A Systematic Approach for Applying AI Methods on Civilian Applications and Education

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Abstract

It is often the combined perspective of their integration difficulties and their strategies to overcome them that is presented in the research results, in terms of familiarization with the new work context and acquisition of the necessary theoretical and practical knowledge. Remennick's study of Russian teachers working in Israeli schools is emblematic of this: it highlights strong cultural barriers to their integration, sometimes leading to the abandonment of education, and identifies personal characteristics favoring adjustment to the host environment. In this vein, Wang's study of teachers of Chinese origin working in Toronto schools also identifies these barriers, conceptualized in terms of cultural dissonance, in order to describe adaptations aimed at dealing with it.

I. INTRODUCTION

Using a methodology combining individual interviews, classroom observations and the interpretation of drawings made by teachers trained abroad, the researcher points out personality traits favoring adaptation to the new work context. Compared to this work, the study carried out by Niyubahwe, Mukamurera and Jutras provides a succession of internal changes experienced by teachers trained abroad installed in the Sherbrooke region: shock of reality, loss of cultural references, disenchantment, development of survival strategies, progressive adaptation. As a continuation of this type of study, we find some authors who conceptualized this process from the angle of identity changes.

In all of these works, the individual approach and the cognitive and psychological references refer to a conception of integration which tends to focus attention on the migrant itself, at the risk of underestimate the importance of the host society. Another area of research favors a more ecological approach to the professional integration of teachers trained abroad who gives a more central place to the educational community: school administrators, colleagues and mentors. Here again, most of the work privileges the voice of teachers trained abroad and highlights that, from their point of view, relationships with work are tinged with prejudices and various forms of racism, among others for visible minorities. Be driven in Ontario, in Quebec or in New Zealand, they report deprecating or discriminating attitudes.

They show that teachers trained abroad claim to be isolated, particularized, even rejected. Thus, these studies have a critical positioning, linking the difficulties of teachers who are trained abroad with deprecation identity assignments. The ecological vision is particularly stimulating, because it situates the experiences of teachers trained abroad in the exchanges and interactions established with their work partners. Our approach is part of it, while favoring a register that is more understanding than critical, because we understand that these experiences are components of interactional situations in which - this is our hypothesis - confront different reference frames, negotiate adjustments, and develops a professional socialization in contact with work partners.

Backed by the interactionist tradition of work analysis initiated in the 1950s in Chicago, we emphasize that mastering an activity does not only result from individual capacities to carry out the major operations defining a profession, but also from exchanges established in the workplace which allow the collective acquisition of practical intelligence of situations. It is to recognize, in other words, that all work, and the teaching profession is no exception, is a collective activity and cannot be reduced to the sole issues of expertise or know-how on an individual scale. but also exchanges established in the workplace which allow the collective acquisition of a practical understanding of situations.

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II. BACKGROUND

Within this interactionist tradition, Becker’s work on collective action provides a framework for analyzing the integration of teachers trained abroad in context. Through their coordinated activities, professionals continue daily routines and reciprocal regularized responses. To this end, they mobilize familiar procedures and instruments, produce expected artifacts. The author thus designates the conventions constituting the binder of the network of inter-influences within this group, that is to say common ways of facilitating cooperation that have crystallized, because they have proved fruitful over time.

The members therefore act according to the conventions, while preserving a certain room for maneuver, and socialize the new ones entering these, which means that their common activities generally take place according to the planned scheme and that the work routines are reproduced. This socialization implies that the new members are continuously adjusted according to the responses of the other interaction partners, in order to make their action viable in the context of collective activity and therefore to develop the knowledge that is operational there.

It is the failure or success of their ways of doing things in the new world of meaning that creates or not the need for adjustment, the reactions of others constituting the engine of this regulation. From this perspective, coordinated activities are places and times in which everyone can potentially learn what cannot be taught, in particular through contact with multiple partners. Major contributions from interactionist sociology support this way of conceiving professional socialization, not as preparation for work, but as a process at the heart of work situations by which new entrants acquire skills, routines, interpretations, conventions, relevant in / for these situations. Thus, the idea of collective action leads to the conception that teachers who are trained abroad have been socialized in their country of origin to conventions which differ from those which are in effect in Montreal schools. Work situations then generate tensions and misunderstandings, which work partners experience and which they must gradually reduce in order to preserve a potentially threatened professionalism.

