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Brain drain in higher education: Critical voices on teacher education in Yemen

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Abstract

Brain drain is a context-based issue and has direct impact on the quality of higher education for institutions where a significant number of instructors migrate to take up work in other countries. This is a critical problem in Yemen where higher teacher education programmes still lack teachers. Interpretive analysis of in-depth interviews with two university administrators and ten teacher educators revealed four key factors affecting the occurrence of brain drain: ineffective application of sabbatical leave regulations; failure to equalize returning teachers' salaries with those of their colleagues; lack of resources to support research; and the presence of internal and external conflicts. The study also provides insights for decreasing brain drain in Yemen.

Keywords: brain drain; higher education; teacher education; quality; Yemen

Introduction

Growth in higher education is a target for most, if not all, public and private academic institutions. This growth is not limited to quantity but also relates to quality concerns. Quality in higher education is conceived mainly in terms of excellence, value and achievement of educational goals (Feigenbbaum, 1951; Gilmore, 1974; Grosby *et al.*, 1982; as cited in Jain *et al.*, 2011: 302). Further, assessments of quality may focus on high standards, efficiency, fitness of learning purposes and customer satisfaction (Parasuraman *et al.*, 1985; Tang and Zairi, 1998; Watty, 2006). It may also be concerned with academic, administrative and facilities, and is influenced by reliability, personal attention and the comfort and features of campuses (Sultan and Wong, 2013). Quality improvement not only involves quantifiable outputs but also valuable inputs such as qualified teachers. Good teachers are not necessarily local and in some nations they are apt to leave the country, creating a situation of brain drain.

Brain drain is generally defined as the departure of well-educated people and/or highly skilled workers (e.g. Docquier, 2014). This departure is either temporary or permanent (Cerdeira *et al.*, 2016), depending on its cause(s). As teachers are dynamic human beings, it is not always easy to work out whether their departure is temporary or permanent unless continual interviews are conducted. For example, departure in search of a new or better job (Cerdeira *et al.*, 2016) could be permanent, especially if the migrant is being threatened at home and/or finds peace of mind abroad. Further, migration due to civilian conflicts (de Groot and Göksel, 2011), political conflicts (Boyo, 2013) and ethnic or non-ethnic conflicts (Christensen *et al.*, 2016) could be either temporary or permanent. Migrants may come back when such conflicts are resolved or they may stay abroad forever, especially in cases of continuing conflict, or a poor economy or working conditions at home.

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Much research has been published on brain drain across the disciplines; common foci are the causes of brain drain and the problems or benefits associated with it. Previous research has divided the factors affecting brain drain into two main categories. The first consists of the so-called push factors, such as low income, poor working conditions and the lack of necessary equipment (e.g. Bénassy and Brezis, 2013; Biondo *et al*., 2012; Korobkov and Zaionchkovskaia, 2012; Sampson, 2013), as well as limited budgets for conducting research (Ifanti *et al*., 2014). The second category contains pull factors associated with the countries for which migrants depart, such as high standards of living, available facilities and respect for professionals and the profession of teaching (e.g., Korobkov and Zaionchkovskaia, 2012; Ngoma and Ismail, 2013). Some research reports that brain drain is a beneficial process in terms of fostering international communication among scholars (Gibson and McKenzie, 2012; Korobkov and Zaionchkovskaia, 2012; Stark, 2004) and increasing knowledge, especially in competitive institutions (Sampson, 2013). Other studies state that brain drain is a threat to the entire community, as needed workers leave (Mackey and Liang, 2012; Sampson, 2013). In effect, brain drain poses a challenge to the economic growth of developing countries, affecting human development overall (Okoye, 2016).

