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9. ABSTRACT

Studies the tendency of professionals, particularly those educat in foreign institutions, to emigrate from less developed countries (LDC). The so-called "brain drain" is researched and evaluated throu large-scale questionnaire surveys. Major factors in the decision to emigrate include income considerations, quality and number of jobs, the opportunity to make contributions to one's profession, and the welfare of one's children. In addition, many of the emigres are members of minority groups in their home countries and wish to avoid discrimination there. The study also points out that many profession from LDCs do not stay in the foreign country permanently, and return home after aquiring valuable work experience. Varying immigration policies in host countries are outlined, and the type of professional most likely to emigrate permanently from the LDC is profiled.

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THE BRAIN DRAIN--
WHAT WE KNOW AND WHAT
WE NEED TO KNOW

By William A. Glaser

Prepared for a panel on "Research on International Educational, Cultural, and Scientific Cooperation: Problems and Priorities," at the Annual Meeting of the International Studies Association, Washington, 24 February 1978.

International movements by the more educated and the more skilled were leading issues in policy debates and in social science during the 1960's and early 1970's. Retaining the educated was considered essential to a country's development, while losing them was unfairly profitable to another. The subject attracted much research and policy advice.[1]

Americans and Europeans became bored with the problems of developing countries during the 1970's, including their complaints about brain drain. Research money and publication outlets dried up, and Western social scientists turned to other subjects. But developing countries still sense serious problems, even if little new research is being done.

WHAT WE KNOW ABOUT THE EFFECTS OF HIGHER EDUCATION ON MIGRATION

Considerable numbers of professional persons emigrate after having received higher education at home. These are in part an overflow from the educational system at home: because the universities were not articulated with the job market, imbalances resulted in excessive output, and individuals had to seek employment elsewhere. Or, in many cases, non-occupational barriers, such as ethnic prejudices or political trouble, forced them out.[2] The remedies for this type of brain drain--the overflow of those educated at home--lie in the domestic manpower and educational policies of developing countries, and in the immigration policies of developed countries.

Another aspect of brain drain is emigration of those who went abroad for education and stayed. Special attention in the research has been given to the effects of study abroad, since they involve the educational and scientific policies of developed countries. Many researchers participated in educational exchanges at their own campuses.

Relation of emigration to study abroad. After World War II, educational flows from developing to developed countries were greatly expanded and subsidized, in the hope of quick expansion and upgrading of the manpower of developing countries. But by the mid-1960's, educational exchanges were suspected of perverse effects: many students might be taking the opportunity to stay away permanently; education in the West might unfit them for return.

The research has confirmed that foreign students are more likely to emigrate than persons who have never studied abroad; the former learn about opportunities and have acquired skills appropriate to foreign employers. But,

most foreign students return home. In the mid-1960's in the United States, the proportions who returned home after (or shortly after foreign study) were between 75 percent and 85 percent. (The proportion may be higher today, because of the reduction of European students in the United States and because of the tighter American job market.) Within the United States, rates of return varied: Chinese and Cubans were highly likely to remain; substantial proportions of Europeans sought to emigrate; some Indians, Koreans, Argentinians, Iranians, Colombians and persons from other developing countries wished to remain while most of their countrymen returned; many other developing countries had very high rates of return.[3]

The proportions of foreign students planning to emigrate may be higher in a few other developed countries, such as Canada, than in the United States. Many have arrived in Canada with immigrant visas and always intended to stay. But opportunities to stay after study are much smaller in Europe and Australia, and the proportions planning to emigrate there are lower than among foreign students in the United States.[4]

Of the scientists and engineers working abroad, large proportions got some of their education in the West. Half the immigrants in the United States had previously studied there or in another developed country.[5] Fewer doctors start work abroad with prior degrees or formal education in developed countries--i.e., most arrive after education entirely at home. Most foreign doctors arrive nominally as postgraduate students, to work as hospital house staff under the tutelage of senior specialists, but actually they perform services with maximum autonomy and they soon become integrated as full members of the medical profession.

Reasons for emigration and return. The literature contains lists of all possible reasons for the migration of talent.[6] But only a few systematic large-scale questionnaire surveys have been conducted about the motives of foreign students, inducing some to emigrate permanently and others to return home.[7] Following are the principal results.

