approaches adopted (e.g., Cargill et al., 2001; Casanave, 2003; Dudley-Evans, 1995; Frodesen, 1995; Silva, Reichelt & Lax-Farr, 1994).

In this regard, Academic Literacy (AL) seems to be the core of EAP, especially in Iran. Literacy is defined as the ability to read and write (Rodman, 2006). Academic Literacy, moreover, is a complex set of skills increasingly argued to be a vital foundation or cultural knowledge required for success in academic communities (Hyland & Hamp-Lyons, 2002).

From among all skills, it is writing which seems to be well received in EAP contexts. Writing is the most important language skill at university because students’ grades are largely determined by their performance in written assignments, tests and examinations (Zhu, 2004). Literature is replete with investigations on writing and written assignments in EAP contexts (Cadman, 2002; Hyland & Hamp-Lyons, 2002; Tapper & Storch, 2009; Harwood, 2009). The most common type of writing is students’ assignments. To prepare students for university courses, it is important to have information about the types of writing tasks actually required across academic disciplines and about the instructors’ purposes in assigning these tasks (Shih, 1989). In a study, Behrens (1978) found that essays interpreting experiences and readings were
the most frequent type of papers assigned in undergraduate humanities and social courses. He also concluded that on science courses, on the other hand, experimental reports were the most frequent homework type. Eblen (1983) in a similar study reported that essays were the most common type of assignments.

Many studies on academic writing tasks have focused on science and engineering (e.g., West & Byrd, 1982; Jenkins, Jordan & Wieland, 1993; Braine, 1995). Braine (1995) reported that professors teaching courses in science and technology assigned five types of homework: summary, experimental report (lab), case study, and research paper.

Furthermore, based on the analysis of 55 course syllabi from 48 different graduate business courses, Canseco and Byrd (1989) categorized the assignments into seven branches: exams, written responses to problems, projects, case studies, papers, reports, and miscellaneous assignments. Also, writing assignments in business courses often required team work and were controlled by the instructors. Tapper and Storch (2009), also reported that students’ assignments included: a) a summary of one text (500 words), b) a critical summary comparing two texts (1000 words), c) a proposal for a research project (2500-3000 words), and d) an oral seminar presentation based on the proposal (7-10 minutes long). These tasks were chosen because they had been identified as authentic tasks required for postgraduate students, particularly in terms of the writing and critical engagement expected from graduate students (Belcher, 1995; Casanave & Hubbard, 1992; Hood, 2008).

Research conducted in the past decade indicates that academic writing is the principal source of difficulty for Hong Kong undergraduates (Bhatia & Candlin, 2001; Hyland, 1997). However, few studies investigated the problematic areas of a curriculum in EAP contexts and the students’ difficulties in adapting themselves with the syllabus. In this study, The researchers tried to investigate the shortcomings of EAP at Khaje Nasire Toosi (KNT) University of Science and Technology. Moreover, the researchers investigate the areas at which students need to work more and seek the probable reasons for the existing shortcomings.

**Method**

**Participants**

The participants in this study were 40 students, including 16 male and 24 female students. They aged from 18 to 22. These students were selected from
among those who were studying at Khaje Nasiredin Toosi (KNT) University of Science and Technology. They were all freshmen, majoring in the technical courses taught at KNT, electronics, civil engineering, telecommunication, applied chemistry, physics, topography, pure math, applied math, computer engineering, industry, and economics. They had all taken part in an obligatory General English Course held twice a week. The course included two two-hour afternoon sessions and was aimed at improving the general English proficiency of the students, mainly focusing on reading, grammar, and vocabulary.

**Instrument**

The main instrument of this study was students’ summaries of three different stories covered during the course. The course book was compiled by the Head of English Department of KNT University of Science and Technology. To investigate the most common types of errors among their summaries, the students were asked to read a short story and put it into a written summary.

**Procedure**

To collect the data, two of the general English classes held at KNT University were selected randomly. Based on various academic assignments (Braine, 1995; Canseco & Byrd, 1989), students' summary writings were selected to be investigated. Students were asked to read each of the short stories at home and summarize it into 250 to 350 words on paper. This procedure was repeated three times for three different short stories. To provide a common ground among the researchers and the raters, some meeting sessions were held. In these sessions, some sample summaries were read, and the errors were investigated and categorized.

