

“We Are Scholars”: Using Teamwork and Problem-Based Learning in a Canadian Regional Geography Course

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Abstract

This pedagogical reflection recounts the implementation of a team-based and problem-based learning format in a regional geography of Canada course at a Canadian university. Regional geography courses, popular in many collegiate geography departments, often rely on the “transmission” mode of learning, which relies on the presentation of factual information about regions and its recitation in examinations. This format tends to reify existing regional divisions, whether political or otherwise, and makes it difficult for students to comprehend the dynamic, historical and constructed nature of regions. Team-based and problem-based learning was deployed in this third-year course to enliven and enrich the study of regional geography through the use of learning groups which produced regular research products during a series of thematic modules. Based on student feedback and the instructor’s reflections, the article highlights key benefits of teamwork in terms of learning outcomes and student personal development.

Hey there my fellow groupmates! I know others have done this, but good job on the briefing note... We are scholars!!! Keep up the good work! Good luck with the source searching.¹

“We are scholars.” How often during an undergraduate degree does a student get to feel like a scholar? Not often enough, I suspect. This student expressed her powerful sense of self-direction and engagement with learning during a third-year Geography of Canada course organized around teamwork and problem-based learning. As the course instructor, tentatively experimenting with a new teaching approach, I was elated with her spontaneous response. It confirmed my belief that applying more active learning strategies in my classes would enhance students’ experiences. The following short commentary reviews my implementation of these widely admired but less widely applied approaches, drawing on student feedback to argue that they offer an exciting and rewarding opportunity to infuse dynamism and enthusiasm into some of the fustier corners of the human geography curriculum, notably regional courses.

Teamwork and inquiry-driven courses demand that instructors reduce their roles as content-providers and instead guide students through processes of discovery and skill-building. These approaches, whether implemented as parts of courses, entire courses, or across the curriculum, are characterized as “student-centred” pedagogy and embrace a more active role for students in achieving learning outcomes (Barr and Tagg 1995, Rheim 1998). The goal of problem-based learning (PBL) is to encourage students not just to acquire content, but to discover, filter and integrate information, in order to practise what Benjamin Bloom (in his famous taxonomy of learning) categorized as “higher-order” thinking skills (Bloom 1956). Although not necessarily used in tandem, teamwork and PBL strategies are often implemented together. Advocates of team-based learning similarly suggest that student learning is enhanced and deepened through sustained collaborative interactions with peers, often while engaged in solving a research problem (Michaelsen 2002).

Geographers have increasingly embraced student-centred approaches not only for their perceived enhanced learning outcomes, but also for their potential to promote student “empowerment.”

¹ This post, dated February 5, 2007, is from a WebCT discussion board used by one of the groups described in the paper. The author was addressing teammates after the completion of the first module. The student’s name has been withheld to preserve anonymity.

Team-based, active learning facilitates “learner empowerment, in which encouragement [is] given to students to take responsibility for their own learning outcomes,” Healy et. al. (1996) suggest. Indeed, the notion of empowerment emerges repeatedly in the geographical pedagogy literature, connoting not only personal responsibility for learning, but some student control over the learning process (Burkill 1997, Stanier 1997, Spronken-Smith 2005). It must be noted that the goals of fostering students’ sense of empowerment are often in tension with the oft-cited concern of students about “sharing” grades or losing control over their work in team-based modules (Livingstone and Lynch 2000). Nevertheless, while frankly acknowledging students’ practical concerns and emotional barriers regarding collaborative learning strategies, geographers have generally concluded that a well-designed group learning experience, with opportunities for team skills development and reflection on the learning process, can boost both student engagement and retention of concepts (Livingstone and Lynch 2000, Chappell 2006, Scheyvens et. al. 2008). Team-based learning similarly requires a change in the strategies, attitudes, and preparation on the part of instructors; however, it has been suggested that the geographical traditions of fieldwork, group work and interdisciplinarity make teamwork and PBL well-suited to geographers’ research own practices and pedagogical goals (Pawson et. al. 2006, Spronken-Smith 2005).