The concern of this paper is with brain drain as it affects Yemen. Located in the Arabian Peninsula, with a population of approximately 24 million, Yemen has in recent years undergone internal and external armed conflicts, with negative impacts on the entire society. The current situation is socio-politically violent and threatening. In this low-income country, these conflicts have led to sharp economic crises, leaving 82 per cent of the population in critical need of humanitarian assistance (see Jongberg, 2016 for details). All of this has affected both the higher and basic education sectors. The Yemeni higher education, established in the 1970s, consists at present of eight state universities. It suffers from many administrative and academic problems (Muthanna, 2011; Muthanna and Karaman, 2011, 2014), institutional conflicts (Muthanna and Sang, 2018) and lacks a research ethics code (Muthanna, 2016). Such critical issues weaken the overall prospects for improving higher education quality.

A previous study on migrant Yemeni teachers of English reported on two aspects concerning brain drain: low financial income, and lack of fairness and respect towards and among teachers (Muthanna, 2015). This study reports on the perspectives of university administrators and teaching faculty who are currently working in Yemeni higher education. It aims mainly to answer this key research question: why is brain drain occurring in teacher higher education institutions in Yemen? The study also provides insights aimed at decreasing the incidence of this phenomenon in the nation.

Research design

In this qualitative research, the authors pursued a case-study methodology that helps elucidate complex social phenomena while retaining the holistic and meaningful characteristics of real-life events (Yin, 2009), identify hidden policy problems (Li, 2006) and substantiate or confirm a related theory (Gravetter and Forzano, 2006). In this research methodology, the authors prepared an in-depth interview protocol, one of the prominent data collection methods employed in qualitative research (Bryman, 2008). In-depth interviews help researchers to understand interviewees' facial expressions, thinking and attitude (Low *et al*., 2013; Seidman, 2006).

The primary author allowed the participants to decide the place, time and language of the interviews. After obtaining the signed consent form, every in-depth (audio) interview (conducted in Arabic) lasted for up to two hours. The interviewees

were two university administrators and ten teacher educators currently teaching in different teacher higher education programmes in Yemen. A PhD degree alongside teaching and research experience was the main criterion for selecting teacher educators. The university administrators included in the study were deliberately selected so as to capture a full picture of the problem. All participants belonged to the same university; this was because it was not safe to visit other universities in Yemen due to the presence of internal and international conflict. As it is ethically important to protect the anonymity of the participants, the university is anonymized here and participants' names are coded. Table 1 outlines the profile of the study participants.

Table 1: Study participants' profiles

Participants codes	Gender	Age	Programme role
Teacher 1	Male	45	Physics
Teacher 2	Male	50	Psychological sciences
Teacher 3	Male	47	Educational administration and foundations
Teacher 4	Male	52	Special education
Teacher 5	Female	38	Maths
Teacher 6	Male	39	Psychological sciences
Teacher 7	Male	40	Chemistry
Teacher 8	Male	42	Adult education
Teacher 9	Male	50	Educational administration and foundations and vice-dean
Teacher 10	Male	48	Educational Administration and Foundations
Administrator 1	Male	56	Vice-chancellor for higher studies and scientific research
Administrator 2	Male	63	Vice-chancellor for academic affairs

The primary author transcribed all data verbatim, and translated part of the data (using word-by-word translation) into English. The accuracy of the translation was checked by two colleagues who are versed in both languages. The employment of grounded theory analysis (Glaser and Strauss, 1967) allowed critical themes to emerge from the data. Meanwhile, by employing interpretative analysis methods (Gall *et al*., 2003), the primary author studied the collected data carefully. This entailed interviewing the participants again for further specific details and ensuring that the interpretations reflected their intended meanings. At a later stage, the authors intensively reviewed the emerging patterns that reflected the critical voices of the participants concerning their intentions to migrate and teach abroad.

Findings and discussion

The following is a brief discussion of the main factors leading to brain drain in Yemeni teacher higher education.

