

**Iranian scholars and scientific publication in
English:
Attitudes, problems, and strategies**

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Abstract

This study reports the results of an investigation which sought Iranian scholars' attitudes, problems, and strategies publishing research articles in English. To this end, interviews were conducted with 72 academics across different disciplines (Sciences, Social Sciences, and Art and Humanities); then, a coding scheme was developed based on the relevant literature and the information provided by interviewees to codify the interviews. Findings revealed a detailed categorization of the participants' attitudes, problems, and strategies. It was found that Iranian scholars had a positive attitude towards publishing papers in English as a means of knowledge production. The results also supported the findings of previous research that the most important problems during writing research articles for non-native scholars and scientists were the introduction and discussion sections. Also, the major strategies reported were revising and editing, discipline-specific reading, and practicing writing. Implications are discussed for EAP courses, university authorities, and the editorial boards and reviewers of the journals.

Key words: scientific publication, attitudes, problems, strategies

1. Introduction

In recent years the number of published research articles and journals as a means of disseminating scientific knowledge has increased. English as the International Language of Scientific Publication (EILSP) (Bidlake, 2008) has assumed a vital role in knowledge dissemination in the academic world. Though the advantages of EILSP are considerable, Bidlake (2008) discusses the main negative consequences of EILSP for non-native-English-speaker (NNES)¹ researchers at linguistic and geopolitical levels and for the international scientific community at local and global levels.

The dominance of English as the language of scientific production (the lingua franca of the science) or as a "dominating and overpowering force" (Tardy 2004, p. 247) has positive and negative aspects (Flowerdew, 1999a, 1999b). On the one hand, it facilitates international understanding, global economic integration and growth, and the modernization of developing countries and on the other hand, some believe, it brings with it cultural imperialism and linguistic hegemony (Phillipson, 1992, 1998).

Hence, with "globalization and marketization of the academy" (Flowerdew, 2008, p.77), scholars all around the world are under increasing pressure to publish in English. English is considered as the key to success in an English-only research world (Belcher, 2007) and is being recognized as an academic worth (Duszak & Lewkowicz, 2008). Today the "publish or perish" law (Garfield, 2000 cited in Mišak, Marušić, & Marušić, 2005) of academic environments makes researchers show their worth in terms of their research output which is evaluated by the number and quality of their publications indexed in the major citation indices (Curry & Lillis, 2004; Flowerdew, 1999a, 1999b). Moreover, the researcher's output is usually as the criterion for promotions and research grants.

¹For the purposes of this paper, the term NNES refers to an English user who speaks English as a foreign language. Other terms are used today instead of NNES such as English as an Additional Language (EAL) writer, multilingual scholar, etc.

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The issue of NNEs publishing in the international journals through English for Research Publication Purposes (ERRP, Cargill and Burgess, 2008) can address the concerns of professional researchers and post-graduate students who need to publish. Previous studies that explored writing for scholarly publication have included NNE novice researchers, doctoral students, junior scholars, and experienced or senior researchers (Swales, 2004) (see, for example, Cho, 2004; Flowerdew & Li, 2007; Gosden, 1995, 1996; Hasrati, 2005; Li, 2006a, 2006b; Li & Flowerdew, 2007; Riazi, 1997; Swales, 1990).

These studies have provided useful insights about NNE publishing experiences including different L1 languages, e.g., Spanish (St. John, 1987), Scandinavian (Jernudd & Baldauf, 1987 cited in Swales 1990), Hungarian (Medgyes & Kaplan, 1992), Hong Kong (Flowerdew, 1999a, 1999b, 2000), Danish (Phillipson & Skutnabb-Kangas, 2000), Hungarian, Slovakian, Spanish, Portuguese (Curry & Lillis, 2004; Lillis & Curry, 2006), Chinese (Liu, 2004), Japanese (Casanave, 1998; Okamura, 2006), Armenian (Sahakyan, 2006), Polish (Duszak & Lewkowicz, 2008), Turkish (Buckingham, 2008), and Persian (Hasrati, 2005; Riazi, 1997). A very brief account of some of these studies will follow.

