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## **The disjuncture of learning and recognition: Licensure-related credential assessment from the standpoint of Chinese immigrant engineers in Canada**

Hongxia Shan

### ***Abstract:***

Non/recognition of foreign credentials has been criticized for obstructing skilled immigrants from succeeding in the Canadian labour market. Despite the criticisms, rarely is empirical investigation conducted to pin down the gaps and contradictions in specific assessment mechanisms. This paper is an effort to this end. Drawing on an institutional ethnographic study of the credential assessment practices in the engineering profession, the study problematizes the redundant and ad hoc assessment procedures, licensure bodies' narrow focus on applicants' undergraduate education, and their deficit approach to training from other countries.

### **Introduction**

In the last twenty years, mounting criticism has been directed towards the lack of recognition of foreign qualifications in Canada. Using quite different methodologies, Reitz (2001b), and Watt and Bloom (2001) both estimated that Canada's failure to recognize immigrants' qualifications has resulted in an annual earning deficit of about \$ 2 billion dollars for immigrants. A number of other studies have also pointed out that not all foreign credentials are devalued in Canada; it is the minoritized immigrants who are negatively impacted by the lack of recognition the most (e.g., Adamuti-Trache and Sweet 2005, Esses, Dietz, and Bhardwaj 2006, Li 2008). Against this context, some researchers (Girard and Bauder, 2007a, 2007b) have explored the historical rise of a particular licensure body, engineering, and traced the social and economic roots of the use of Canadian credentials by the engineering licensure body in Ontario. Slade (2008) further explicated how the engineering licensure process itself is exclusive to immigrant applicants in Ontario. At root of the problem, as Guo (2009) pointed out, is the epistemological conflation between difference and deficiency and the ontological endorsement of positivistic and universal measurement by accreditation bodies. Despite the controversial nature of foreign qualification recognition in Canada, as Anderson and Guo (2010) illustrated, accreditation practices have become a technology of power and technology of the self that reroute the work and learning experiences of (para)professionals in host countries such as Canada. This paper contributes to the existing literature by tracing the crevices, gaps and internal contradictions existing in engineering licensure practices from the standpoint and perspective of immigrants' writing exams to confirm their prior credentials.

### **Learning as socially organized practices**

Drawing on sociocultural perspectives of learning (Fenwick, 2001; Sawchuk, 2003; Vygotsky, 1978) and institutional ethnography, a feminist approach of inquiry (Ng, 1995, 2002; Smith, 1987, 1990, 2005), I see learning as a socially organized practice or the effects of social participation as individuals enter themselves into extended social relations that accomplish ruling and control in a textually mediated world. The sociocultural perspective, rooted in Marxist dialectical and historical materialism, posits that learning is an interrelational process; we learn through being a part of social activities where we interact with others through the mediation of tools such as language, texts and technology. In other words, the social environment is more than

the context of learning; it is believed to “bear with [it] the motives and goals of [our] activity, its means, and modes” (Leont’ev, 1978: 47-48). IE, also premised on Marxist materialism, is a feminist approach that starts with the experiences of grassroots people and proceeds to unravel the social relations, or extended courses of actions that render people objects of management of control (Smith, 1987, 2005). In my view, IE complements the sociocultural perspectives as it can be used to unpack the objectifying administrative and managerial procedures that constitute the dominant ruling relations in the economic West today. Further, while standpoint is rarely a concern for sociocultural scholars, IE puts studies of learning into perspective, by committing researchers to the standpoint of people. By bringing sociocultural and IE perspectives together, I have come to see learning as a socially organized process through which intersecting courses of social actions order and organize how we negotiate ways of knowing and doing.