Consequently, how is the confrontation of these symbolic universes negotiated and how does it socialize the trained teachers abroad to operating conventions in their new working environment? Methodology Participants and ethical considerations

Our research on the socialization of teachers trained abroad in Montreal schools was conducted in five schools attached to one French-language school boards on the island of Montreal. We recruited 17 internationally trained teachers with a variable number of years of experience in Quebec, according to two criteria: they had to be voluntary, and to have been trained avoir and have practiced as teachers in another country. These teachers trained abroad were divided into five groups, depending on the schools where they work; All of them signed a consent form which committed us to respect their anonymity and to accept their possible withdrawal without request for justification.

The comprehensive perspective that would guide the analysis of the data was also specified. The research process

In line with the ecological perspective, we favored collective interviews allowing participants to co-analyze episodes of unique experiences lived by teachers trained abroad during the first years past in Montreal schools. Thus, during the winter of 2017, a series of three comprehensive group interviews with each of these groups was carried out.

III. NEW METHODOLOGY

As reported in more detail elsewhere, the first collective interview focused on the first experiences of teachers in Montreal, their stories and their confrontations allowing to characterize the magnitude of the shocks experienced due to the differences between the two work contexts. The second interview was devoted to accounts of practices evocative of experiences in transferring routines and benchmarks, that is to say, operational knowledge that could have been re-mobilized in the new work context. The third interview focused on more problematic attempts at transfer, suggesting that their practical knowledge has proven more or less viable in the new context.

This series of interviews was conducted and animated by mobilizing the string of reasoning by case, by Becker. Data analysis Composed of full transcripts of the 15 collective interviews, the material was analyzed by analytical induction by specifically seeking to identify the narrated events that “test”, that is to say which constitute challenges for teachers trained abroad and which result from the distance between action conventions incorporated in the country of origin and their equivalents in Montreal schools. As we have already argued, these tests are not part of the differences between institutional orders or formal orientations and the concrete conditions for exercising the profession; they are housed in the gaps between the ways of doing things and the expectations of others, between meanings invested in behavior and their interpretations by others. Since they jeopardize the course of activities, and often the professional work itself, they call for negotiated adjustments to restore a shared order allowing the resumption of activity.

These tests have been identified from events and situations involving teachers trained abroad and work partners,
including students and parents. They reveal the frictions of conceptions that cannot be reconciled with the expectations carried by the people involved in an interaction, and held by those who endorse them for obvious or acquired. Also, to identify the conventions that are at the heart of these tests, we have targeted the words that deal with "what to do" in one or other of the contexts, that is to say in the country of origin of teachers trained abroad and in Montreal schools.

These positions on work, This attention to professional ecology, i.e. to all the people whose work contributes to producing education, makes it possible to highlight how much the tests and their negotiation in situation engage the partners and cannot be apprehended on the single individual scale of the teacher trained abroad who crosses them, produces an interpretation and adjusts his practices. We have identified two major symbolic places in which professional conventions are confronted, where socialization takes place: exchanges with students and relationships with the professional community.

IV. NEW METHODS

It is in the specific workspaces that confront professional conventions, those acquired by teacher e s formed e s abroad to their country of origin and they they reinvest in Montreal schools, and those that regulate work in the new context. Interactions with their work partners are privileged moments to grasp a professional socialization made up of surprises and shocks, adjustments and learning. These dynamics are especially striking in the relationship with students and the regulation of behavior in the classroom, on the one hand, and in participation in the community of peers and the definition of professional competence, on the other. Here we present the tests which socialize the teachers form e s trained e s abroad, which relate to the relationship with students and the professional community.

For each, we specify how the mobilization of the country imported agreements in the Montreal context reveals not be viable and what are the resources discovered by the teacher e s formed e s overseas to adjust until mastering the conventions valued in their new workplace.