Okamura (2006) conducted interviews with 13 Japanese researchers. The study focused on not only their difficulties but also on their strategies to cope with them. The lack of adequate vocabulary was the difficulty mentioned by all the researchers. Also, the learning strategies used by them could be divided into two sets: reading academic texts in their field (subject knowledge-oriented) which was adopted by all, and giving direct attention to mastering English speakers' language use (language-oriented strategies) employed by only 5 researchers.

Flowerdew (1999a) used a large scale questionnaire and conducted interviews (1999b) with Chinese academics in Hong Kong to identify their problems in writing for publication in English. These problems were as follows: they had less facility of expression; it took them longer to write, they had a less rich vocabulary; it was

difficult for them to make claims for their research with the appropriate amount of force; their process of composition might be influenced by their L1; more problems with qualitative articles than quantitative articles; they were restricted to a simple style; and the introduction and discussion of research articles were problematic parts for them.

Riazi (1997) used questionnaires, interviews, text analysis, and process logs to study four Iranian doctoral students in their second year of residency at a Canadian university. His objective was to determine how these students acquired academic literacy appropriate to their chosen disciplines. The study was conducted over 5 months as the participants, all education majors, prepared for and performed writing tasks assigned in their graduate seminar courses. Findings of the study suggested that acquiring disciplinary literacy in L2 in a graduate program such as education is fundamentally an interactive social-cognitive process in that production of the texts required extensive interaction between the individual's cognitive processes and social/contextual factors in different ways. Hasrati (2005) studied the academic socialization of thirteen Iranian PhD students in five UK universities particularly focusing on the relationship between these students and their supervisors. The study included eight engineering and five social sciences/humanities students, as well as four engineering and two social sciences/humanities supervisors. It was argued that the Ph.D. students in this study learned most of what they needed through informal interactions with their supervisors and other Ph.D. students. Also it was suggested that legitimate peripheral participation was in line with informal routes to learning, an aspect which seemed to be partially ignored in recent Ph.D. training guidelines.

2. The Present Study

Iran is regarded as a newly industrialized country (NIC) within the developing world (Salager-Meyer, 2008) which is nevertheless periphery in terms of international science publishing. This is while

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in different universities of Iran (almost 100 state universities and 290 Islamic Azad and non-for-profit universities in 30 different provinces), the major promotion criterion for different disciplines is the number of publication in international refereed journals. Considering the conflicts between Iran and the Western (English-speaking) world due to political issues and scientific sanctions against Iranians, it seems necessary to illuminate Iranian academics' status in attempting to make their intellectual voice get heard. Therefore, in an attempt to investigate the situation for NNES scholars researching in different fields, this paper reports a study investigating the attitudes, problems, and strategies of Iranian scholars publishing in English. In particular, it looks at the results of an interview survey illustrating academics' academic writing practices and experiences. Hence, this study addressed the following research questions:

1. What are the Iranian scholars' attitudes towards their situations as NNEs publishing articles in English?
2. What are the main problems and difficulties facing Iranian scholars publishing research articles in English in international refereed journals?
3. What strategies do Iranian scholars use to publish articles in English in international refereed journals?

3. Method

3.1 Participants

In response to an invitation letter in that the purposes of the research were explained, 72 faculty members (63 males and 9 females) of one of the first five top universities of Iran agreed to participate in the study. This sample represents 550 faculty members of the university. All participants spoke Persian as their native language and used English as their foreign language for the purposes of publication and presenting papers in conferences. Their age ranged

from mid-forties to late seventies and were from various fields (Table 1) within different disciplines²: Sciences (39), Social Sciences (15), and Art and Humanities (18) and with different ranks (31 assistant professors, 24 associate professors, and 17 full professors). Twenty two participants (30.6%) had got their Ph.D.s in Iran and fifty of them (69.4%) from other countries mostly western countries.

