Québec anglophone teachers' pedagogies: Observations from an auto-ethnography

David A Reid[1], Annie Savard[2], Dominic Manuel[2], and Terry Wan Jung Lin[2]

[1]Universität Bremen, Germany, dreid@uni-bremen.de ; [2]McGill University, Canada

This paper describes some characteristics of the pedagogy informing the teaching of anglophone teachers in Québec, on the basis of focus group interviews conducted as part of a Canada-wide comparative study. The paper also illustrates research methods embedded in an enactivist methodology that permit researchers to take advantage of the observer dependence of interpretations to gain insight into phenomena, like pedagogies, that are not directly observable. The dependence of results on methods used is illustrated in the case of the anglophone Québec focus group.

Keywords: Pedagogy, methodology, comparative research, teachers' beliefs.

INTRODUCTION

Large-scale international and national assessments have revealed a considerable range of student achievement in mathematics across Canada. When compared to international results, some Canadian provinces, notably Québec, rank among the top countries, while other provinces, especially in the Atlantic region, are significantly below the Canadian average. There are also some difference by the language of the school system. Students from the francophone (French speaking) system in Québec and from the anglophone (English speaking) system in Ontario achieved a higher average than their peers in the other language group in the same province (Brochu, Deussing, Houme & Chuy 2013). A number of factors have been suggested to explain these differences including curriculum, gender, attitudes, beliefs, aspirations, time spent working outside school, parents' education, involvement and socio-economic status and school resources (see, e.g., Anderson et al., 2006; Beaton & O'Dwyer, 2002; Schmidt et al., 2001; Wilkins, Zembylas, & Travers, 2002). Teaching, which might be expected to have the most direct effect on student achievement, is considered less often. In a comparative research project (see http://www.acadiau.ca/~dreid/OT/) we seek to account for some of these disparities through a focus on pedagogy.

The nature of pedagogy

We make a distinction between *teaching* and *pedagogy*. Teaching refers to the observable practices of teachers and their interactions with learners. Pedagogy refers to what Tobin et al. (2009) call the "'implicit cultural practices' of teachers [...] practices that though not taught explicitly in schools of education or written down in textbooks reflect an implicit cultural logic" (p. 19). As Tobin et al. note, these implicit practices are related to teachers' "knowledge in practice" (Anderson-Levitt, 2002, p. 109) and "embodied knowledge" (Anderson-Levitt, 2002, p. 8). Such

knowledge is related to Bruner's (1996) concept of folk pedagogy, the "taken-for-granted practices that emerge from embedded cultural beliefs about how children learn and how teachers should 'teach'" (p. 46). We see pedagogy as characteristic both of communities of teachers (grouped linguistically and regionally in our research) and of the individual teachers in those communities, being both a 'domain' and an 'orientation' in Maturana's (1988) sense. The two key features of pedagogy are that it is implicit and that it guides practice.

METHODOLOGY

The data analysed here comes from a larger project comparing regional pedagogies in middle school mathematics in four regions of Canada that show significant differences in student achievement. The regions chosen for comparison are Atlantic Canada, Québec, Ontario and Western Canada. In most regions two focus groups of teachers were formed, one whose language of instruction is English and one whose language of instruction is French. This was done as large scale assessments have revealed that there are differences of achievement along linguistic lines in some regions of Canada (Brochu, Deussing, Houme & Chuy 2013) and this suggests there may also be differences in pedagogy along linguistic lines. Data from the anglophone focus group in Québec is analysed here.

Recalling Maturana's (1987) statement that, "everything said is said by an observer", we study teachers' pedagogies by examining teachers' observations of teaching. Our approach is similar to the multivocal ethnography approach described by Tobin (1999; Tobin, Hsueh & Karasawa, 2009; Tobin, Wu & Davidson, 1989) and we have adopted their terminology to describe the phases of research. Tobin et al. (1989) describe a layered process of documenting the implicit criteria of members of a community. This process involves working with members to construct a visual ethnography, an auto-ethnography and an ethno-ethnography. At each stage the teachers in the focus groups observe either their own or others' practices, first by creating a video record of their own practice, then by commenting on video recordings of classroom teaching within their region, and finally discussing video recordings of classroom teaching from other regions.

Visual ethnographies: Each teacher was asked to choose three lessons to be video recorded: a lesson that the teacher judged to be a "typical" lesson in her/his classroom; a lesson the teacher considered "exemplary"; and a lesson in which a topic related to fractions is introduced. Each teacher with a researcher collaboratively selected segments to be included in an edited video. An edited video of 20 minutes or less was produced by a research assistant for each lesson recorded by each teacher. These edited videos provide the visual ethnography of the teacher's teaching.