University regulations: Need for urgent review

Universities in Yemen have few regulations concerning travelling and teaching abroad. One main regulation is that instructors have the right to teach abroad for a year after

four consecutive years of teaching service at their institutions (SCEP, 1998: Article 21, p. 6). Another regulation states that instructors can also apply for three-year maximum sabbatical leave, during which they receive no salaries from their home universities; entitlement can be renewed after three years of teaching service (SCEP, 1998: Article 23, p. 6). To obtain sabbatical leave, instructors' applications must be approved by departmental council members, college council members, university council members and finally the chancellor. These are supportive measures; the main purpose of this sabbatical leave is to provide these instructors with an opportunity to acquire further experience related to teaching and research. Both regulations motivate many instructors to seize the opportunity to leave their country of origin. This motivation is enhanced by the fact that, on average, they receive three to four times their original salaries when teaching abroad, and some instructors intend to spend more than three years outside Yemen. On this issue, participants expressed different views:

> I am glad to leave the country and do not care about the salary as long as my job is still there and I can go back to my home university at any time (Teacher 1).
>
> Today, I am the chairperson and have the power to issue agreements. Tomorrow, another person will be the chairperson and I might need their support. So it is good to give agreements as I lose nothing (Teacher 2).
>
> In the university, it is permissible [for teachers] to instruct abroad for two years provided that [they] complete eight years of service but [they] can also teach abroad for a longer period if there is an agreement between [the teacher] and [the] department, and I can get one (Teacher 3).
>
> I have been teaching in this university for 12 years and it is high time to leave the country to teach abroad. I will request the department chairperson to issue an agreement for me and I am positive that he will help me as I have helped him before (Teacher 4).

To issue an agreement whereby professors can instruct abroad when the department has a high need for these instructors is not academically ethical. Because teacher educators are well paid abroad, they often do not consider returning to Yemen. Due to the lack of sufficient instructors, most have a double teaching load (Muthanna and Karaman, 2014), a situation that leads to poor higher education quality – that becomes poorer still when some of them migrate. Therefore, employing new candidates is necessary and helps senior academics to access their own right to sabbatical leave.

Further, there are academic migrants who do not have departmental agreements, yet remain as affiliates of their home institutions. Recently, one academic higher education institution in Yemen decided to suspend those who have been teaching abroad without departmental agreements or whose sabbatical leave has exceeded its deadline. This initiative has been effective in curbing brain drain. Putting this initiative into action has forced some instructors to return to their institutions. One of the instructors returned to keep her position at the institution and to serve society in Yemen; however, she had been teaching for a year without compensation. She also faces some challenges as she has stated:

> I came back to teach at my institution although I receive around US$1,000 at my institution and I receive twice that [salary] abroad. I came back to keep my job and to serve my society. But there are many challenges I am currently facing: no salary for one year, although I am teaching more

> than my course load; no action from the decision makers towards my issue [salary] and I am fed up with this treatment … Administrators are not aware that even the US$1,000 I will receive as salary is not sufficient in our country (Teacher 5).

The above discourse indicates that the salary of an assistant professor in Yemen is not enough to cover basic needs, supporting the findings of Muthanna (2015). Further, her words indicate the shortage of instructors in the institution that is leading to faculty teaching more hours than those allowed by law (12 hours per week for an assistant professor) (SCEP, 1998: Article 5, p. 3). Delays in addressing such issues will lead instructors to migrate again and teach abroad.

Administrators 1 and 2 confirmed that they are planning to suspend all teaching faculty members who are teaching abroad without sabbatical leave or those with sabbatical leave or vacations that pass the deadline to return:

> The university is trying to suspend anyone who does not come back to teach in their programmes, especially those whose sabbatical leave or vacations are over. Some instructors came back but, yes, they did not receive their salaries for a while, yes! We are trying to examine whether they are really patient and have really come back without cheating (Administrator 1).

> We are trying to solve their problems through the Ministry of Finance but the ministry says that they cannot [address these issues, given] the current situation. But we warned those instructors before and told them about suspending their jobs, so it is the problem of those instructors who got suspended. Let them learn from their mistakes (Administrator 2).

