Higher Education and Research Collaboration between Iran and UK

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Abstract
This paper aims to display Iran's collaborations based on previous research findings and introduces the recent international collaboration programs with emphasis on UK collaborations. It was found that Iran's scientific productivity and collaboration has sharply increased in the last five years comparing with her performance in the last decades. England was Iran's second major collaborative country during 1985-2003.

Introduction

Interdisciplinary growth of subject fields caused universe knowledge to be more dynamic and ever growing in the last decades. Therefore scientists in any field are no longer able to carry out their works in isolation, and, collaborative research is the effort of intellectual sharing of two or more persons.
The significant and increasingly important channel of diffusion of knowledge in both the public and the business sectors is international collaboration. Its importance has grown as, the number of partnerships among public research centers, universities and firms testify (National Science Foundation, 2002). Collaboration permits the partners to acquire the expertise of each other, by enriching the overall know-how (Hagedoorn et al., 2000).

The benefits of collaborative research to authors and countries caused its increase even faster than the numbers of papers. Presumably, the advantages of collaboration including the fruitful exchange of ideas, the higher quality of collaborative papers, receiving much more citations, are some reasons for this fast increase. In other words, useful science is good sciences as Tuzi (2003) claims: Governmental initiatives in promoting international scientific programs, providing funding for travel, and peripheral countries benefit from international collaboration are some other encouraging matters. In addition, inexpensive communication systems such as electronic mail, remote access to online databases and facilities through the web seem reasonable for such a rapid growth.

Due to the importance and significance of international collaboration, earlier, we studied Iran's scientific collaboration with other countries (Osareh & Wilson, 2001, 2002; Mansouri, 2005). This paper aims to present and discuss earlier findings, and introduce the advancements and challenges of UK & Iran collaboration in Higher Education.

Methodology:

The methodology is based on findings of previous works (Osareh & Wilson, 2001, 2002; Mansouri, 2005), introducing of the results of the UK & Iran collaboration in Higher Education and Research: Achievements & Challenges and Current status of international scientific productivity in Iran.

Review of Literature:

Archibugi & Coco (2004) compared international partnerships for knowledge in business and academia between Europe and the USA. They found that American corporations do not just collaborate among themselves, but they have proven to be very attractive partners also for European Corporations. On the other hand, technological co-operation among European firms strongly declined in the 1990s, not only in relative terms, but also in absolute terms. They compared these trends with what has happened in academic collaborations measured by scientific co-authored papers. In this domain Europeans are more and more likely to collaborate among each other, and they are also becoming more attractive for American scientist.

Co-authorship networks and patterns of scientific collaboration were studied by Newman (2004). He discussed the structure of three networks of scientific collaborations including biomedical research, physics, and mathematics, to answer some questions about collaboration patterns, such as the number of papers authors write, how many people they write them with, what the typical distance

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between scientists is through the network, and how patterns of collaboration vary between subjects and over time. The author also summarized a number of recent results by authors on co-authorship patterns.

Iran's Recent Collaborative Programs

The French embassy in Iran collaborating with center for International Research and Collaboration (ISMO) is an initiative to build stronger scientific collaborations between Iran and France through Jundi Shapour Program. The fields of interest are vast and include Social sciences, Earth Sciences, Engineering, and Health Sciences. By the first announcement, which was out on the summer of 2004, ISMO received 50 collaborative projects requesting for support of Jundi Shapour Program (Mansouri, 2005).

The purpose of another program called *Invited Collaborative Research Program (ICRP)* is to enhance the quality of the ongoing doctoral research training projects in universities of Iran; ISMO invites foreign scientists to Iran to cooperate with Iranian leading scientists under the ICRP. ICRP is not restricted to foreign scientists currently active in scientific research, but also hopes to benefit from the experiences of retired foreign scientists. We believe there is a vast potential in the large number of retired researchers who still have retained their natural scientific curiosity, drive and alertness to continue their intellectual quest beyond this bureaucratic date barrier (more information available at:http://www.ismo.ir).

Center for International Research and Collaboration provides and supports some specific activities under supporting the flow of scientists (SFS) among its permanent programs. This is to have the ground for further collaboration between Iranian and foreign scientists or scientific institutions in different scientific fields. This program is called *ISMO program on supporting the flow of scientists (SFS)* (available at:http://www.ismo.ir).