Auto-ethnographies: The teachers in each focus group viewed the edited videos from their classrooms and attempted to identify three that they feel show "representative" teaching in their region. The recordings of these focus group discussions form the first data set: as responses of regionally and linguistically internal observers they

provide an auto-ethnography of mathematics teaching in each region. The three representative videos were used as stimuli for the other groups in the ethno-ethnography phase.

Ethno-ethnographies: Each focus group viewed and discussed videos from other regions, and in some case from other language groups. Encounters with other pedagogies offer the participants a way to reflect on their own familiar beliefs and practices, by comparison with others. The recordings of these focus group discussions form the second data set and constitute the ethno-ethnography of the pedagogy revealed in the videos.

The overall methodology for our research is enactivist (Reid, 1996). As noted above a key element of this perspective is that "everything said is said by an observer" (Maturana, 1987). This insight allows us to overcome a limitation of other studies of teaching practice, such as the TIMSS video studies (e.g. Hiebert et al., 2003). Pedagogy cannot be studied using approaches that involve external observers, as they have no access to what is implicit to the teachers themselves. However, by positioning the teachers as observers, one gains insight through what they observe and how they observe it into the implicit criteria that guide their observations.

In addition the research design includes self-observation by the researchers. In an enactivist approach, the process of analysis of data is an interrelationship, in which researchers find themselves learning new things within a context which is partially of their own creation. The changes which can be triggered in us, that is, what we can learn about the research context, are determined by our theories, beliefs and biases. What we learn is determined by what we know (Reid, 1996, pp. 205-206). In this paper, the analysis of the data was done by the first author, and so it is important to take into account his background as someone who himself was once an anglophone teacher in Québec, and whose teacher education occurred in Québec. However, he did not himself go to school in Québec, and so he is unlike the teachers in the focus group who experienced the Québec schools first as students and then as teachers. His teaching experience in Québec is also now two decades old, and things are no doubt different now. And his perspective has no doubt been modified by his more recent experiences doing school based research in other parts of Canada, and working with colleagues on school based research in England, France and Germany, as well as his main research focus on proof and reasoning.

ANALYSIS

The data analysed in this paper is drawn from the auto-ethnography of the anglophone teachers in Québec. The four teachers in this focus group all teach in the same school, at the grade 7-8 level (called "secondary cycle one" in Québec). They recorded their videos in their grade 8 classes. All the teachers have at least five years of experience teaching mathematics. Their school population is low income and low-middle class, with mostly homogeneous ethnicity. The rate of diagnosed learning

difficulties in the school is high. One teacher left the group because of a stress leave, but gave permission for her videos to be used by the remaining three teachers.

The focus is the transcript of one focus group session, in which the teachers discuss first what exemplary and typical teaching is like, and then select the video about fractions they will share. The transcript can be divided into episodes based on breaks imposed by T, the interviewer. These are described in Table 1.

Episode	Transcript line numbers	Description of episode
1	5-201	Responses to the question "What do you think a typical class in Québec in the English system looks like?"
2	203-266	Responses to the question "You're saying wow this is a really exceptional lesson. What would you be looking at?"
3	269-290	Following a pause, reactions to "It's interesting. I don't know if you guys are interested."
4	296-354	Discussion following T's responses to being asked by S, "What do you think T? About exceptional-"
5	373-405	Discussion following viewing of the first part of Video 1
6	409-419	Discussion following viewing of the second part of Video 1
7	423-444	Discussion following viewing of the third part of Video 1
8	449-494	Discussion following viewing of the first part of Video 2
9	499-611	Discussion following viewing of the second part of Video 2

Table 1: Episodes

The transcript was analysed by coding it for the topic of the discussion. Teaching is complex, and so any discussion of teaching necessarily addresses some aspects of teaching and neglects others. The topics addressed reflect a teacher's pedagogy, even before a particular position is taken. For example, referring to how students are grouped indicates that the topic of grouping is significant, whether preference is expressed for pairs, small groups, whole class construction or some pattern of combining groupings. The topics used in coding the transcripts are listed in Table 2.

These topics were generated from the data in an initial reading of the transcript, asking "What are the topics of this utterance?" for each speaker's turn. The transcript was then read a second time, and each utterance was coded with as many topics as fit. After this reading, several topics were only rarely used, and a third reading was done to check if additional occurrences of those topics had been missed.

Visualisations were then created to assist in in seeing patterns in the topics. For example, Figure 1 shows the topics discussed at the beginning of Episode 1, when the teachers were asked to describe a "typical class". The main focus is on Grouping

(Gr), Format (F) and later Stratification (S). Interaction (I), the Goals of teaching (Go) and How learning occurs (H) also come up. The main focus is on topics related to teaching.