The first statement reports a new regulation at the university, one that tests and, in effect, punishes returning teachers who have violated the terms of their agreements, whereas the second explains that the problem is referred to the Ministry of Finance. Both statements indicate a lack of fair treatment and, possibly, of effective administration with respect to returning teachers. Good administration could solve teachers' problems, and in case they travel again, administrators can suspend noncompliant instructors indefinitely. Otherwise, the pattern is perpetuated: returning teachers suffer while teaching without salaries and are again compelled to migrate, an approach that neglects the main priority of higher education: ensuring good teaching quality.

University leadership: Need for equalizing returning teachers' salaries

Higher education institutions in Yemen send many teaching faculty members to continue their higher education abroad. While abroad, these teachers receive a basic salary (approximately US$175, depending on the exchange rate) in addition to a grant (mainly to cover tuition fees, with a monthly allowance of at least US$600–900 depending on the host country) provided by the Ministry of Higher Studies and Scientific Research through the Ministry of Finance. After earning MA and PhD credentials, these instructors return to their home institutions and start teaching. The challenge they immediately face is that they teach up to three years, earning the same basic salary they were receiving while studying abroad. These recently returned instructors are demotivated to continue teaching, given that their salaries are not sufficient even to cover housing. They reported that they prefer to leave their local positions to teach abroad. In the following, teacher participants express their readiness to teach abroad:

> I graduated from one university in India … I have been teaching here since [graduating] with the same salary I was receiving before. I am sick of going to the university headquarters and requesting that they increase my salary and make it equal to my colleagues'. I am applying for jobs abroad (Teacher 6).

> I arrived here two years ago and I am teaching more than 15 hours per week but with the salary I was receiving while abroad … It is around US$175. The university administration does not care and they argue that the matter is out of their hands … They say the problem is with the Ministry of Finance, which is delaying equalizing our salaries with those of our colleagues. I cannot be patient any more (Teacher 7).

> Equalizing our salaries on the basis of our qualifications is a continuous problem at the university. Those who taught us in the undergraduate programmes went through the same problem; a delay in increasing their salaries. It has become a university phenomenon … Our administrators do not care about us or our needs, or about solving our problems … Teaching abroad at a kindergarten would be better (Teacher 8).

Upon investigating the issue further, it becomes clear that university administrators might not hold the primary responsibility for the delay in teacher salary equalization. Regarding this concern, administrator participants stated the following:

> This is a constant problem at universities in Yemen. This has to do with the Ministry of Finance, which delays equalizing salaries. We report to the ministry about our teaching assistants learning abroad but the problem still persists (Administrator 2).

> This [issue] is in the hands of the Finance Ministry, which sometimes reports an absence or lack of finances. Yes, it has been their problem for years, and maybe they do not intend to solve it (Administrator 1).

While teachers blame university administrators, university administrators in turn blame the Ministry of Finance. Both administrators interviewed confirm that the issue of equalizing returning teachers' salaries with their colleagues' salaries is a matter for the Ministry of Finance; however, according to those administrators, the Ministry of Finance has done little to solve this problem over the years. This is an indication that the Ministry of Finance might treat the issue of returning teachers as routine, not caring about the status of universities, teachers and/or students.

Fear and horror: Aspiring towards secure settings

Teachers around the world naturally aspire to work in safe educational settings. Safe learning environments are free from physical or psychosocial harm and provide protection from any threat, danger, injury or loss (INEE, 2010). Safe and educative environments are main factors that permit teachers and students to exercise creativity and make positive contributions. In Yemen, the ongoing civil war has led to a prolonged sense of fear and horror among citizens. Explosions at schools and universities have closed, many for periods of more than a year. The closing of schools is regarded by UNESCO (2014) as one indicator of instability in a country. In Yemen, it is the responsibility of the Ministry of Education and Ministry of Higher Studies and Scientific Research to have established education policies and laws to ensure the continuity of education, especially during emergency situations.