In order to meet the demands of the research, i.e. to find out about the most common problematic areas in students’ writings, their errors were counted and types of those errors were distinguished by two raters. Students’ errors were counted based on the combination of the lists introduced by Tomiyama (1980), Vann and Meyer (1984), Sheorey and Ward (1984), Ferris (1999), Ashwell (2000), Ferris and Roberts (2001), and Chandler (2003). No claim is being made here that this error categorization is better than other lists introduced in the literature. The list, based on which the errors were detected, included: articles, logical connectors (conjunctions, relative pronouns, etc.), possessives, singular/plural nouns, prepositions, as well as lexical choice, tense, and subject-verb agreement. The researchers added two more categories which
were present in the students' written productions: *content word omission* and *word order*.

**Design**

The present study is a product-based quantitative research employing error analysis methods and error detection assessments. The research is considered to be a quasi-experimental one. Since randomization was not the means of group selection, all of the students were put into one group. These problematic areas, manifesting themselves in the form of the most common types of errors in the summaries of students, could be an indicative of the areas needed to be touched upon and reconsidered in the course syllabus design.

**Results**

This section is divided into two parts: students’ summary analysis which is based on the existing errors residing in the students’ productions, and a report on students ideas shared with the interviews.

**Students’ Summary Analysis**

This study was aimed at improving students’ AL, in general, and their writing skill, in particular at KNT university of Science and Technology, and listing the most frequent errors in students’ summary writings hierarchically. To this end, 40 summaries were read by two raters and the errors were marked by an agreement of 85%. The errors fell into three groups: *Grammatical errors* (tense, articles, connectors, prepositions, pronouns, clauses, possessives, parallel structure, subject/verb agreement, and singular/plural), *Mechanical errors* (punctuation, capitalization, and spelling), and *lexical choice errors* (content words, appropriate choice of words, word order, and parts of speech). This categorization was a modified version of a description of error types listed by Lyster (1998). The number and percentage of occurrence for each type of error is illustrated in Table1.
Table 1

*Number and percentage of the occurrence of the errors*

<table>
<thead>
<tr>
<th>Feature</th>
<th>Number of errors</th>
<th>Total errors (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grammar</td>
<td>588</td>
<td>46.29%</td>
</tr>
<tr>
<td>Mechanics</td>
<td>494</td>
<td>38.89%</td>
</tr>
<tr>
<td>Lexical choice</td>
<td>188</td>
<td>14.80%</td>
</tr>
</tbody>
</table>

As Table 1 indicated, the most frequent errors in descending order were grammatical errors (46.29%), mechanical errors (38.89%) and lexical choice errors (14.80%). Based on this result, it can be assumed that grammar is the most problematic sub-skill which is manifested in students’ written productions.

The grammatical errors further fall into tense, articles, connectors, prepositions, pronouns, clauses, possessives, parallel structure, subject/verb agreement, and singular/plurals. The number and percentage of each error is tabulated in Table 2.

Table 2

*Number and percentage of grammatical errors*

<table>
<thead>
<tr>
<th>Feature</th>
<th>Number of errors</th>
<th>Total percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tense</td>
<td>159</td>
<td>27.04%</td>
</tr>
<tr>
<td>Articles</td>
<td>132</td>
<td>22.44%</td>
</tr>
<tr>
<td>Connectors</td>
<td>79</td>
<td>13.43%</td>
</tr>
<tr>
<td>Prepositions</td>
<td>78</td>
<td>13.26%</td>
</tr>
<tr>
<td>Clauses</td>
<td>32</td>
<td>5.44%</td>
</tr>
<tr>
<td>Pronouns</td>
<td>30</td>
<td>5.10%</td>
</tr>
<tr>
<td>Possessives</td>
<td>27</td>
<td>4.59%</td>
</tr>
<tr>
<td>Parallel structure</td>
<td>19</td>
<td>3.23%</td>
</tr>
<tr>
<td>Singular/ Plurals</td>
<td>16</td>
<td>2.72%</td>
</tr>
<tr>
<td>Subject/verb agreement</td>
<td>16</td>
<td>2.72%</td>
</tr>
</tbody>
</table>

Tense errors were the most prevalent type of grammatical errors (27.04%). Most of the students had problem with simple past and simple present. After tense, the articles (22.44%) and connectors (13.43%) were the most common
mistakes. Singular/plurals and subject/verb agreement were at the bottom of the list (2.72%).

The Mechanical errors are classified into punctuation, capitalization, and spelling.

Table 3 illustrates the number of times each sub-category has been used wrongly or not used at all.