4.1 The relationship with students: from domination to fraternization
At the heart of teaching practice, relations with students are structured by conventions specific to each education system. And in classrooms, teachers e s formed e s abroad are experiencing the inoperability in Qubec context inherited their work routines. This calls for major revisions of their practices, in order to preserve the possibilities of doing their trade: My problem is that I wanted to impose my lesson on the students, and they don't want to; we were talking about professional conscience. Reciprocal relationships then develop, resulting in particular in terms of availability on the part of colleagues and involvement of teachers e s formed e s abroad in other aspects of life in school: I am on the committees too, even if I didn’t have a lot of opinion, a lot of weight because I was under contract; but still I participate, I contribute with my opinions and my ideas; it also fueled me because it is quite a participation. More commitment to harmonious relations, the greater the teacher e s formed e s abroad are comfortable to endorse local tacit conventions and abandon those they were originally porteurses.

Discussion
We propose to discuss the contributions of our research by putting them in perspective with certain existing work. The accumulated knowledge on the integration of teacher e s formed e s abroad work inform the difficulties they they face and the strategies they they mobilize to overcome them, as well as the personality traits that can facilitate the learning of new ways of conceiving and doing the job.

Studies have marked this professional transition in the form of stages, some of which involve identity transformations. With regard to these insights, it remains to better understand how the members of professional ecology play a role in the integration of teaching e s formed e s abroad, which implies centering on interactions in the workplace. The work that greater consideration these members have retained, with exceptions, the perspective of teacher e s formed e s abroad on their first experiences job. As a result, they rapport they reported how they interpreted the difficulties encountered, suggesting that prejudice, racism and discrimination are more or less deaf at work. Others also examined specific and formal supports, such as mentoring arrangements between teacher e s formed e s abroad and enseignantes locauxles and exprimentes.

V. RESULTS

Analysis of the specific difficulties encountered during their first contracts made it possible to formulate recommendations to better support their integration. For our part, we favored a comprehensive analysis of informal dynamics at work who socialize teachers e s formed e s abroad in the course of daily interactions. And in line with the Chicago tradition, encouraging us to document the temporal dimension of the phenomena studied, we wanted this process analysis, in order to understand how interactions with work partners, through their reciprocal actions, lead to teacher e s formed e s abroad to adjust to act with more competence in their new work context.
Thus, we have shown how, in the participants' study, professional conventions are tested, and defeated, in concrete work situations. We have also shown that these tests allow the emergence of new understandings of these situations and, consequently, produce adjustments in the ways of doing things, demonstrating the mobilization of professional conventions in force locally. Two major dimensions have appeared with regard to this socialization: the relationship with pupils and the regulation of behavior in class; participation in the peer community and the definition of professional competence.

By implementing a survey system focusing on the meeting between teachers trained abroad and a category of work partners, experienced teachers, the meanings of concrete events that marked their professional integration in schools were debated, reinterpreted, in favor of a more comprehensive reading in terms of understanding their experiences. The presence of the mentors was important in this sense, in particular to help put into words the more or less tacit conventions shaken by the first steps at work of the teachers trained in foreign.

The modification of the publication is then done simply by modifying the text. The second, older method requires the user to directly modify the code of the page. For this, the user must learn and know how to use the syntax used by the Wikimedia Foundation. Although this method can be enriching for people interested in using a code, it takes longer to learn and the need for external help from the Wikipedian community is greater. With millions of articles already written, the encyclopedia no longer seeks only to increase their number, but also to improve their quality in order to respond to the many criticisms concerning the relevance of its content. The Wikipedian community continually adopts ever more stringent regulations to control the writing style of employees. Robots were quickly designed to detect any malicious changes.

In addition, the community invites new participants to follow an online learning phase before any article creation or modification. In addition to this framework, which aims to make its encyclopedia more "frequentable", the Wikipedian community and the Wikimedia Foundation made in 2011 the choice to solicit the participation of academicians, universities and cultural institutions. This year marks a turning point in the history of the encyclopedia and several cultural institutions will, mainly between 2011 and 2014, announce the establishment of partnerships between them and the Wikimedia group of their country. A good part of these conventions do not only concern Wikipedia, but also the Wikimedia Foundation's directory of images, videos and sounds: Wikimedia Commons.

1.3. Wikimedia Commons: a media library serving the community

Wikimedia Commons was officially launched in September 2004. Its main objective is to constitute a directory of images, sounds and videos in free and easily usable content. All documents available on wikis platforms are available on Wikimedia Commons. All users must be able to freely and freely modify, copy and reuse the files in accordance with the regulations entered in their descriptions.