The most general and strongest motives are the perception of where one's children are best off, where the greatest contributions can be made to one's profession, adequacy of income, quality of jobs and number of jobs. If a foreign country seems better than home, the professional will emigrate. If the home country has an excess of professionals, a limited job hierarchy with

promotion by seniority and uncertain prospects for improvement, the talented will consider it a poor risk for themselves and for their children. Societies with flexible structures, expanding organizations and vigorous leadership can retain their talented persons.

Members of minority groups belong to the professions in large numbers throughout the world. The nationalistic and homogenizing policies of many governments worry them, and they are an important part of the brain drain, particularly to North America.

Income differences are associated with the migration of the talented, but not as strongly as is widely assumed. Many persons return to countries with low pay rates--for example, in Asia--because of powerful family and cultural ties. Others emigrate from countries with satisfactory pay--for example, Iran--for non-monetary reasons. Doctors are unusual: they are usually the highest paid group of immigrants, and they may be unusually responsive to the lure of money. But many other foreign professionals may not gain very much in real income by migrating to North America and Europe.

Avoidance of distasteful governments induces only a few to emigrate, particularly in journalism, the arts, and sociology. Other professionals object to unstable rather than repressive political conditions.

UNEXPECTED FINDINGS

Most discussions about brain drain and many research reports are written in very general language. They imply that "brain drain" applies equally to all developing countries and to all migrants. UNITAR's multi-national and interdisciplinary survey was designed to distinguish between propositions that were widely true and propositions varying by situations and by types of people. The study aimed to give policy advice to the international community, and implications for action depended on the generality of the conclusions and on the conditions. Following are some of the new interpretations that emerged, and the practical actions that might follow.[8]

Variations by length of stay. A common oversimplification is assuming that all migrants are permanent. But many stay-ons are temporary. They are getting a form of practical post-graduate education by working before returning home. This is particularly true of some nationalities, such as Indians. Therefore, instead of pressing for immediate return for everyone, governments

and employers should decide whether temporary employment abroad can be advantageous for the home country. If so, work experience can be planned as carefully as educational exchange to ensure development of the most appropriate skills and acquisition of the widest range of experience. Work in third countries resembling home might be better than staying on in developed countries. The organization of on-the-job experience, like the organization of educational exchanges, can be improved by better consultation among the governments and employers of different countries.

Even if a professional has been working abroad for some time, he may still have ties of culture and family with his home country. Unless he was a member of a minority group being expelled from privileged positions, he never emigrates completely. The right opportunities in his work and in the prospects for his family can bring him back. But this requires efforts by governments, employers, and professional associations to expand employment, inform their nationals abroad of new opportunities, and project an aura of growth and optimism. If professionals abroad are ignored and do not learn of new opportunities at home, they and their children can gradually become absorbed into the foreign society, however much they would prefer to return.

Substantial colonies of persons from developing countries have sprung up abroad, and many members are professionals. Particularly numerous and cohesive are groups of Indians, Filipinos, Koreans, West Indians, and Lebanese. Even if they remain abroad permanently, they might become assets to the societies at home. They might be persuaded to remit hard currency, help organizations and business firms at home, and provide hospitality to countrymen during study or temporary work abroad. At present, their good will for the home country is not exploited, and they are written off as permanent losses.

Variations by home country. Two common assumptions about brain drain prove to be incorrect. The simpler assumption depicts brain drain as a general problem affecting all countries. But our data show that emigration varies widely among countries. Whether emigration harms the country also varies.

A less simple but apparently equally erroneous assumption is that brain drain is governed by economic growth alone. But some less developed countries have higher rates of return than the more developed. In fact, Europe loses more of its students and professionals than do the large majority of developing countries.

Several characteristics of a developing country produce higher rates of return; some depend on economic growth but others can be generated through better leadership. Professionals must feel that jobs will increase in the future, that incomes and employment will grow in both quantity and quality. Professionals think not only of their personal prospects during their lifetime but also whether the country will provide opportunities for their children. The labor market should be flexible, so that people can change jobs without risks and can rise, without being trapped in a rigid seniority system. The country should have an aura of optimism, pride, and purpose.