### **The research, research methods, and research participants**

This paper is based on an exploration of the social organization of Chinese immigrant engineers’ learning experiences in Canada, which took place in Edmonton, Alberta and Toronto, Ontario between 2006 and 2008. In both cities, there is a good concentration of immigrants (Chui, Tran and Flander 2005), and of registered engineers in the traditional engineering disciplines such as civil, electrical, mechanical and chemical engineering (Ekos Research Associates Inc. 2003). For the field research, I started by conducting life history interviews (Cole and Knowles 2001; Plummer 2001) with Chinese immigrant engineers. Altogether, I interviewed 14 Chinese immigrant engineers in the traditional engineering fields: 7 in Edmonton (2 women) and 7 in Toronto (3 women). At the time of the interviews, thirteen of them were between 30 and 45, and one between 46 and 50. They had been in Canada for between 15 months and 9 years. All except for one interviewee were married. All married respondents except for one had at least one child. Before immigrating to Canada, one of them held a doctoral degree; 7 had at least one master’s degree; the remaining 6 had a bachelor degree. Interviews with immigrants averaged 3 hours. They covered respondents’ life and work experiences since they graduated in China, with particular focus on their transitional moments and struggles, as well as their shifting perceptions and professional investment as they tried to manage their career life in the engineering profession in Canada.

While conducting interviews with immigrants, I also started mapping the organization of the engineering profession and market through using a combination of key informant interviews, event observation and textual analysis. Altogether, I conducted 17 key informant interviews with employers, project managers, senior engineers, HR recruiters, trainers, and staff at licensure bodies (7 interviews in Ontario and 7 in Alberta). Key informant interviews ranged from half an hour to an hour. The interviews were used to understand the work of the key informants in their different positions within the engineering profession. Additionally, I observed three immigrant training events and analyzed a range of public and policy documents. Observation and textual analysis were used to further trace facets of the organization of the engineering profession. This paper draws only on data collected through interviews with immigrants, and textual analysis.

### **Getting qualifications recognized: The labour of learning for immigrants**

At the time of the study, all the immigrant respondents except for one were practising at the time of the study (one moved back to China already at the time of the interview to resume his engineering business). To get established within the engineering profession, all immigrant respondents except for one applied for P. Eng. licences in their respective provinces. At the time of the interviews, one already got his licence in Canada and is legally authorized to stamp on his designs. One already gave up on his P. Eng. application as he was assigned eight exams and had relocated to China. Majority of them were assigned three to four confirmatory exams. A few were also doing postgraduate studies, or taking university courses in lieu of writing exams.

When asked about their experiences writing confirmatory exams, some respondents suggested that writing exams was not particularly difficult for the Chinese, because they have been through many exams and therefore become skilful at it. To other immigrant respondents, writing confirmatory exams was simply overwhelming. Going for Canadian credentials and licences could also mean extra financial investment. Attending university courses in lieu of exams could be expensive (around \$500 dollars per course according to the participants). Some of the immigrants tried to avoid such an investment. They chose to study for exams on their own. The big difference between self-study and attending training and educational programs is that those relying on self-study are not exposed to the most efficient ways and means of dealing with the exams. One of them, for example, had a hard time when preparing for her confirmatory exams until she was led to some resources by a friend who attended a relevant training program. She said:

[Initially], I went to the library and borrowed a stack of books recommended by PEO [Professional Engineers Ontario]. [Luckily,] [my husband and I] (know) someone who just finished writing Municipal Engineering. He gave me the name of a book – he registered for a course and the instructor gave his class the title of the book. I then borrowed that book from the library too ... I found out that many of the exam questions [from the past exams] were directly taken from that book. When PEO (Professional engineers Ontario) recommends books and materials to you, it does not recommend these kinds of books [which are directly relevant to the exams]. That book was easy to read, and was all relevant to the exam. But the book that was recommended ... was nothing but mind boggling. I was furious! ... For me I needed the book only to cope with the exam. ... actually if you take that course, the exam is not difficult at all. ... I suspect that they did it on purpose. ... as well, I bought their exam questions from previous years from PEO. But later, people told me that those questions are actually available on-line for free in Vancouver, BC. How come they asked us to pay?

The particular experiences of the immigrant suggest that there might be a lack of dialogue between those who set the exam questions and those who offer the resource information to facilitate immigrants' exam writing process.