This document resource, which contained 11.4 million images in 2011, had, on June 11, 2017, no less than 38,379,223 images, 1,140,723 vector drawings, 781,146 sound files and 104,072 video files. Unlike Wikipedia, the person who wants to import files must have an account and connect. Once the account is created, image uploading is relatively simple and well explained. Logging in through an account is necessary as it tracks the creators of the files in an environment where copyright is important. The theme of the right to exploit files is omnipresent on Commons and the community keeps reminding the rules to different users. This concern for the law is also important for us, archivists, so it is essential to dwell on this topic at greater length. 1.3.1. Copyright and Wikimedia Commons: freedom to use files

On the page dedicated to the reuse of content outside Wikimedia Commons of the documents found there, the Wikimedia Foundation recalls that it only has rights to very little of the content placed on its various projects. Indeed, the foundation does not grant itself rights on the files diffused on its platforms by the users. First of all, it is important to note that certain rules of Wikimedia Commons can sometimes be obscure or contradictory.

If he is in a situation of doubt, the responsible archivist must imperatively communicate with the Wikipedian community so as not to have his work deleted due to improper application of the regulations. Wikimedia Commons only accepts files under free license or in the public domain. The free license recognizes four fundamental freedoms granted to the user of a program or file: use of the work; study of the work to understand how it works or adapt it to its needs; modification or incorporation of the work into a derivative work; redistribution of the work, that is to say its distribution to other users, including commercially. It is important to note that for elements 2 to 4 of the above quotation, the source code of the program used or the origin of the modified document and / or simply shared must be constantly reported. These rights and principles for signaling the original document are found in the two Creative Commons licenses accepted by Wikimedia Commons, namely the CC BY and CC BY-SA licenses.

Attribution-ShareAlike) which authorize the modification and sharing of the original file. CC BY is the "duty to attribution". With this license, the user of the document can "distribute, remix, arrange, and adapt" the original work, even for commercial purposes. However, he must recognize the original creation by citing the name of the creator. This is the most flexible contract offered by Creative Commons. The CC BY-SA requests that the file modified or created from
the original document be distributed under the same conditions as the latter. Theoretically, a person who modified the original document could not add another license, such as "NonCommercial", to his new creation.

The new document will then be released under the same license as the original document. CC BY-SA can thus limit the marketing of a modified image by a third party, because the latter must, in addition to indicating the origin of the modified document which it markets, again disseminate its creation in CC BY-SA and therefore free of charge. In view of the above, it is more than recommended that any service or archive center to distribute its documents in CC BY-SA. The principle of traceability of the original document appears very clearly when consulting the images on Wikimedia Commons. For example, the image of this bust of Louis XIV was modified with the addition of a black background from an original photograph taken in the Palace of Versailles. This modified image has a description and a link allowing to find the original image. Figure 3 Bust of Louis XIV modified. It is important to note that the NonCommercial license of Creative Commons, which prohibits the marketing of the original work, whether modified or not, is not authorized by Wikimedia Commons. This principle is reminded several times on the "About licenses" page of the Wikimedia Foundation media library. Once again, the images disseminated on Wikimedia Commons must be able to be freely transformed, disseminated and marketed. However, an author can choose to publish on Commons a lower quality image while preserving more stringent rights on a high definition version that he would preserve on another platform like his personal site. In summary, and as the quote below shows, the Wikimedia Foundation asks users of Wikimedia Commons to ensure that the files they upload come from the public domain or are free of rights. The license linked to the file more specifically prescribes this: Reproduction and distribution must be authorized; The publication of derivative works must be authorized; Commercial use must be authorized; The license must be perpetual and not revocable; Reference to contributing authors may be required.

Publication of derivative works under the same license may be required; Use of DRM file formats may be required. 1.4. Wikisource: a digital and multilingual library