Teaching related topics	**Gr**	Grouping (groups or pairs, think-pair-share)
	I	Interaction (student involvement, teacher prompting, brainstorming, student feedback)
	F	Format (chalk and talk, lecture, modelling, tell me what you need, student-centred approach)
	B	Basis (problem based, skill based, language based, reform, multiple solutions, examples)
	Pa	Pacing (working at the pace of the student, pressure to get through presentation)
	T	Technology & materials (Smartboard, Powerpoint presentation, notebook, worksheet)
	A	Assessment (student accountability, summative evaluation, monitoring, competition)
	Go	Goals of teaching
Learning related topics	**E**	Emotion (motivation, engagement, anxiety)
	H	How learning happens (memorising, repetition, activity, representations, creativity)
	W	What is learned (organisational skills, study skills, real world applications)
	Pr	Prior knowledge and experience
	Co	Specific mathematical concepts (equations, fractions)
Institution related topics	**Cu**	Curriculum (order of topics, goals)
	Ct	Communication between teachers
	Q	Teacher qualifications and perceptions (generalists, specialists, reputation)
	S	Stratification (difference, weaker groups, enriched kids, the strongest kids)

Table 2: Topics used in coding transcripts

Figure 2 shows the topics discussed at the beginning of Episode 2, when the teachers were asked to discuss what an "exceptional lesson" looks like. Again, the main focus is on Grouping and Format as well as Interaction, topics related to teaching. As in Episode 1, Stratification also comes up later. Communication between teachers (Ct) is also mentioned.

These two sub-episodes display a pattern, of focussing on teaching related topics, and stratification, with little or no mention of learning related topics. This pattern was

observed in five sub-episodes (1a, 2a, 4a, 7b, and 8c). Of these sub-episodes, four of the five occur in reaction to prompts to describe a typical lesson or an exceptional lesson. This suggests that teaching related topics are the first to come to mind when these teachers describe lessons.

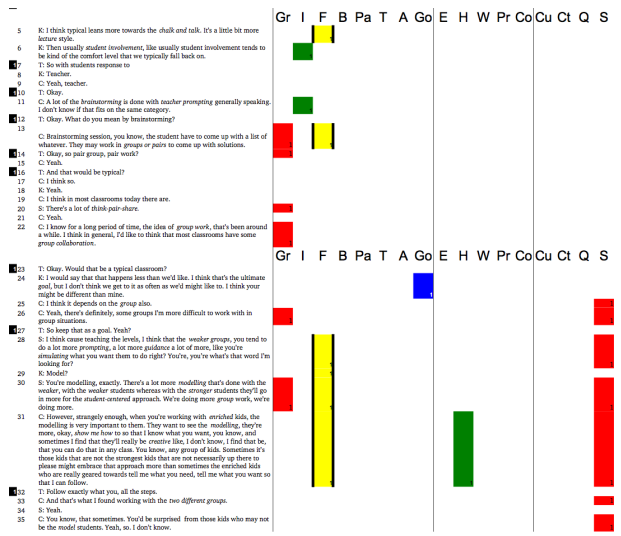

Figure 1: Topics discussed at the beginning of Episode 1

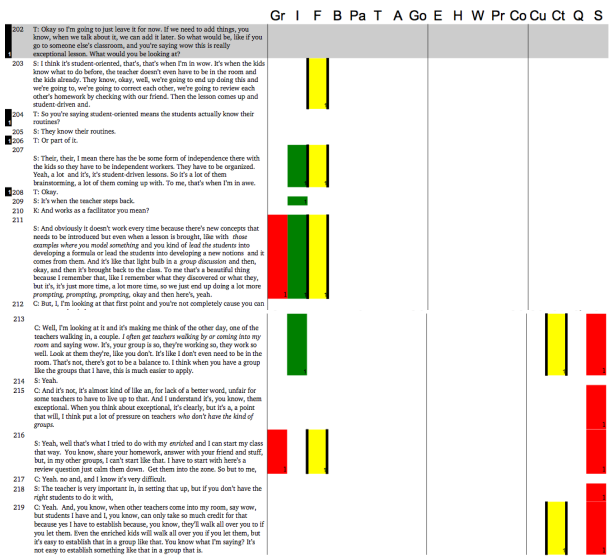

Figure 2: Topics discussed at the beginning of Episode 2

Other topics related to teaching are discussed in sub-episode 1b (focussed on technology use) and sub-episodes 2b, 2c, 3b and 8b, focussed on the basis of teaching.