An important difference among developing societies is whether they can retain the loyalty of all their citizens. Many students and professionals come from minority groups. If they feel they and their children have uncertain futures, they emigrate. If it adopts exclusionary practices, a developing country should not complain that the richer countries are "'stealing' its professionals."

Some developing countries have unintended "natural advantages" in attracting back their students and in keeping their professionals. Their cultures, languages, skin colors, and climates differ so much from those of Europe and North America that their nationals can never become fully assimilated abroad.

Variations by host country. Developed countries are not equally open. Some are closed societies; in their immigration procedures and culture, they accept few foreigners as permanent residents. Examples are France and Germany. They have many foreign students from Africa and Asia but such persons usually can settle only temporarily as outsiders to solve shortages in jobs that citizens avoid.

Some developed countries are hospitable only to foreigners of similar culture, language, and color. Asians and Africans are not easily accepted. An example is Great Britain. Considerable numbers of foreign professionals work, including many from Africa and Asia. They alleviate labor shortages in particular sectors. But they are segregated, believe the indigenous population is hostile, and worry constantly about restrictive government policies.

Canada probably has been as open to immigration by professionals from developing countries as any developed society is likely to be. Immigrants even from non-white societies can move around the country, find many jobs, and encounter many enclaves speaking their own or other languages. Immigrant

visas and citizenship have been easy to obtain. Such a comparatively open environment is unusual; it results from the right combination of economic expansion, geographical space, underpopulation, dependency on external infusions to produce indigenous culture, and the absence of jingo nationalism. But no society is always completely open. The decline in the Canadian economy during the 1970's resulted in restrictions on immigration.

Variations by personal motive. A truism about migration is that the persons with the strongest roots at home will not leave. Or, if they have gone abroad, they are the individuals most likely to return. In our data, ties with home are both personal and professional. Someone will return and remain home is he has strong family ties and many friends, if his thinking is permeated by the culture and images of daily life at home, if he believes in the destiny of his country. Occupational ties will also bring him back, such as sponsorship of his study and work abroad, guarantees of a good job, and letters from his employers.

The persons who are lost lack such roots. They are members of minority groups, they have smaller or less devoted families at home, they are more cosmopolitan in cultural tastes. Their ties with the government and with employers at home are weak: financial support while abroad comes from their family, their own earnings, or from foreign sources; they have no jobs waiting; they receive no news or offers from employers or from their embassies while abroad.

If countries want to recover such persons, they must reinforce any ties that exist through more generous circulation of mass media, job offers, and expressions of interest. If the student and professional is developing new ties abroad, the home country must offer stronger appeals: if the spouse is foreign or if the professional's children are becoming accustomed to life abroad, the home country must convince them of its own attractions. The anxieties of minority groups should be alleviated.

Of course, migration decisions are governed by occupational and economic considerations, as well as by social and psychological ties with family and society. The number of jobs, the quality of jobs, living standards, and opportunities to exercise responsibility motivate many persons. But how these influences affect careers is more complex than we expected. If occupational and family variables point in the same direction, migration decisions follow easily. But often family and cultural relations pull the professional home,

while employment seems better abroad. Often the person returns home, but not always. Such cross-pressures sometimes make the returnee less committed to remain, but not always. Sometimes perceptions about inadequate working conditions at home are redefined as mere complaints, rather than as reasons for making so serious a personal decision as whether to spend an entire lifetime at home or abroad.

RECENT RESEARCH

Aggregate counts. Nowadays, only a few research projects concern the flows of professionals. Governments continue to publish tabulations of the numbers of immigrants, by country and by occupation. But the information is built up from official records and not from long questionnaires filled out by individual immigrants. Therefore the information is simple and possibly incomplete.

To estimate any world-wide trends is particularly difficult. Most tabulations are confined to immigration to the United States and a few other developing countries. Few developed countries count their emigrants. Ideally, the entire world picture should be described by a large input-output matrix, wherein each country's emigrants are spread over receiving countries, but a coordinated statistical effort would be necessary everywhere. The World Health Organization recently tried to collect data about the flows of doctors and nurses in this manner.[9] Since their collection and publication, the data have not yet been used for research or for policymaking.