Table 3

Number and percentage of mechanical errors

<table>
<thead>
<tr>
<th>Feature</th>
<th>Number of errors</th>
<th>Total percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Punctuation</td>
<td>235</td>
<td>47.57%</td>
</tr>
<tr>
<td>Capitalization</td>
<td>175</td>
<td>35.42%</td>
</tr>
<tr>
<td>Spelling</td>
<td>85</td>
<td>17.20%</td>
</tr>
</tbody>
</table>

As shown in Table 3, punctuation (47.57%) is the most recurrent error type. Capitalization (35.42%) and spelling (17.20%) are ranked afterwards.

The researchers classified lexical choice errors into content word, appropriate choice of word, word order, and part of speech. They are presented in Table 4 as follows.

Table 4

Number and percentage of lexical choice errors

<table>
<thead>
<tr>
<th>Feature</th>
<th>Number of errors</th>
<th>Total percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content words</td>
<td>70</td>
<td>37.23%</td>
</tr>
<tr>
<td>Appropriate choice of words</td>
<td>53</td>
<td>28.19%</td>
</tr>
<tr>
<td>Word order</td>
<td>35</td>
<td>18.61%</td>
</tr>
<tr>
<td>Parts of speech</td>
<td>30</td>
<td>15.95%</td>
</tr>
</tbody>
</table>

According to Table 4, content words (37.23%) was the most frequent error type in lexical choice, and most of the students had problem with addition and omission of content words. Part of speech (15.95%) was the least common error in this part.
Students’ Perspective

There have been arguments that the field of EAP should involve the development of a critical awareness of the language (Johns & Swales, 2002; Pennycook, 1997). This suggests that students should be encouraged to question the ideologies and conventions they come across. To reach this end, 20 students participated in a group interview. Their ideas were recorded and the commonalities were stated.

For one thing, what made students dissatisfied with the course, was inapplicability of the words presented in each unit as “new words”. They did not seem to appreciate formal English. Students’ unanimously agreed on the fact that the words were not helpful in that they were mostly directed at formal English, and that they were not quite useful for their speaking skill. One student said, “All students spoke Persian, therefore, we translated their [sic] words into English,” and yet another put, “I don’t understand why we should memorize this number of [sic] words… We need to talk. What can I do with these words? These words are not useful. These are the words of Shakespeare time [sic]!”

Motivation was another factor which was brought up by the students. The format of the book on its own, the gist of the units, and the exercises were not in accordance with students’ interests and field of study, therefore, the majority of the students complained and said that they had lost their motivation to keep on studying. The topics of the units were not only out-dated but also demotivating. Furthermore, they were mostly unrelated to students’ field of study. Having no pictures (even black and white ones) had accent the boredom of the students as one put:

This book is really boring. There is not even one picture, for the sake of God. The book does not motivate me to read it. I do not like the topics, either. Why should we read stories which were written a hundred years ago? We have many newer and more interesting stories, like chicken soup.

Students, also, complained about the number of the new words on each page of the unit (20-30 new words!). The number of the new words had made the students follow bottom-up reading process and had stopped them from understanding the purpose of the text. The multitude of words to learn was overwhelming to them. In addition, language learning was solely focused on
vocabulary memorization rather than making endeavors to enhance communicative, reading, and writing skills. One student held:

We are just memorizing the new words. There are many new words on each page. I am very anxious. I memorize today, I forget them all tomorrow. Does general English means memorizing a lot of new words? We don’t use what we learn.

The students at KNU are expected to take three quizzes throughout a semester. Surprisingly, the students had a common belief about their 3 quizzes and midterm exam. They believed the format of the exams pushes them toward vocabulary and in some cases text memorization! They objected the testing format which, they believe, leads them to text memorization to answer grammatical, vocabulary, and reading comprehension questions:

We should memorize the texts. One of the teachers had told her students to memorize the passages if they wanted to get high marks in the quizzes!....... All the gap fillings are exactly from the sentences of the book. Exactly! Word by word! So we have to memorize the text.

One of the formative exams was supposed to be from three units, but the vocabulary was selected from only one unit! This means there was no table of specifications for the exams which led to students’ complaints. No content validity.

We studied three units for the quiz, but the words were selected from only one of the three units! What if we didn’t have time to study that unit by chance? Are we to lose the vocabulary score?

The students were somehow lost as to what the goal of testing was. They did not know where to start from and where they were going, technically speaking what the goal of instruction was. They really did not know what they were expected to do and how much they should learn. They were unsure whether what they were learning was applicable and practical in the out-of-the-class world!