Episodes focussed on learning

Figure 3 shows the topics discussed in sub-Episode 1c. The focus shifts ways from teaching related topics, although technology, the basis of teaching, assessment and format of lessons are all mentioned. Instead the main focus is on an aspect of learning, specifically what is learned. The teachers are discussing the importance of learning good organisational skills in this sub-episode. “What is learned” is also the focus of discussion in sub-episode 4b, where the topic is learning about real world applications of mathematics and episode 9, the discussion of the second part of Video 2.

In sub-episode 1d, the main focus is on learning about integers, and the students’ prior knowledge (see Figure 4). At one point the topic shifts to communication between teachers. The most extended discussion in which the focus is on specific concepts occurs in Episodes 5, 6 and 7, in reaction to watching Video 1. There the topics are the difference between negative numbers and subtraction in the context of algebraic expressions (in Episode 5), order of operations (in Episode 6) and equivalent fractions (in sub-episode 7a).

Other topics discussed related to learning include how learning occurs (sub-episode 8a) and students' prior knowledge (sub-episode 9b).

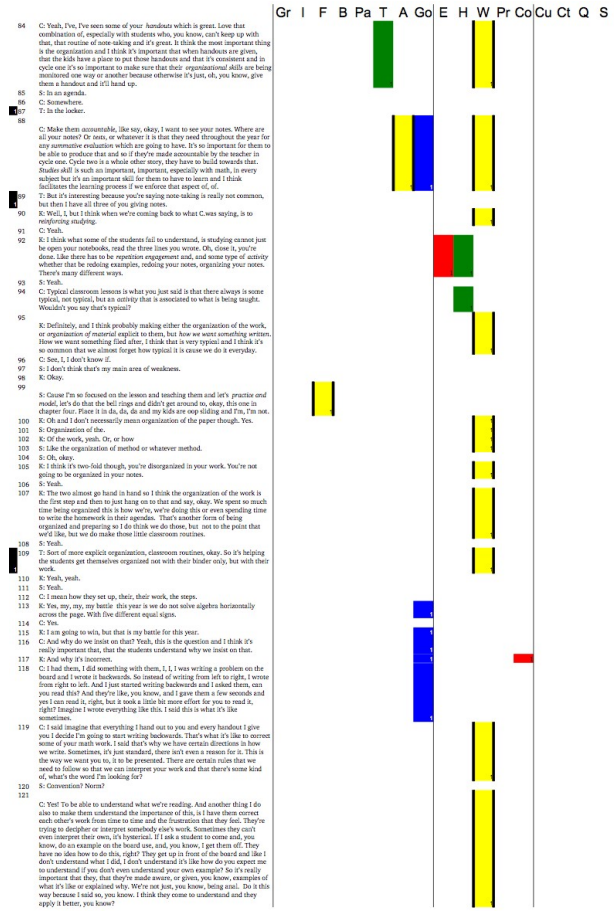

Figure 3: Sub-Episode 1c, focussed on what is learned

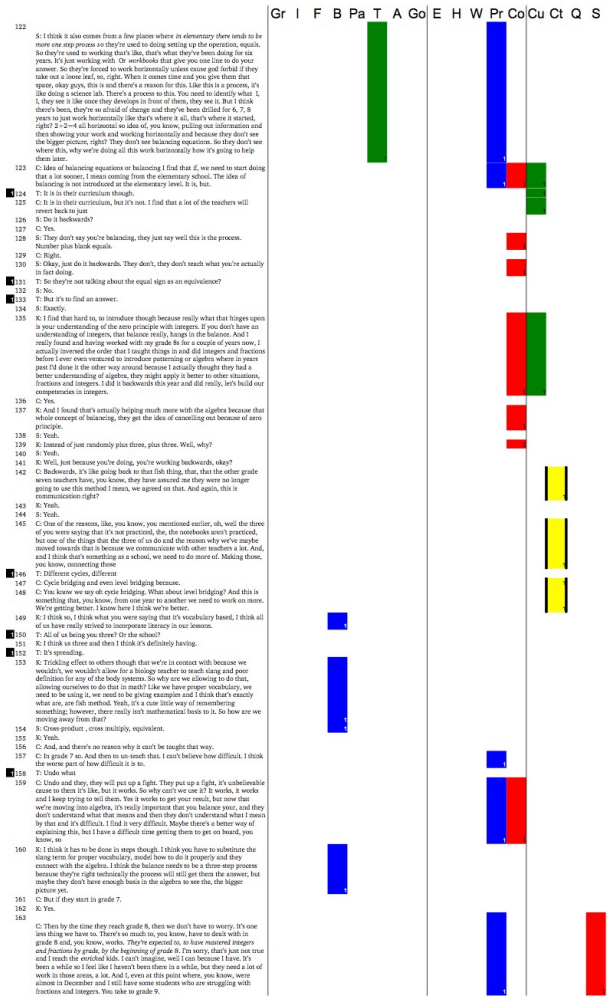

Figure 4: Discussion in sub-episode 1d, focussed on learning about integers and the students' prior knowledge, with a digression on communication between teachers.