On 19-20 January, 2005 Central Library of Shahid Chamran University in Ahvas-Iran hosted an International conference entitled: *UK & Iran Collaboration in Higher Education and Research: advancements and challenges*, Organized by Center for Research and Collaboration (ISMO), British Council (Iran), and Shahid Chamran University (Ahvaz-Iran). This conference contained 2 group discussion topics:

1. Future collaboration between Iranian and British universities: possible strategies and challenges.
2. Iran and UK universities strength and weaknesses: what are the bases for collaborations?

The participants in this conference came up with the following results:

Basis for Collaborations of Iran with UK: Why should Iran chose UK, UK chose Iran?
Demand for Individuals:

- High quality globally recognizing qualification
- Subject areas not fully covered in Iran
- Broader experience – improved English Language

Institutions
UK: Wants good research students – keep research team going, Unique Iranian research opportunities: genetics, botany, history, architecture, etc.
Iran: Practical addition to theoretical knowledge, Reputation; Language; UK is known; good image.
Both: Mutual interest – subjects, Individual contracts – staff, Acceptable financial arrangements – to university – flexibility, Desire to be an international institution, Improved publication record.
Challenges:
Language: English- minimum standards for courses.
Finance: UK: expensive: bench fees: employment.
*Mutuality***:** Not enough UK reciprocity

- Inaccurate perceptions
- Lack of understanding of our positions

Non-return of students: Employed in UK or elsewhere
Sabbaticals: Funding

Access to Publications
Strategies:

1. *Joint degrees:*
    a) Masters:
    b) PhD.
2. *Research Collaboration:*
    a) Professional qualification- insurance, accounting, oil? (recognition)
    b) Joint workshops and conferences
    c) Consortia of interested universities in UK and Iran.
    d) Alumni BrIan.
    e) Clearer mutual understanding of each system. (BC etc.)
    f) Student/staff exchange
    g) Promote joint authorship of papers
    h) Develop stronger research base in Iran.
    i) Benchmarking and quality assessment of Iranian higher education
    j) Iranian committee to encourage collaboration

Short term action

a) Publishing these proceedings (Internet?)
b) Publish lists of current links.
c) Initiate BrIAN
d) Making contacts with centers of excellence.
e) Funding for expletory visits to institutions
f) Formation of UK Consortium (Uk and Iran Higher…Results)

Results and Discussions

Iran's Scientific Productivity
Iran's scientific productivity in ISI databases from 1970-2004 was studied. It was shown that, special conditions of war and revolution caused a decrease in scientific productivity from 1979 to 1989. However, a sharp increase from 1990 to 2004 shows changing pattern in Iranian productivity during last years.

The number of book titles published also showed increase: from 274 titles in 1971 to 6850 titles in 1989, 16575 titles in1996 and 31451 titles in 2002. This growth rate showed a great increase among the compared years. Similarly the number of Iranian faculty members increased sharply from 6106 faculty member in 1972 to 67775 in 2004, with a distinguished sharp increase in the number of Assistant professors and Instructors. The number of graduate students in both levels: Msc. And Ph.D. has also been increased form 16000 to more than 41000 (Mansuri, 2005).
Considering Iran's International scientific collaboration, it was found that this country has collaborated with 54 countries in year 2004.
Mostly Iran's scientific collaborative countries are of Group 7, while other major countries such as India, China, Russia etc. are included. England was Iran's second major collaborative country during the studied period (Figure 9).