Costs and compensation. While the West has lost interest in the brain drain, developing countries remain angry about losses of their personnel. The United Nations and its specialized agencies have passed strident resolutions calling upon developed countries to compensate developing countries for serious losses. As a result, the principal research about brain drain during the mid- and late 1970's was efforts by economists to estimate the costs to each developing country, and techniques for capturing and transferring all or some profits. One method could be a reparations payment; another might be the yield of a tax upon the earnings of migrants.[10]

At present, these are methodological demonstrations, using available data. They inadvertently demonstrate serious deficiencies in the data available for the calculations. (The balance of payments methodology at present

is defective, because it defines categories to fit the available data even when they are inappropriate, and it adopts assumptions avoiding important but completely unavailable information. But, of course, better models can be written if appropriate data are produced.) The present limitations in the calculation of net gains are:

Loss to a developing country is calculated from the professionals' salaries in those countries where the data exist. Usually India is picked, because it has the data, and then the Indian figures are generalized to all developing countries. But this is wrong: Indian professionals are paid much less than those from other developing countries. Perhaps the costs of educating and nurturing a professional before he emigrates might be a better measure.

Gain to a developed country is calculated from all the young professionals' salaries there, including the Western citizens. Immigrants usually earn less, but no one has separate data. Developed countries differ.

The balance sheet should include the value of education obtained abroad by persons who return to the developing country. But no one has accurate data on the size of return flows, much less their financial sources of support abroad.

If this work proceeeds, it should use appropriate data, and that requires considerable new collection. If that is not done, policymakers should beware of the substantive limitations of the balance-of-payments accounts and of the modelling.

GAPS IN PAST RESEARCH

Stay-ons. Despite all the research ostensibly devoted to "brain drain," hardly any deals with the objects of it, viz., the professional persons from developing countries who work in developed countries. Nearly all the research deals with the people who are easy to sample and contract, viz., the students. The UNITAR project added many samples of returnees.

But, as we discovered, serious barriers discourage surveys of the stay-ons. Governments of developed countries have lists but claim that the names and addresses are confidential. Governments and private foundations have been willing to finance surveys of students but seem to run out of money or raise

methodological objections when surveys of stay-ons are discussed. As a result, research about the brain drain fits the familiar image of playing "Hamlet" without the Dane.

Returnees. Research about educational exchange covers everything but the most important step, viz., how education is used after the professional person returns home. International educational exchanges proceed without any feedback from evaluation of their consequences.

There is much speculation and argument--but no reliable facts--about such fundamental questions as whether the foreign student learns things that are too specialized or too "advanced" for employment at home; whether his skills are wasted at home; whether Western curricula lack subject content appropriate to developing countries; whether returnees are modernizers or malcontents; and so on. One could pose important questions about the dynamics of re-entry, such as how organizations change when foreign-educated persons join them; how new techniques in subject matter and in organization are spread by the returnee; how returnees and incumbents develop relationships; whether foreign education accentuates imbalances by enabling returnees to cluster in elite organizations, instead of spreading out among all organizations and communities.

Learning about the utilization and effects of overseas education will require extensive qualitative interviewing in developing countries, among both returnees and employers. The results would be compared to the curricula of Western universities with large numbers of foreign students, to assess whether the universities teach what the developing countries can use. We attempted to start this work in UNITAR's survey, by adding short qualitative interviews to the questionnaire survey of returnees, and by conducting an additional survey of employers. But at these points, our collaborating institutes ran short of energy and money. Special efforts will be needed for such research, since survey centers in developing countries are accustomed primarily to administer structured questionnaires.

STRUCTURES OF HOME COUNTRIES

Employment. At present, the literature about brain drain and employment of professions uses the statistical aggregates of manpower economics. But a country is an organized system, with economic sectors and with regions. To examine the total statistics alone is incomplete.