Other topics

In sub-episode 1e the topic of the intended curriculum came up very strongly. Topics related to learning, and assessment, also came up. Curriculum is also the topic of the discussion in sub-episode 4c. Again, topics related to learning (especially prior knowledge) and assessment also come up.

The discussion in episode 3 began with reflections on the experience of discussing teaching in the focus group, so the initial topics are emotions and communication between teachers. This shifts into reflections on the status of "Cycle 1" (grades 7-8)

teachers compared to Cycle 2 (grades 9-11) teachers, who tend to be more specialised. The teachers returned to this topic at the end, in sub-episode 9c.

OBSERVATIONS

Table 3 shows an overview of the topics discussed. It makes visible a pattern in the teachers' discussions. In Episodes 1 and 2, when the teachers are first asked to describe typical lessons and exceptional lessons, they focus first on teaching related topics, especially format of lessons, student interaction, grouping, and the basis of teaching. The interviewer, T, also focusses on these topics in Episode 4 when the teachers ask her what she feels is exceptional. In Episodes 1 and 4 however, the focus shifts as the discussion goes on, to topics related to learning: prior knowledge of students, specific mathematical concepts, what is learned and how it is learned.

		1a	1b	1c	1d	1e	2a	2b	2c	3a	3b	4a	4b	4c	5	6	7a	7b	8a	8b	8c	9a	9b	9c	9d	9e
T	Gr	X					X					X														
	I	X					X					X									X					
	F	X	X				X					X						X			X					
	B							X	X		X							X		X						
	Pa												X								X					
	T		X															X								
	A					X			X									X								
	Go																									
L	E		X					X	X	X	X		X	X												
	H					X							X						X				X			
	W			X					X				X											X		
	Pr				X	X								X									X			
	Co				X	X									X	X	X		X	X						
In	Cu					X								X												
	Ct				X		X		X	X																
	Q									X															X	
	S	X	X				X																			

Table 3: Overview of topics discussed

In Episodes 5-7, after watching the videos, there is a striking inversion. The first topics the teachers discuss are related to learning, especially, in the case of Video 1, learning specific concepts. It is only briefly at the end of the teachers' discussion of Video 1 that they mention topics related to teaching (in sub-episode 7b). The discussion of Video 2 (Episodes 8-9) also begins with the topic of how learning occurs and learning a concept, but it then turns to topics related to teaching, before returning to topics related to learning after watching the second part of the video.

A further observation is that the topic of reasoning does not occur. This is noticeable primarily in that the observer in this case (the first author) has a strong interest in reasoning and so would be likely to notice any discussion of it by the teachers. The

absence of this topic is an example of a finding that arises out of our methodological awareness that everything said is said by an observer.

CONCLUSIONS

These results are interesting in several ways. They reflect on the topics teachers themselves find most relevant when describing and reacting to teaching, and on the research methods used and the nature of teachers' pedagogies revealed by them.

The topics the teachers discussed overall are unlikely to be very surprising to researchers who are interested in teachers' pedagogies, beliefs and identities. However, it may be valuable to compare these specific results with results from elsewhere, and to consider sources of differences in both research methods and regional differences. We have made one such comparison, between this anglophone Québec group and the francophone Québec group and found agreement on the format of the typical lesson, the importance of mathematical vocabulary as the basis for teaching, the use of multiple representations (at least in exemplary lessons) and a belief that a high level of knowledge of the curriculum is important in planning exemplary lessons. However, there were also differences related to questioning, synthesis, and attention to student ability (see Manuel, Savard & Reid, 2014, for more details).

From a methodological perspective it is thought-provoking and important that the topics the teachers discussed were different when asked to describe typical and exceptional lessons, and when reacting to videos of lessons. The teachers do not simply say different things in these two contexts, they focus on different *topics*. This means that a research design that relies on a single way of ascertaining teachers' views of teaching will miss some topics and overemphasise others. Within our larger research project, the other focus group sessions were run somewhat differently in the different regions, and in most cases teachers reacted to videos without having any prior discussions of typical and exemplary teaching. It will be interesting to compare the topics discussed in those focus groups with the topics discussed by this group.

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