Table 1: Three major disciplines and their related fields based on ISI categorization

Sciences	Social Sciences	Art and Humanities
1. Agricultural Engineering	1. Economics	1. Architecture
2. Biology	2. Law ³	2. History
3. Chemistry	3. Management	3. Language Teaching and Linguistics
4. Engineering, Chemical	4. Political Science	4. Literature, English
5. Engineering, Civil	5. Psychology	5. Literature, Persian
6. Engineering, Computer	6. Sociology	6. Theology
7. Engineering, Electronic		
8. Engineering, Mechanical		
9. Engineering, Metallurgical		
10. Geology		
11. Mathematics		
12. Physics		
13. Veterinary Sciences		

In terms of teaching experience, seven had 5 years or less teaching experience; sixty had between 6 and 30 years experience;

² It is based on the ISI (Institute of Scientific Information) categorization. Coffin, Curry, Goodman, Hewings, Lillis, and Swann (2003, p. 46) also present a categorization of disciplines which is almost the same as ISI: Sciences, Social Sciences, Humanities/Arts, and Applied Disciplines.

³ The faculty of law and political science provides both of the subject categories in this university.

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and five had more than 30 years experience. With regard to publishing in English language journals, 76.4% had experience in this regard.

3.2 Instrument

Interview was used as the main data collection instrument as it has been the legitimate data collection instrument in such studies (Cohen, Manion, & Morrison, 2000). In most of the previous studies, interview has been used as the method of data collection (see, for example, Buckingham, 2008; Casanave, 1998; Cho, 2004; Curry & Lillis, 2004; Flowerdew, 1999b, 2000, 2001; Flowerdew & Li, 2007; Gosden, 1996; Li, 2006a, 2006b; Li & Flowerdew, 2007; Okamura, 2006; Riazi, 1997; Tardy, 2004). The framework of interview questions included three sections on attitudes, problems, and strategies (see, Appendix A).

3.3 Data collection and analysis procedures

Interviews were conducted in Persian (participants' native language) to prevent any language barrier. The interviews were conducted in the offices of the participants on university campus. The interviews were semi-structured in that depending on the participants' answers to set questions, some spontaneous questions were also asked. There was an attempt to create a friendly atmosphere and encourage the interviewees to freely express their experiences in publishing their research articles in English. The interviews lasted 9-82 minutes and all were recorded with participants' consent. They were then transcribed for codification. Only two participants didn't permit recording their interviews and thus notes were taken.

A coding scheme (see Appendix B) was developed based on a review of the related literature and the collected data. There were three main categories in the coding scheme: attitudes, problems, and strategies with their related items. To check the intra- and inter-coder reliability of the coding scheme, 5% of the transcribed data (almost 30 transcribed pages) were randomly selected to be coded by the same coder with a two-week interval and another coder.

Results indicated an intra- and inter-coder reliability of 0.89 and 0.82 respectively. Then the whole data were coded by one of the coders and were organized for the extraction of codes and necessary analyses. The data collection was done over one academic semester. Some examples of the coded data are presented below:

Interviewer: What are your attitudes towards publishing research articles in English in international refereed journals?

Interviewee (Chemistry): I think I can contribute to my own field through publishing papers [AIA1]. Therefore, it is valuable and I've attempted to publish in different journals [AIA2]. In fact, I believe that if I want to publish something, it should be published in a credible place like ISI journals [AIIA1].

Interviewer: What are some of the problems you experience publishing research articles in English?

Interviewee (English literature): The main difficulty for Iranian scholars is that most international journals especially those in the United States of America, England, and Canada are politically influenced by their governments, so they are biased against scholars who write from inside Iran [AIIA1d].

Interviewer: What are some of the discipline-specific problems you have publishing research articles in English?

Interviewee (Physics): One of our problems is that we don't have data [PIIIB5]. The data collection needs advanced technology; therefore we have to wait for a sabbatical leave to do some data collection.

Interviewer: What strategies do you use to improve your writing in English?

Interviewee (Geology): I think there is a principle: when I want to write an article, it is necessary to read many articles [SVIIB] on that topic. During reading, my mind gets shaped; some of the paragraphs and sentences [SVIIB4] are so beautiful and relevant that I write them down [SVIIB5] to use them in future. In fact, I include these sentences in my paper.