My own adoption of team-based learning strategies for the geography of Canada course aimed not only to increase student engagement and empowerment, but also to enhance the delivery of key geographical concepts and approaches that typify “regional” courses. Debates within the discipline of geography reveal a paradox surrounding “regional” content in the curriculum. On the one hand, regional geography is seen by many outside the discipline (and some within) as geography’s *raison d’être*: the exploration of the defining cultural, political or physiographic features of various parts of the earth, or what geographers sometimes refer to as “areal differentiation.” Other the other hand, recent trends have seen a decline in regional offerings in many North American post-secondary programs (Halseth and Fondahl 2003) and a declining emphasis on regional approaches in human geography generally. For instance, the textbook I use for a second-year cultural geography course, *Introducing Human Geographies* (Cloke et. al. 2005), contains few references to regions and omits the term entirely from its glossary (although cf. Norton 2004 and Knox et. al. 2004, which preserve some “regional” content). Nevertheless, recent discussions of regional geographical teaching suggest that regional courses can be an important vehicle

for getting students to think not just about “where things are” but also for “getting them to think about the *why behind the where*, or the factors that account for the patterns they see in the world” (Fournier 2002, Halseth and Fondahl 2003, Wade 2006).

The standard model of the “Canada” course taught in geography departments across the country generally reflects the traditional “transmission” mode of teaching and learning. Typically, such courses proceed through a series of thematic and/or regional lectures, with varying amounts of discussion time or tutorials/activities. The major textbooks used in these courses (Bone 2005, McGillivray 2006, Warkentin 1997) reflect this structure, one that remains the template for most instruction in the physical and human sciences. This mode is not without merit. It preserves the role of the professor as content expert. It provides students with clarity, certainty and comfort about course expectations and about what they are supposed to take away from the course. For instructors, such courses are simple to conceptualize and, once delivered, relatively easy to repackage and update as necessary.

These apparent advantages, however, also induce the major shortcomings of this model. This approach places the instructor in the role of authoritative, active speaker for most if not all of class time, often limiting student interaction to listening to the *bon mots* of the class eager beavers during question sessions. It rewards the passive reception of factual knowledge (however glossed with conceptual or theoretical material) and its regurgitation on quizzes and exams or in reports. Lectures alone do not usually engage students in all four quadrants of the Kolb (1984) learning cycle: the reflective and active experimentation components are frequently omitted (Healy and Jenkins 2000). This format also relies heavily on instructor-selected reading tagged to lectures; it offers little opportunity for students to engage in self-directed and -defined research and analysis. Finally, as an approach to teaching regional geography, it tends to reify existing regional divisions, whether political or otherwise, and makes it difficult for students to comprehend the dynamic, historical and constructed nature of regions (Wade 2006; Fournier 2002).

Learning Context

Keen on avoiding these pitfalls in my new regional geography of Canada course, I adapted approaches from several team-based learning information sources.² At Memorial University, this one-semester course caters to both physical and human geography majors, as well as to various other constituencies, including education and Canadian Studies students. Team-based learning advocates stress that the course format and structure should reflect the course goals and objectives for students; for this course, I determined that these included: improving research and writing skills; promoting sustained and meaningful collaborative work; and introducing students to the critical insights provided by human geography into the study of Canada. Thus, I constructed the syllabus around four research modules, plus introductory and final synthesis modules. Each two-week research module (summarized in Table 1) revolved around investigating a major Canadian issue from a geographical perspective (the issues were: Aboriginal Canada, environmental challenges, population and settlement geographies, and national unity). In groups, students were asked to produce a backgrounder (essentially, an annotated bibliography) and a briefing note (a short report) identifying and analyzing the most critical aspect of these issues for their respective regions. During each module, full-class discussions and breakout groups allowed the students to share their regional perspectives with other teams. For the final module, students produced an individual synthesis paper on one of the four issues, using the regional briefing notes produced by the class groups as their baseline research.

² Useful open-access resources for the design and implementation of team-based learning I used included the University of British Columbia Centre for Instructional Support Wiki Site (http://ipeer.apsc.ubc.ca/wiki/index.php/Centre_for_Instructional_Support_-_Wiki_Site) [Accessed 4 July 2007] and the University of Oklahoma Team-based Learning Website (<http://www.ou.edu/pii/teamlearning/index.htm>) [Accessed 4 July 2007].