One other complaint made by an immigrant respondent is as follows:

I was asked to write four confirmatory exams.... One of the compulsory exams is Geotechnical Materials and Analysis. I have chosen many courses, for my post-graduate program (She completed a Master's program in the US), in Geotechnical Material and Analysis. I have also done lots of research in that area. ... so I wrote to them. After a while, I got an email from PEO. I was exempted from

Geotechnical Materials and Analysis. But then, they assigned me to write another exam. What the heck! If I knew that, I would have remained quiet.

When asked whether writing these exams helped them with their professional development, some believed that the confirmatory exams were “totally irrelevant”. One commented: “I do structural analysis for mining projects. One exam asked me to calculate the interval of traffic light switch. What is that for? To test my math ability?” One other respondent whose hair “grew gray” from writing the exams and taking courses at the same time said: “Everything you learn is useful, in a way. . . . But the exams were not written for us. They were written for (the licensure bodies).”

### ***Redundancy, inconsistency, and Canadian-centredness: Academic assessment***

Immigrants’ exam-related learning provided the standpoint for me to inquire into the institutional processes producing the learning loads for immigrants. In this section, I examine the academic assessment practices in the engineering profession in Canada, with particular attention paid to the ways in which, PEO and APEGGA.

In Canada, provincial and territorial engineering licensure bodies grant their own licences and conduct their own academic assessment. This might be confusing for immigrants, especially because Engineers Canada, the national organization of the 12 provincial and territorial associations that regulate the practice of engineering in Canada, also provides education assessment for internationally trained engineers. On the official website of Engineers Canada, it says:

While not part of the registration process to become a licensed professional engineer in Canada, the Engineering International-Education Assessment Program assesses the educational qualifications of individuals who were educated and trained outside of Canada by comparing their education to a Canadian engineering education. It is the only assessment service in Canada specializing *exclusively in the assessment of engineering education credentials*. (Engineers Canada, 2008. Italicized original emphasis).

While on the same webpage, it claims that the assessment, which costs Cdn \$175, will help immigrants to make an informed decision to immigrate to Canada and "provides useful information for employers, universities and other officials" (Engineers Canada, 2008), it has no bearing whatsoever on how readily immigrants may pass their academic assessment by local provincial licensure bodies.

As part of their licensure process, internationally trained engineers who do not hold an undergraduate degree from a CEAB (Canadian Engineering Accreditation Board)-accredited program will need to go through academic qualification assessment. An academic assessment board may assign technical exams to “ascertain whether an applicant’s academic preparation is equivalent to that provided by an *undergraduate* engineering program accredited by the CEAB, or to remedy identified deficiencies in an applicants’ academic preparation compared to a CEAB-accredited program” (PEO, 2007, italicized author’ emphasis). A review of the academic assessment processes by PEO and APEGGA shows that the factors influencing assessment outcomes may vary a great deal in the two provinces.

In Ontario, if immigrants’ qualifications are deemed to be “similar to” what is provided by Canadian programs, they may be assigned a confirmatory exam program, which comprises three technical exams and one complementary exam. Applicants who are assessed to meet the minimum academic requirement to apply for P. Eng. Licence, but do not hold a Bachelor of

Engineering degree and have fewer than 10 years of engineering experience, are normally assigned a Phase 1 Examination Program, which comprises at least four examinations in Basic studies. Applicants whose academic qualifications are judged by PEO to be lower than an engineering degree will be assigned a specific exam program, which may consist of up to 18 exams (PEO, 2008). It is largely through an individualized process that foreign credentials are assessed (Slade, 2008).

In Alberta, the academic assessment is conducted with reference to the foreign degree list (the list), which is a list of universities and programs that APEGGA recognizes. Should applicants' degrees be on the list, APEGGA will start with a standard confirmatory assessment with the Fundamentals of Engineering (FE) exam, an exam developed by a US-based licensure body for engineers and surveyors, or with three technical exams (APEGGA, 2010, APEGGA, 2008). If the applicant's degrees are not on the list, they will be assigned either an FE or five technical exams. Course by course exams may also be assigned to cover deficiencies in the applicant's training and in this case, university courses can be taken in lieu of exams. If the applicants do not have an undergraduate degree, they may be assigned up to 24 technical exams.