In Yemen, social conflicts stemming from several factors – political partisanship; sectarian, tribal or city affiliation; personal interests – have escalated to violent extremes, with explosives detonated daily in many cities. The situation has made university teachers in Yemen feel unsafe in their institutions and homes. Political partisanship extends into the higher education sector: even university teachers are politically affiliated, and those who oppose the political party in power are subject to capital punishment. All teacher participants agreed that it is dangerous to continue teaching under the current circumstances. Teacher 9 mentioned having been threatened with kidnapping:

> I am supervising some students on their graduation papers. Students chose to work on current issues, for example, factors behind the sharp increase in petrol or gas price, electricity disconnection, the unavailability of gas, the effects of carrying arms, the effects of the black market, the effects of the current war … As a result, I was called upon three times by the National Security Bureau and interrogated …. They threatened me, saying that if I do not stop students from working on such issues, I will be considered as a person who seeks to make social problems and then be named as a *Daeshi'* [a member of Al-Qaeda], and that I will be lost like a needle among straw (Teacher 9).

Because the community perceives teachers to be leaders, teachers become important targets if they do not obey the rules of the armed group (Justino, 2016). In the above statement, the phrase 'be lost like a needle' implies a threat to life. The statement also implies that the university is under the control of the armed group. Thus, there is an atmosphere of tension and fear among teachers and students; the possibility exists that they might be kidnapped or killed without warning. Sharing the sentiments of Teacher 9, Teacher 10 made the following statement:

> I fear for myself and my kids but the university cares for no one … Their concern is to follow their instructions and be obedient to them. They [university leaders] tell us not to talk about current social issues in class, even though the main focus of one course I am teaching is about social problems and strategic planning to mitigate social conflicts (Teacher 10).

One of the main tasks of higher education institutions is to provide solutions for social conflicts, and instructors should be encouraged to teach scientific research methodologies by which appropriate remedies to existing problems may be sought. The above statements are clear indicators of the unstable situation in Yemen in general and in the country's educational institutions in particular. Teachers' fears for their lives and those of their family members are warranted. Teachers and administrators are being threatened to follow instructions that either limit or are outside the scopes of their positions, to the overall detriment of higher education institutions. Instead of threatening teachers, national security officials should help foster an atmosphere of emotional, physical and social well-being for administrators, instructors, students and society at large. The assurance of well-being in a learning environment includes 'security, safety and protection; health; happiness and warmth in the relations between education providers and learners, and among learners' (INEE, 2010: 62).

Poor resources to support research

There is little funding allocated for higher education institutions in Yemen. For example, Sana'a University, the recipient of the greatest proportion of funding, in 2013

received total funding of approximately US$52,800. This funding is divided into current expenditure (approximately US$45,600) and investment expenditure (approximately US$7,100) in 2013 (see SCEP, 2013: 272 for details of funding distributed to other institutions). As well as the overall very low level of funding for the improvement of such academic institutions, the distribution also differs among state universities in Yemen. For instance, among the five state universities established in 1996 some receive more funding than others, for no clear reason. Administrator 1 commented that this unfair distribution stems from the social connections between university administrators and those working in the Ministry of Finance, and possibly in the Ministry of Higher Studies and Scientific Research as well. Such biases and conflicts of interest should be identified and avoided.

From the total university budget, and based on norms set out by the Ministry of Finance, some funding is allocated for scientific research improvement. Facilitating the production of scientific research is the responsibility of the university vice chancellor for higher studies and scientific research. Concerning one institution's budget for scientific research, Administrator 1 stated:

> What the university was getting from the Ministry [of Finance] was around one million five hundred thousand Yemeni rials [around US$5,900] for the improvement of scientific research and to encourage instructors to conduct research. Recently, they increased it to two million and eight hundred thousand Yemeni rials [around US$11,000]. This is, as you know, nothing [when it comes to] spending on facilities for doing research or even for providing financial incentives for teachers … We started a competition among teachers for an award of eighty thousand Yemeni rials [around US$400] for doing research.