Judgments are often made about countries, in the light of manpower and employment totals. Frequently the fatalistic side of market economics is used to draw conclusions, viz., if a country's nationals work abroad, the country must have failed to offer them high enough wages, and therefore that country can't be suffering from brain drain. No conclusions are possible until one examines the entire occupational structure: if unfilled jobs exist while the country's professionals work abroad (for example, as in Jamaica), then the country suffers a decline in efficiency due to brain drain. But if all jobs are filled while a surplus group works abroad, then the country suffers from self-inflicted waste. Actually close inspection of a country's occupational structure usually reveals imbalances somewhere: for example, while India has so many general engineers that those positions are filled and the surplus works abroad, some very specialized posts remain unfilled for want of appropriately trained people, and the possible employees are overseas.

A familiar structural problem is emigration of certain professionals, because the comfortable jobs in cities are filled, and the professionals refuse to take rural posts. The United States and Europe have many doctors, originally trained at the expense of their home countries, while those countries have many unfilled posts in rural areas. Without emigration, there might not be a better redistribution in the country; the recruitment of urban-oriented doctors would continue, but fewer would enter medical schools, since career prospects would be worse. It is not merely foreign emigration that causes a country's losses; it has wasted resources by allowing too many urban-oriented people to study medicine, and by not educating the types of persons who would practice in smaller communities.

Barriers to manpower planning. Imbalances between education and employment associated with emigration result in repeated calls for better "manpower planning." Developing countries should educate at home and should educate abroad only those people it "needs." However, despite long histories of brain drain and (in a few countries) even domestic unemployment of professionals, countries have persistent trouble redirecting their universities and technical schools.

In other research about developed countries, I have noticed similar difficulties in resolving imbalances. It is hard to predict public demand and "need" far in advance and put the right mix of students into the educa-

tional system now. Immigration, emigration, and specialization cannot easily be predicted and controlled. If planners recommend cutbacks in training, it is usually other officials in the national, provincial, and local governments who must implement them. The others may disagree with the projections and recommendations, and they may shrink from the political heat.

Therefore, research is needed not merely about manpower planning in developing countries but about how to implement it. Bureaucratic and political struggles must be understood. Before imbalances can be corrected, implementation strategies must be designed.

INTERACTIONS AMONG DEVELOPING COUNTRIES

At first, research about the international flow of talent examined movements within Europe and between Europe and North America. Then, during the 1960's, the focus shifted to the movement from developing to developed countries.

Another flow has always existed but is being recognized by social scientists only now. For many years, students and professionals moved around within Latin America. For centuries, Arabs have moved throughout the Middle East for study. Egyptian, Lebanese, Syrian, and (more recently) Palestinian Arab professionals have taken jobs throughout the Middle East. The rapid modernization of Iran, Saudi Arabia, and other oil-rich countries has enabled them to continue to hire other Arab professionals and also to bring in Pakistanis and Indians.

These movements among developing countries are worth studying. The flows within Latin America have spread skills, have fostered a common culture and great mutual understanding (despite the Spanish-Portuguese language boundary), and have created political cohesion. Several countries that rely heavily on outside professionals--Saudi Arabia, Kuwait, Libya, and smaller sheikdoms--have mixed staffs in many organizations. How the members form groups and contribute to the development of the host country would be fascinating examples of the sort of intercultural collaboration that may be the key to the growth of many developing countries. The professionals who work in this fashion might not represent permanent brain drain from their own country but would constitute a cosmopolitan professional class, at home throughout a region.

FOOTNOTES

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4. William A. Glaser, The Brain Drain: Emigration and Return (Oxford: Pergamon Press, 1978); and still unpublished tabulations from the multi-national survey of students and professionals by the United Nations Institute for Training and Research.

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9. Alfonso Mejia et al., Multinational Study of the International Migration of Physicians and Nurses: Country Specific Migration Statistics (Geneva: World Health Organization, 1976).

10. Methods of calculating the balance of payments appear in The Reverse Transfer of Technology: Its Dimensions, Economic Effects and Policy Implications (New York: United Nations Conference on Trade and Development, 1975). Methods of calculating reparations and taxes, and the effects of personal taxes on migrants' behavior are described in Jagdish N. Bhagwati (editor), Taxing the Brain Drain and The Brain Drain and Taxation (both Amsterdam: North-Holland Publishing Company, 1976).