4. Results

After the codification of whole data, 1173 codes were extracted from the interviews. Of the three main categories in the coding scheme: attitudes with 259 codes, problems with 467 codes, and strategies with 447 codes formed the data. It is necessary to mention that each issue was coded once even if the interviewee talked about it several times during his/her interview. The most important themes in each category will be presented in this section.

4.1 Attitudes

The category of attitudes had two subcategories of research and evaluation of research activities. On the whole, 259 codes were related to participants' attitudes towards scientific publication in English. The major themes on scholars' attitudes towards scientific publication were as the following.

Knowledge production and getting published as the main aims of research: 94.4 % of the scholars believed that their aim of research was knowledge production; and, they considered it as a necessity to get published. They believed that their research had contribution to the disciplinary knowledge leading into international recognition. Hence, they had a positive attitude towards scientific publication in English. In terms of the language of publication, 37.5% expressed their attitudes towards the language of publication and emphasized on the fact that in addition to publishing in international refereed journals they should attempt to publish in their native language in the local (bilingual) journals. The following are some quotes from the participants in this regard.

The publication of articles in foreign journals has different aspects. First you make your achievements accessible for the international community. A greater number of readers will read the journal and use the article. Second it is a sign of a country's internal activities showing that you are in line with the researches done in the world in your own field.

I think one of the ways to measure the amount of knowledge production of one country in the world is publishing articles in the international language which is English today. The point is disseminating knowledge in the journals with global audience.

In my opinion science is something international; therefore different thoughts and ideas should be communicated between internal and external scientists. One of the ways for this communication to happen is publishing English articles.

I think the responsibility of a university professor is developing and disseminating science and adding new knowledge to the field. To achieve this goal, we should publish articles in English in the journals. I don't believe that we should only publish in those journals; we should pay attention to our language and internal journals too.

There should be an emphasis over English articles, but this doesn't mean that our Persian journals are not credible. Too much emphasis on English articles and imposing limitations on professors will decrease their self-esteem.

Evaluation of research activities on the basis of scientific publication in English: Almost 46% of the scholars mentioned that the scientific publication in English can be as the criterion for the evaluation of their research activities. They also emphasized on the fact that the internal evaluation of the research activities should be discipline-bound. For example academics in some of the subject categories of Social Sciences and Humanities such as Law and Political Science, Sociology (Women Studies), History, Theology, and Persian Literature believed that the evaluation of their research activities shouldn't be the same as Sciences. The following quotes illustrate the issue.

If our articles are published in specialized journals, then there is a criterion to evaluate our research activities. This can guarantee that we are doing at the same international level as the articles are refereed and evaluated on the basis of scientific standards.

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The evaluation of research activities depends on the specialization and discipline. For example, some of the special subject categories of Humanities such as theology, Persian literature are exceptions in this regard.

The evaluation system should be different for Sciences and Humanities. There should be different criteria.

Political bias against Iranian scholars: 29.1% of the participants felt they are biased against because of their nationality and political affairs. The following are some example quotes.

The point that I feel in my correspondences is their bias against my affiliation. As soon as they see the word 'Iran' in my affiliation, they instantly show their prejudice and judgment.

I sent a manuscript for the 'X' journal. They responded because you are Iranian, we are unable to publish your paper. I have its document and sent it to the secretary of Ministry of Science, Research, and Technology. Another example was 'Y' journal. They also explicitly said that they don't publish my work. This is racism and discrimination due to political issues; and it is really immoral. Of course, there are some other journals that publish my works.

While papers from scholars in other countries get accepted and published, when an article is received from Iran you don't know what their judgement would be. Is it worth reading? Is it worth responding? Do they like to publish it or not? That's why all university professors have troubles with these foreign journals. Why the university requires foreign journals I could never understand.

Regarding the refereeing of the articles, it is influenced by the political issues; sometimes, there is no answer, and in some cases it takes a long time to answer. It is affected by the type of political and international relations between the countries. Even when I submit an article to a conference, I can feel this bias. Of course, part of this problem might be due to language problems. This is why I always try to edit my paper before sending it out. If the English of my article is

not fluent or there are some problems in it, it will surely influence the referee's views.