Both historically and recently, financial support from the Ministry of Finance for scientific research has been insufficient for providing necessary facilities and equipment, such as modern labs, electronically equipped libraries, office space and computers. Instead, funding is spent as incentives for instructors on the basis of competitions. Every selected winner receives approximately US$400 for conducting research. In reality, this financial incentive is not sufficient to support the conduct of comprehensive studies. At one university in Yemen, the total amount of funding received by all teachers is equal to the value of a single PhD scholarship in some countries (for example, the University of Hong Kong gives US$10,000 to every scholarship recipient to fund participation in internal and external conferences during their course of study).

In Yemen, there are many higher education teachers who are willing to conduct scientific research but require labs with sufficient equipment, access to international academic journals and financial support. Universities in Yemen provide minor financial incentives for research purposes. Teacher participants made the following comments:

> I taught here for a while but conducted no research because my department lacks a lab for carrying out experiments. My research depends on conducting lab experiments and we do not have [labs]. There is a lab in another college but all the equipment is old and useless. I need to travel abroad to conduct some research. Some research projects might take years to finish … I am planning to travel soon (Teacher 7).

> I do not have an office. There is an old room with insufficient chairs and desks for all departmental teaching faculty members … We do not have computers and there are no computers in the library for research … our

> library is not subscribing to any journal. Doing research here is difficult (Teacher 1).
>
> To get promoted, I need to conduct and publish three papers. I have been suffering too much while conducting research … I need to survey the literature and I have found critical papers published in renowned academic journals, which I could not access. Our library should have access to journals with high impact factors but this is not happening … I need to purchase these papers (Teacher 8).

The above statements indicate that instructors conduct research merely as part of their pursuit of academic promotions (to associate and then full professorships), as their basic needs are not met in more junior roles. The absence of sufficient facilities and sufficient financial incentives might not only motivate hard-working researchers to migrate but also demotivate them from continuing research at their home universities. Universities in Yemen should aim to provide the necessary research facilities for all departments. Further, they need to consider increasing research budgets to motivate all instructors to conduct scientific studies, which will improve their institutions as well as the nation as a whole.

Without critical, scientific research in all fields, there will be no scientific solutions to current or future social problems and the nation will cease to develop further. The government needs to increase funding to academic institutions. University administrators also need to facilitate the process of conducting research and to adequately reward hard-working researchers who contribute to the betterment of social life and institutional prestige.

Conclusion

The brain drain phenomenon is international and has been discussed in several contexts. It is not confined to developing countries, however, and there is a growing interest in migration from developed nations (see e.g. Marx *et al.*, 2015). Although some researchers regard migration as a positive process for developing human capital in the countries that receive these migrants (e.g., Fan and Stark, 2007; Stark, 2004), or as a form of 'brain bridging' (a concept similar to 'brain gain') (e.g. Mok and Han, 2016), this study reports that brain drain represents a critical loss of valuable elites from nations where there is a strong need for these teachers. What is considered to be brain gain in one nation might be regarded as brain drain in another; brain drain or brain gain is therefore a context-based issue.

In Yemen, higher education institutions suffer from a shortage of teachers in all programmes. Moreover, current university teachers intend to migrate due to the ineffective implementation of the current sabbatical leave regulations, the failure to equalize returning teachers' salaries with their colleagues', the presence of internal and external conflicts and the lack of resources to support research. Therefore, the problem of brain drain weakens the quality of higher education programmes in the nation. To combat brain drain in Yemen, higher education policymakers and university administrators need to collaborate in redefining policies regarding sabbatical leave (with or without salary) and create a systematic plan for equalizing returning teachers' salaries with those of their colleagues. Employing newly qualified candidates is necessary; this would allow senior academics to conduct research that enhances their teaching and the nation as well. Further, employing a compensation mechanism (Hussain, 2015) and a restitution model where financial incentives and other important

benefits are considered and provided (Mackintosh *et al.*, 2006) are policy responses suitable for the context of Yemen. Policymakers, administrators and teachers need to realize that the development of a nation depends substantially on critical and applicable scientific research. Finally, the ability to retain valuable educated elites has a strong impact on the macro-economic development of a nation.

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