I told Ali (a classmate) the other day that what we are going to do with all these words. We cannot use them while talking to a tourist in the street. Even our own technical books do NOT have these words.
Students’ last complaint was about the only audio CD available for the students. Shockingly, each unit was not separated in selectable tracks for each unit; therefore, students had to spend ample time on searching for the unit they intended to listen, which ultimately, in most cases, ended in task abandonment and students’ lack of motivation for listening to the audio CD.

I tried to find unit three but I couldn’t. The units are not separated. There is one track and all the units are in it. It is not our first time. Look at tactics for listening. Each unit has one separated and named track. So we can easily spot the units.

Besides their ideas about the shortcomings of their General English Course, they commented on some general breakdowns in EAP in their own field of study. One of these areas was the necessity of having some more English courses related to their own academic field of study. Usually the original texts available in the market are translated poorly which obliges the students to read the original work of the author and not the translated one. This means the stakeholders must design reading courses in accordance with students’ academic field of study.

Courses which help students to communicate orally are requested. Students felt the need to understand lectures presented in English language and the need to communicate with native speakers in conferences, workshops, and lectures. This aim is achieved by designing communicative courses in the university.

**Discussion and Conclusion**

In this study, the researchers investigated the problematic and controversial teaching and learning aspects of EAP at KNT University of Science and Technology located in Tehran, Iran. To reach this end, 40 students summarized three short stories which were analyzed by two raters with an agreement of 85%. The existing errors were listed (Table 1-4). Moreover, 20 students were interviewed in order to shed some light on language learning context at KNT University.

As it was evident from the students’ ideas and the summative/formative exams, vocabulary was a key factor in English teaching at KNT University of Science and Technology. According to Nation (1990), 90 percent of the vocabulary in a prose passage should be known for students in order for the students to understand the passage. In contrast, in this study, almost 70 percent of the new words in each page of the passages (short stories) were new to the
students which hindered understanding of the passage. Interviewed students unanimously expressed that the number of the new words had bothered them.

Based on the findings from the interviews, students mostly complained about the high number of new words in texts and the content of the exams they were to take. This quality caused them to allot more time to the learning of vocabulary and even memorizing the texts rather than comprehending the passages and enhancing their general understanding. Aggrandizing the importance of vocabulary is considered to be underlining bottom-up activities mostly, which moves students toward rote learning. To develop meaningful learning among students, it is recommended that teachers emphasize general understanding of texts through techniques of reading and guessing-the-meaning-from-context and reduce the number of new words in a text. This way, students have more time to be involved in the top-down process of learning and develop a subsequent better command of grammar and vocabulary.

Based on the results of the study, the most frequent errors among students were grammatical ones. This entails the need for considering these types of errors including tense, articles, connectors, prepositions, pronouns, specifically and clauses, possessives, parallel structure, subject/verb agreement, and singular/plural in general in the definition of the course syllabus. It is suggested that teachers provide students with more tasks on these problematic areas through practices such as making sentences or conversations, so that they practice grammar within the framework of the real-use-of language.

During the late 1970s, ESP course designers started to carry out needs analyses of their students’ future linguistic requirements (Clapham, 2000). Needs analysis in EAP course and materials design (Flowerdew & Peacock, 2001; Hyland & Hamp-Lyons, 2002) seems to be central to academic contexts. These needs analyses were often expressed in terms of notions and functions (Van Ek & Trim, 1991). In line with the same studies, students who were interviewed in this study expressed the need to communicate effectively.

As EAP teachers, we have duty towards communicatively mediated instruction to include both academic and cultural considerations. We cannot deny the importance of experiencing all language skills in a variety of relevant contexts for students (Farr, 2003). We accept the significance of and the need for further attention to the skills of speaking and listening. Johns and Swales (2002, p. 26) stressed the need for exposing EAP students to a variety of experiences and contexts, not only for cultural reasons but also for ensuring a
broader understanding of the academic community to which they are affiliated. This goal is fulfilled with a change in EAP syllabus in academic contexts in Iran. We do suggest specifying more time to EAP courses as well as emphasizing on all four skills which means there must be a governmental support in the form of EAP enhancement program. Furthermore, EAP teacher training courses in addition to employing EAP professionals seems to be necessary in Iran. The universities can establish self-access centers where students can work independently or in small teacher-supervised groups on language and study skills related to their needs and interests (Detaramani & Chan, 1999). This is achievable.

**Recommendations**

The findings of this study call for a needs analysis which will further lead to redesigning the course book. Also attention to the teaching of general writing formats, teamwork writing as well as multiple-drafting seems to be necessary. Practical tasks on inter-sentential ties (cohesion, coherence, and unity) are also required to advance students' ability to logically bind their opinions.

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