Table 1: Geography 3405 Module cycle

Module Topics: Aboriginal Canada, Environmental Challenges, Population and Demographic Change, National Unity

Week 1 activities (50-minute class periods, M-W-F)	Readiness Assessment Test (RAT)	Lecture/Team Meeting/Discussion of RAT results	Backgrounder Due; Discussion/Activity
Teaching/Learning Strategies and Outcomes	Individual and group test on background readings to promote individual accountability and team co-operation	Lecture provides introductory “frame” for module. In-class time for team research co- ordination*	Preliminary exploration of regional research problems through full-class discussions /activities
Week 2 activities (50-minute class periods, M-W-F)	Lecture/Team Meeting	Team meeting	Briefing Note Due; Presentations and Discussion
Teaching/Learning Strategies and Outcomes	Opportunity for co- ordination and discussion of Briefing Note; lecture models “geographical approaches” to research problems	In-class time for team co-ordination and discussion. Instructor facilitates and assists in group problem- solving.	Synthesis and comparison of research outcomes through full-class discussions/ activities

* Note: team interaction and co-ordination was also facilitated through the creation of online discussion groups using WebCT courseware.

The high registration (45 students) and the regional nature of Canada aided the creation of research teams. After conducting a brief survey, I divided the class into eight groups (seven regions and one “Canada” group), ensuring a balance of gender, major, and university experience. As recommended by Michaelsen (2002), students spent the entire course in these teams, to provide opportunities for

sustained interaction and bonding. The introductory module included lectures and activities providing students with a rationale for the course structure and an introduction to collaborative learning. We also collectively explored some of the opportunities, pitfalls and “best practices” associated with group management. Although each subsequent module included lectures, significant class time was devoted to meeting in groups, sharing sources and ideas, and preparing submissions. To facilitate group interaction, the course included a WebCT online courseware component to allow for asynchronous communication and file sharing.

Student responses

The challenge of working in teams provoked both the greatest satisfactions and deepest anxieties for students. In feedback solicited on team-based learning, summarized in Table 2, students identified interpersonal interaction and sharing as the strongest elements of the course. “The number of ideas and the group collaboration helps spark better ideas and opens your mind to a different perspective,” wrote one student; “the research products we compiled reflected diverse strengths and perspectives,” noted another. Students identified trust-building, intellectual compromise and personal support as key elements of positive group interactions. Since there were always pressing deadlines and much information to be worked through, class attendance was very high. On the university-administered Course Evaluation Questionnaire (N=33), students scored 4.0625 on a five-point scale (strongly agree=5) in response to the statement, “Team-based learning enhanced my experience of the course.” Spontaneous comments about group learning on the same questionnaire also elicited 15 positive and 7 negative mentions of teamwork.

Inevitably, problems and criticisms arose from teamwork. Scheduling meetings and making deadlines – a major challenge for today’s busy students – proved difficult for many teams, in spite of the use of the WebCT online discussion boards. Most problematically, many students felt that with team assignments “you are not controlling your own grade.” The course incorporated an iterative peer review process and module pre-tests to help enforce individual participation and preparation, but many students remained concerned that their grades suffered due to the “free-rider” problem. In a couple of instances, I was asked to intervene to help mediate group conflicts over workload distribution and the fulfilment of responsibilities. In spite of sharing tasks with team-mates, students found the workload very high and at times felt stressed or burdened by the tight module schedules. As Chappell noted in deploying PBL in

physical geography, students often struggle emotionally with the unfamiliarity of the emergent, even chaotic process of inquiry-based learning (Chappell 2006).

Table 2: Summary of student feedback

This feedback was solicited in conjunction with the final peer review component of the course, after module 4. Students were asked “What are the main benefits and drawbacks of team-based learning as practiced in this course?”