With more than 240,000 freely searchable and downloadable texts, Wikisource, created on November 24, 2003, is the digital library of the Wikimedia Foundation. Unlike articles on Wikipedia, there is some protection for transcriptions made on Wikisource. Thus, the texts proofread by several responsible collaborators can only be modified by people with a wiki account. Other individuals can nevertheless report the errors noted in the transcription through a page specially dedicated to this effect. When there is sufficient access, editing transcripts is easy. Thus, on the page of the work that one wishes to modify, it suffices to click on the modify tab to arrive on a screen similar to that of a word processor. Saying it is concerned about the reliability of the texts disseminated, Wikisource offers its users a series of icons indicating the level of progress in editing the work and therefore its reliability. These editing percentages are indicated for all texts and can be found in the "text" tab. The reader is also informed of the reliability of the transcription, which he consults with a short text located above it. Wikisource accepts print as well as manuscripts and archival documents. It is therefore possible to read the pages of the manuscript La Chanson de Roland held by the library of the University of Oxford. For each page, a transcription of the text in Latin is offered to users. Currently, these transcriptions have not been corrected by a Wikisource collaborator and the user is clearly informed of this situation. Figure 5 Transcription of page 26 V of the manuscript La Chanson de Roland for manuscripts, official documents or books, the user can choose to read either the transcription alone, or the transcription placed next to the original page of the document from which it originates. The images illustrating the transcriptions and the digitized works are files found on Wikimedia Commons. For example, the work held by BAnQ 350 recipes for cooking by Jeanne Anctil is fully digitalized and disseminated thanks to Wikimedia Commons. The principle remains the same for archival documents.

Year 2011 was a source of concern for the Wikimedia Foundation which saw the number of consultations of the Wikipedia encyclopedia decrease because of the heavy criticisms which were addressed to it relative to the inaccuracy of its content. Faced with this situation, the foundation sought to improve the content of its encyclopedia by establishing a maximum of agreements with GLAMs. The GLAM-WIKI projects aim to disseminate culture and knowledge and to support GLAM dissemination projects by putting online, under a free license, the files resulting from the digitization of the goods or documents held by them. The Wikimedia Foundation and its local chapters offer different types of partnerships that adapt to the specific needs of each GLAM. All known partnerships have always materialized by sending one or more Wikipedians to the signatory cultural institution. According to Wikipedia, wikipedians define themselves as "people identified by a user name, who write and edit Wikipedia articles". There are several ways to welcome Wikipedians. 2.1. The Wikipedian in Residence: a bridge between GLAM and the wiki community

The Wikipedian in Residence is, in the vast majority of cases, from the local Wikimedia group and acts as a mediator between GLAM and the community of different Wikis projects.

The work carried out in educational psychology, andragogy or in didactics of disciplines tends to delimit education around the teacher-student axis and the knowledge necessary to exercise the profession. However, our work rather shows the importance of considering that this work is indeed a not only relational activity but collective, and that a set of actors participate in the production of work and in the ways in which teachers shape their practices. Not only is this inseparable
from shared professional agreements that form a major component of the foundation of professionalism - for example, develop relationships with students before they can engage them in knowledge building activities - but it is produced within a densely populated ecology.

In view of the work devoted to the professional integration of teachers trained abroad more specifically, we have shown that this collective dimension of teaching work must lead to widening the scope working partners considered for the analysis, who carry tacit agreements and participate directly in the professional socialization of teachers trained abroad. In particular, peers play a role, even if this is of less importance at the start, gradually unfolding; their observation provides models of behavior to imitate - even if their meanings remain to be decoded - and, possibly, when relationships are often formed around activities or discussions that are not directly educational, they end up supporting their new colleagues trained elsewhere.

The hierarchies, that is to say the members of the management of educational establishments, take a secondary part as soon as the teachers trained abroad have strategies of avoidance at respect of actors they tend to perceive as a threat. Other educational staff play a more active role, either because they appear more accessible and less threatening, like the secretaries, or because their mission is to intervene in close proximity to the teachers.

However, our survey clearly shows that teaching, at least as it is practiced in Quebec, is not the preserve of the only professional; its symbolic territory is also occupied by the "public", both the students and their parents, who play a major role, even preponderant, in the professional socialization of trained teachers abroad. By their reactions within ecology, they strongly participate in framing the practices of the teachers and therefore in the processual adjustment of the teachers trained abroad towards the local conventions.

VI. CONCLUSION

In short, our results plead for integrating a wide range of partners in the analysis of teaching work, but also in a complementary manner in analyzes which would relate to a particular member of teaching ecology. We have illuminated two symbolic places where the negotiation of professional agreements is played out. Since the relationship with the students and the relationship with the professional community seem to unfold according to similar processes for all of the participants, we can understand that fraternization and active involvement are hardened conventions, almost essential for the culture of local work.

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