4.2 Problems

There were three subcategories of problems: research (external and internal factors), writing, and language with an overall 467 codes. In the following section, the main themes of the problems related to research, writing, and language will be presented.

Discipline-specific nature of problems of doing research: 44.4% of the scholars stated that the problems of doing research in different disciplines are discipline-specific in terms of different aspects of research. And they believed this should be taken into account when judging and evaluating university professors' research activities. The following are some example quotes from the interviewees.

The problems in Humanities are more specific. The researches take more time in comparison to Sciences. For example, I did a research which took seven years. Moreover, I should elaborate in detail on the issue while they use formulas and formulaic language.

In Humanities we deal with different value-laden complexities and problems, but experimental sciences, mathematics, medicine, etc. are somehow value-free. Research projects in sciences are mostly done in laboratories and with substances, but this is not the case in humanities.

In sciences there is usually no problem of content for researchers. However, in Humanities there is the problem of content because it reflects the cultural values and the values of the society.

External and internal problems in doing research: The problems of doing research were reported in two parts: external and internal problems. The problems related to the external factors included management, funding, equipment and facilities, materials, teaching load, administrative responsibilities, team-working, freedom of expression, and atmosphere. Some other problems were reported by the participants that were caused due to internal factors such as

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topic, type, literature, methods, data, samples, and results of the research. The following quotes illustrate the problems.

First there are problems in research management policies. They should provide the necessary facilities. We don't have the equipment. The funding is low and it is distributed improperly.

There are some journals that we are not subscribed to due to high subscription fees. Therefore one of my problems is the lack of some of the necessary references on the issue.

One of the problems I always have is finding proper topics for research. This was because I am away from the center. They are not interested in the topics we work on and we can't easily publish about our local and national problems in their journals.

You know in American universities professors rarely teach more than two courses. They use their time for doing research. But when you are teaching the whole week then when are you going to do research? Moreover, here as a researcher you are alone; there are no research groups throughout the country.

In the laboratory, I need some special materials such as colours, enzymes, etc. which are very expensive. The shortage and lack of these materials hinder me from doing research. I worked on some of these problems for five years; then I put it aside because there were no results.

Writing "Introduction" and "Discussion": 66.6% of the interviewees pointed out that the introduction/discussion or both are the most difficult sections of the research article to write.

The discussion is the most difficult section. Because you should know about different aspects of the issue under discussion and read many articles in order to be able to compare your results with those of other studies.

The discussion is the main part of the research article. It is really time-consuming and I should work on it a lot and write it very carefully. I think it is the main section of the article.

Writing the discussion section is very difficult. This is where you want to extract the essence of your research. Certainly you can't use others' format because something new is being developed. It needs interpretation which is a high level skill.

Based on my own experience, I think the most important and the most difficult part is the introduction. If the referees don't recognize your main goal in doing that research, they won't continue reading the rest of your article. Therefore, I spend more time on the introduction section. The way you link your work with others and try to convince the audience about the necessity of your research is really important in this part.

The Introduction is the most difficult part for me. The issue has different aspects to discuss which I should choose from among them. Sometimes I write three or four drafts of the introduction section to get to the finalized one.

Writing problems: 38.8% of the scholars referred to writing problems. Also, different writing problems such as argumentation and elaboration, drafting, L1 interference and the like were discussed.

Even if you want to write in Persian, you have problems. Writing is composition and composition is creation. Creating a piece of written material has its own problems. My native language is not English; therefore, in comparison to native speakers of English it takes more time.

Sometimes I change my arguments two or three times. I try to look at the issue from different perspectives and to argue it in a better way. I present the data in the tables, but the explanation and justification of the results is difficult. It is hard to get my points across to the reader.

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Sometimes I unconsciously write based on the Persian structure in English, and I think this is the effect of my native language. My thinking structure is Persian. It will affect my English writing. I try to get rid of Persian thinking structure when writing in English through practice.

Language problems: 51.3% of the interviewees talked about language problems. Different language problems were specifically stated such as facility of expression, vocabulary, grammar, punctuation, and spelling.

The general problem is the unfamiliarity with the English language for the purposes of publication. My problem is fluency and facility of expression in English.