Benefits	Drawbacks
<ul style="list-style-type: none"> • facilitated exchange of opinions and insights • positive social interactions • combination of diverse strengths and backgrounds in teams • shared workload • interdependency promoted adherence to deadlines and schedules • fostered debate and compromise • improved retention of course material • built trust relationships amongst group members • enhanced leadership skills 	<ul style="list-style-type: none"> • difficulty co-ordinating schedules for group meetings • inequitable distribution of workload and/or performance • group sharing of grades • communication problems/breakdowns • difficulties with collaborative writing and editing process • workrate and schedule set by group, not individuals • group size too large

In terms of content, team-based learning also entailed compromises. Teams developed expertise in regional issues and perspectives, and working in regional teams the entire semester allowed them to build a sense of identity with teammates and their regional perspective. In spite of the lectures, full-class discussions and other inter-group exercises, students sometimes struggled to understand other regions and get a sense of the “big picture” of Canadian geography. “I think the average student will retain more in this course, because of the interaction, but on the whole they are presented with less general information,” one perceptive student noted. Students enjoyed the module topics, but these clearly did not

cover the full scope of Canadian human geography. The trade-off, however, was that students were encouraged to become “scholars,” actively investigating and synthesizing information, helping them to develop skills that will serve them well in future studies and in the workforce. As a Team Newfoundland and Labrador member commented, “I feel that I have learned a lot, and not just about Canada or Newfoundland, but I think that I have improved my reading and writing skills.” The research-driven process also produced important pedagogical outcomes for students of human geography. During an in-class course reflection activity at the end of the course, students commented on how their perceptions of both geography and Canada changed: “Before this course I never thought of Canada as having different geographical regions that have many interrelated issues,” according to one comment. Similarly, “this course has ... change[d], inform[ed] and influence[d] on all aspects of Canadian geography by taking a more multidisciplinary approach to the traditional way of studying geography.”

Reflections on team-based learning and regional geography

The power of team-based learning, its advocates suggest, is that it is a *transformative* process, one that not merely informs students, but acts as a catalyst for their intellectual and personal growth (Michaelsen 2002). In this sense, the emphasis on student “empowerment” – itself a nebulous term – as an outcome of collaborative learning was confirmed in this course. This class represented not merely a chance to show students the regional diversity of Canada or the excitement of using human geography to understand this country, but also an opportunity for students to discover themselves, their peers and their own intellectual horizons. Rather than receive and recite content, students were enrolled as “co-producers of learning” (Barr and Tagg 1995): they were challenged to generate information, to define and wrestle with problems, and to articulate their findings. Many students found their research skills enhanced by the emphasis on the iterative production of research products within each module cycle. Friendship, collegiality and collaboration emerged as important positive values of group interaction. I was also struck by the potential for teamwork to promote student personal development through social interaction, group problem-solving and the development of leadership skills. While some individuals articulated frustration with collaborative learning, the direct participation in scholarship, for more than one student, meant that “this learning experience [was] the best one I’ve had since I’ve been here at Memorial.”

Preparing and delivering this course also transformed my ideas about teaching and leadership in the process, pushing me towards a deeper engagement with my students even as I moved from center stage to a more collegial, mentoring role in the classroom. It reinforced my growing sense that the learning process should not be subordinated to course content, but rather that content – framed as research problems – should be used to stimulate individual and collaborative learning engagements. This approach also entailed a reorientation of the traditional classroom hierarchy (and, indeed, the physical layout of the classroom), forcing me to de-center my own position as the class “expert” and trust that students could mobilize and articulate valid geographical perspectives, and provide the evidence to support them (Barnes 2006). Preparing and delivering a course in this fashion was somewhat more demanding than perhaps a traditional lecture course would be; it will be useful to review whether future iterations of the course prove less burdensome for me as the instructor, which may limit my (and others’) ability to integrate these approaches across the curriculum.

If, as Wade (2006) suggests, regional courses provide an important vehicle for teaching geographical concepts and analysis, integrating teamwork and problem-based learning approaches make excellent strategies for revivifying this oft-maligned disciplinary tradition. As a “nation of regions,” Canada’s geography has traditionally been explored through the regional approach, but the increasing disfavour of regional courses in North American universities suggests regional geography requires some re-imagining. My experience suggests that the collaborative learning approaches and student-driven research projects are well-suited to the “new” regional geography, with its focus on “regional formation as a dynamic historical geographical process” (Pudup 1988).

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