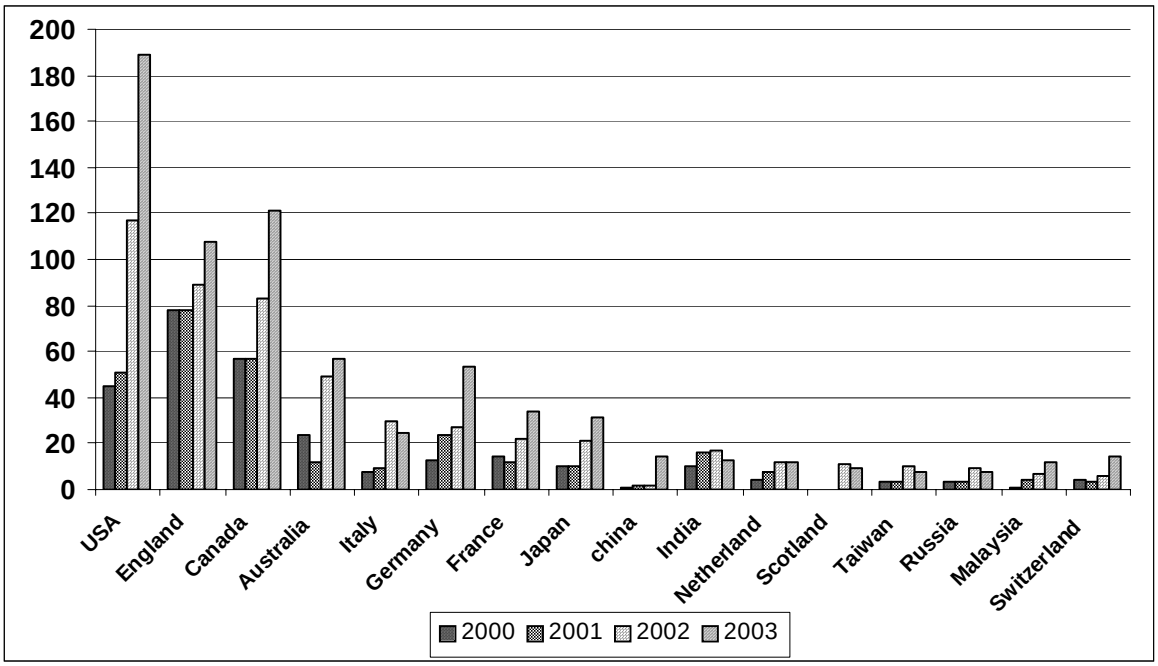

Figure 9. Iran's International collaboration in scientific publications.

As was mentioned in Figure 9, England ranked second among the top 16 collaborative countries with Iran during 2000-2003. In another study we found similar results for years 1985-1999 (see table 1).

Table 1:Extent of Iran's collaboration with other countries during three five-year periods in SCI database

% occs	No. Occs	1995 to 1999 (5545 total GL occs.)	% occs	No. Occs	1990 to 1994 (2045 total GL occs.)	% Occs	No. Occs	1985 to 1989 (1016 total GL occs.)
	4043	Iran		1410	Iran		765	Iran
21.6	324	USA	27.9	177	USA	34.7	87	USA
15.1	227	England	18.6	118	England	20.7	52	England
10.3	154	Canada	10.1	64	Canada	10.0	25	Canada
8.3	125	Germany	7.9	50	Germany	6.0	15	Germany
4.8	72	France	4.7	30	France	3.2	8	France
4.1	61	Scotland	3.5	22	Scotland	3.2	8	Scotland
3.2	48	Italy	3.5	22	Italy	2.8	7	Italy
2.9	44	Australia	2.8	18	Australia	2.0	5	Australia
2.7	41	India	2.0	13	India	2.0	5	India
2.5	38	China	1.9	12	China	1.6	4	China
1.8	27	Switzerland	1.7	11	Switzerland	1.6	4	Switzerland
22.7	341	Remaining countries	15.4	98	Remaining countries	12.4	31	Remaining countries
	1502	Total collaborative occs.		635	Total collaborative occs.		251	Total collaborative occs.

Table 1 displays the top 12 collaborative countries with Iran during 1985-1999, which are mostly from Group 7, and England ranked second in all three different periods respectively. However, Iran's rate of collaboration with China, India, Australia, and Canada…Showed increase in periods, 1985-1999 (Table 1). It can be said that Iran is looking for scientific collaborators even in other countries.

Concluding Remarks:

This paper found that Iran's scientific productivity and collaboration has sharply increased in the last five years comparing with her performance in the last decades. Still Iran is looking for some growing trends. Organizing UK and Iran Higher Education and Research Collaboration conference, *Invited Collaborative Research Program (ICRP)* ISMO's Programs, seem some of these trends.

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UK and Iran Higher Education and Research Collaboration Conference Results