Sometimes I should find the proper words; therefore, I refer to the books on that issue and get help from them to find the most appropriate terms. I can easily use the phrases and idioms in my native language, but in English it is difficult for me to use them like a native speaker of English.

I think I don't have their command of expression. Instead of one short sentence, I use two sentences to get the concepts across. They express whatever they want easily, but it is difficult for me to express myself.

4.3 Strategies

There were research, writing and learning strategies under this category. 447 codes related to different types of strategies were identified. The most important themes were as the following.

Revising and editing as the most important writing strategy: Revising and editing was the main writing strategy reported by 70.8% of the scholars.

I start typing the article as the first draft. Then I continuously do the corrections and revisions. For example, yesterday I submitted an article. I had revised and edited this article at least ten to twelve times.

I try to give my article to one or two colleagues who have published more than me to comment on its English and scientific content. This type of cooperation is very common in our department.

Discipline-specific reading as the most essential learning strategy

Discipline-specific reading was the second important learning strategy reported by 66.6% of the scholars. Most of them used the texts as models to learn about writing styles, sentence structures, and vocabulary. Also some of them reported about preparing and finding new topics for their future research during reading.

One of the things that helped me very much in writing articles was reading a lot of articles. As the editor of one of the journals, I had to read many articles from different countries every night. I read critically to find the mistakes. I learnt a lot in this way.

I think reading too many articles is one of the things which made me competent in writing. Everyday without exceptions I read some new articles and take notes of beautiful sentences.

Writing practice and experience: The third important strategy reported by 48.6% of the scholars was writing practice and experience.

The next phase is experience. Writing is practice. In the next step I wrote as much as I could. This helped me get rid of my writing problems. Practice makes perfect. I tried to read and write a lot.

Some other strategies used by academics were time and effort, using graduate students and joint research with colleagues, and benefiting from sabbatical leaves and networking.

Time and effort

I spend a lot of time to publish my article in my favorite journal. It is really a time-consuming process. Sometimes it takes more than one year. Therefore it needs my hard working and effort.

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Using graduate students and joint research with colleagues

Now most of my articles are with my Ph.D. students. I give the idea, and my graduate students (Ph.D. and M.S.) work on them in the laboratory. The results are published in the form of articles.

Some of the projects or theses are done jointly with my colleagues. The number of these joint researchers is less than my articles with my graduate students.

Sabbatical leaves and networking

The sabbatical leave helped me a lot to get familiar with the most recent issues in my own field and learn about research methods better. I went to sabbatical in 2000-2001. It was almost seven or eight years after my Ph.D. I had just five articles at that time. After my sabbatical leave and from 2001 to 2006, I wrote 35 articles. In a one-year sabbatical I learnt as much as ten years. I have email correspondences with my foreign colleagues. We've written four joint articles with each other.

5. Discussion

This study attempted to consider almost all the salient elements involved in the process of writing and publishing research papers in English by Iranian scholars. Participants took part in interviews and by developing a coding scheme of attitudes, problems, and strategies related to scientific publication in English, the transcripts of the participants' interviews were codified for important issues. In comparison to previous studies, this study attempted to include a greater number of participants from different subject categories within different disciplines.

With respect to the findings of the study, findings on the attitudes of the Iranian scholars towards scientific publication in English add to the literature of the field. According to Flowerdew (1999b), there were no systematic studies on NNS scholars' attitudes towards writing in English except the statements by Scandinavian researchers (Jernudd & Baldauf, 1987 cited in Swales 1990) and Spanish scientists (St. John, 1987). Furthermore, over two

thirds of the Cantonese L1 academics in Flowerdew's (1999a) study felt that they were at a disadvantage when writing for publication in English compared to NSs. In the present study, the attitudes of the Iranian scholars towards publishing English research articles in international refereed journals had two major subcategories: attitudes on research and evaluation of research activities. The Iranian scholars didn't feel to be at a disadvantage in comparison to NSs, but they asserted that publishing in English needs just more time and effort in comparison to NSs. As Wood (1997) stated:

From the number of articles published by those whose native language is not English in prestigious international journals, it is obvious that being a native speaker is not an absolute prerequisite to publication. (p. 2)

While some studies ascribed multilingual scholars' publishing in English to some orientations in the academic environments, such as degree requirement (Gosden, 1996; Li, 2006a) or institutional policies for promotion and awards (Curry & Lillis, 2004; Flowerdew, 1999a; Li, 2006b; Lillis & Curry, 2006), others revealed findings showing the other side of the coin. For example, in St. John's study (1987) some of the Spanish scholars reported the desire for contributing to knowledge production as the main reason for their publishing in English. Similarly, three out of six Chinese scholars participating in Liu's (2004) study stated that they also view publishing in English as a great learning opportunity. In the present study, the Iranian scholars emphasized on the knowledge production aspect of scientific publication in English and considered it as a necessity leading to contribution to the disciplinary knowledge of the field and international recognition. Also, the Iranian scholars stressed that other alternatives of knowledge production and national and local needs must be taken into account too. Another interesting point was that less than one fifth of them believed that in different subject categories of sciences, social sciences, and humanities/arts, there should be different criteria for evaluating the amount of scientific publication in English, that is,

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the internal evaluation of research activities as a promotion criterion in the university system should be discipline-specific.

Regarding the bias against Iranian scholars, findings of this study also support the findings of previous research studies (see, for example, Belcher, 2007; Canagarajah, 1996; Cho, 2004; Flowerdew, 1999a, 2000; Gibbs, 1995; Gosden, 1992; Li, 2006b; Swales, 1998; Wood, 1997) which indicated that there is bias against researchers by referees and editors. Less than one third of the participants felt they are biased against because of their nationality and political affairs (political bias).

Findings on problems in writing for publication in English supported the literature on the issue (see, for example, Adams-Smith, 1984; Bazerman, 1988; Dudley-Evans, 1994; Johns, 1993; Mauranen, 1993 cited in Buckingham, 2008; Flowerdew 1999a, 1999b; St. John, 1987; Swales, 1990). The problems included writing introduction and discussion sections of the papers, language, argumentation, vocabulary, facility of expression, grammar, L1 and cultural interference, audience, organization, referencing, and citing the literature.

As well as identifying the writing and language problems in scientific publication in English, this research has presented a categorization of research problems caused by internal and external factors involved in doing research. Almost one half of the scholars maintained that the problems of doing research were discipline-specific, that is, as researchers they had experienced different kinds of problems which affected their amount of knowledge production. Also, they believed that some of the disciplines like social sciences and humanities/arts were value-laden while others like sciences were value-free. This made publication more difficult for scholars from the former category. The findings of this study on the problems of funding and access to literature support the previous researches (see, for example, Canagarajah, 1996; Gibbs, 1995; Man, Weinkauff, Tsang, & Sin, 2004).

Regarding the strategies employed by the Iranian scholars for scientific publication in English, this investigation is supportive of

the strategies recorded in other studies such as revising and editing, attending to audience, using a co-author (see, for example, Buckingham, 2008; Flowerdew, 1999a), and discipline-specific reading (Buckingham, 2008; Okamura, 2006). Furthermore, the participants in this study reported on the use of other different research, writing, and learning strategies which were discussed. Finally, the learning strategies were divided into two subsets: language and reading (discipline-specific). Okamura (2006) suggested that reading academic texts in ones' field (subject knowledge-oriented strategies) results in learning typical writing patterns. In the present study, the scholars not only reported on learning writing patterns but also writing styles, sentence structures, vocabulary, topics, and register through reading extensively in their own field.

6. Conclusion

Based on the findings of this study, it was confirmed that the Iranian scholars had a positive attitude towards publishing papers in English as a means of knowledge production. Therefore, their main reason for publishing in English was the desire for contributing to the body of the knowledge of their field. Regarding participants' problems in preparing papers in English, the most important problem during writing research articles was reported to be writing the "introduction" and "discussion" sections. A lot of difficulties encountered by the Iranian scholars were also shared by other academics in the world. In addition to these, the major strategies reported were revising and editing, discipline-specific reading, and writing practice and experience.