Technical exams may be waived under some circumstances in both provinces. In Ontario, three cases may warrant exemption from confirmatory exams. First, if the applicants completed postgraduate studies at a Canadian university in the same engineering discipline as their undergraduate engineering degree. Second, if they come from a country or area with Mutual recognition agreement (MRA)<sup>1</sup> with Canada. Third, if they have five years of engineering work experiences, they would get a face-to-face interview opportunity with the Experience Requirement Committee to perhaps get their experiential knowledge recognized in their discipline-specific engineering fundamentals.

In Alberta, APEGGA may also waive technical exams if the applicants obtained a post-graduate engineering degrees from an accredited Canadian ABET (the US counterpart of CEAB), or mutual recognition agreement university. Alternatively, for those who are assigned with three technical exams, should they provide evidence of at least 10 years of acceptable engineering experience, they might be exempted from the exams. For those assigned with five exams, they would need at least 12 years' experiences before their exams might be waived.

It has to be noted that the academic assessment practices at both APEGGA and PEO have made headways. The key informant from APEGGA related the following changes:

We have been increasing the number of staff and we have been increasing the number of people on the board of examiners as well ... We used to send out the files to the academic and experience examiners once a month. We are doing it weekly now. ... We've removed the real tough deadlines we felt inappropriate. ... And one of the other things (we used to do) was when somebody fail examinations, we would assign additional examinations. ... they agreed to eliminate those penalty exams.

The key informant from PEO also informed me that not too long ago, immigrants needed ten years' work experiences before they could attend confirmatory exam interview with the Experience Requirements Committee. It was recently reduced to five.

Despite the positive changes reported, while reviewing the way in which PEO and APEGGA assess foreign credentials and assign technical exams, a few core issues emerged. First, both APEGGA and PEO make Canadian credentials *the* standards immigrants from other countries have to meet. Foreign training by definition is either inferior or at best equivalent to engineering education in Canada (Guo, 2009; Slade, 2008). Second, separate academic

assessment processes are carried out independently by Engineers Canada, the national engineering society and the local licensure bodies. There does not seem to be dialogue between the national and provincial assessment boards. Immigrants whose qualifications are assessed to be up to Canadian standards by Engineers Canada, and therefore decide to move to Canada may still need to prove to another assessment board at the provincial level of their qualification equivalence by writing confirmatory exams. Third, what is being assessed is applicants' undergraduate training. Postgraduate training obtained in countries other than those with mutual recognition agreement (and the US in the case of Alberta), is considered irrelevant. That is, a significant part of immigrants' training might be accidentally left out of the purview of academic assessors. Finally, the different ways in which APEGGA and PEO carry out their academic assessment work is somewhat ad hoc. As a result, the same immigrant may be assigned a different number of exams and as such may be imposed with differential learning loads at different provinces. For instance, the woman who was initially assigned to write Geotechnical Materials and Analysis in Ontario, may not have to write any exams in Alberta as she had a Master degree in the US.

### ***Conclusion and recommendations***

Based on the research findings, I suggest, a dialogue should be established between the academic assessment bodies at the national and provincial levels. It is important that immigrants do not have to go through two separate processes to get recognized in Canada and have a consistent understanding of the value of their educations in Canada. Second, in evaluating immigrants' past experiences, a mechanism should be constructed to start considering immigrants' postgraduate training obtained in non-MRA (and non-US) countries. Finally, the resources provided to exam writers should be constantly updated. This information should facilitate the writing exam, rather than adding to their learning labour. It is perhaps the best that exam producers should provide the resources that immigrants are supposed to cover before they write exams. Finally, all recommendations above can still be criticized for using master's tools to consolidate the master's house (c.f. Audre, 1988). The bottom line is that, while they may help address some obvious gaps and crevices in the academic assessment processes by engineering bodies, they may be reinforcing the positivistic trend of universal measurement (c.f. Guo, 2009). As well, the fundamental mode from which foreign credentials are assessed is that *other* training is by default inferior to or at best equivalent to Canadian standards. This deficit view (Guo, 2009, Shan, 2009b), needs to be challenged in the long run to bring significant changes to not only the licensure practices, but also the professional practices of engineering in Canada.

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