As Salager-Mayer (2008) affirms "the triad of science, technology and publication is essential for the survival of developing nations (p. 121)". Hence, if the Iranian scholars hope to make an impact in the field and find career success in academia, they should attempt to empower themselves by the continuous

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involvement in the knowledge construction in their field. This demands patience and authorial persistence (Belcher, 2007).

Hence, the findings of this study seem to have implications at different levels. First, the EAP teachers should try to help students, especially graduate students who are prospective faculty members, to write appropriately and efficiently within their discipline-specific rhetoric. At a high level of policy making, universities should attempt to take measures to remove the problems of doing research to enhance faculty members' publication rates in international refereed journals in English. And there should be instructional support for the scholars to develop their awareness about the genre of scholarly writing in English. Finally, the gatekeepers of scientific publishing (i.e. publishers, referees, editors, reviewers) should be aware of the problems of non-native authors and take them into account if contributions from around the world are sought.

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Appendix A**Interview Questions****Attitudes**

1. What are your attitudes towards publishing research articles in English in international refereed journals?
2. Do you feel unsuccessful in comparison to native speakers of English when you submit an article for publication?
3. Do you think referees and editors are prejudiced against Iranian scholars as non-native-English-speakers (NNESs)?

Problems

1. What are the special problems of Iranian scholars in publishing research articles in English?
2. What are your own problems in writing research articles in English for publication?
3. What are the specific problems of your discipline in publishing research articles in English?
4. What are the most/least problematic parts of the research article (Introduction, Method, Results, and Discussion) for you?
5. Which parts of the research article do referees and editors mostly ask you to revise?

Strategies

1. What strategies do you use to improve your writing in English when preparing research articles for publication?

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		Attitudes		Categories		Problems		Strategies			
		Subcategories/Items	Codes	Subcategories/Items	Codes	Subcategories/Items	Codes	Subcategories/Items	Codes		
I.	Research: A. Aim	1. Knowledge production	AI	III.	Research: A. External factors	PIII	VI.	Research:			
			AIA							PIIIA	A. Sabbaticals
			AIA1							PIIIA1	B. Networking
			AIA1a							PIIIA2	C. Joint research with colleagues
										PIIIA3	1. Foreigners
										PIIIA4	2. Iranians
										PIIIA5	D. Using graduate students
										PIIIA6	E. Experience
										PIIIB	F. Thinking
										PIIIB1	G. Innovation
	PIIIB2	H. Time and effort									
	PIIIB3										
	PIIIB4										
	PIIIB5										
	PIIIB6										
	PIIIB7										
	PIIIB8										
	PIIIB9										
II.	Evaluation of research activities: A. External	1. ISI journals	AII	IV.	Writing:	PIV	VII.	Writing:			
			AIIA							PIVA	A. Writing in L ₂
			AIIA1							PIVB	B. Preparing an outline
			AIIA1a							PIVC	C. Using notes
			AIIA1b							PIVD	D. Clarification
										PIVE	E. Writing the easiest part first
										PIVE1	F. Author's point of view
										PIVE2	G. Attending to the audience
										PIVE3	H. Using one style (American/British)
										PIVF	I. Using synonymy
	PIVG	J. Using codified and formulaic language									
	PIVH	K. Revising and editing									
	PV	L. Using a co-author									
	PVA	M. Target journal's format									
	PVB	N. Writing guidelines									
	PVC	O. Writing practice and experience									
	PVD										
	PVE										
	PVF										
	PVG										
	PVH										
	B. Internal	1. Promotion criterion	AIIB	V.	Language:	PV	VIII.	Learning:			
			AIIB1							PVA	A. Language
			AIIB1a							PVB	1. Dictionaries
			AIIB1b							PVC	2. Pleasure reading
										PVD	3. Watching Films
										PVE	4. Communication with NS
	PVF	B. Reading (disciplinary knowledge)									
	PVG	1. Register									
	PVH	2. Writing styles									
		3. Writing patterns									
		4. Sentence structures									
		5. Taking notes									
		6. Vocabulary									
		7. Topics									

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