

A Capstone Course of “Geographic Ideas”

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ABSTRACT

Through an instructional approach, this article offers a template for a classroom-based geography capstone course grounded in pedagogical elements of synthesis and reflection, as based on exploration of ten key geographic ideas. It provides insights into course goals, structure, and components for instructors who may wish to implement it in geography or in other disciplines, and it situates the template in the general structure of capstone courses detailed in social science literature. The article contributes to geography instruction with a focus on classroom-based capstone courses as an application of teaching and learning undergraduate geography.

Key Words: *capstone courses, geographic ideas, synthesis, reflection, undergraduate education*

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INTRODUCTION

Within geography literature on the scholarship of teaching and learning, undergraduate capstone courses have not been the subject of much attention. A literature review reveals that more work has been published on research-oriented experiences (such as field trips) for geography students in their graduating year, experiences that are bridged to classroom-based courses and that facilitate active engagement with scientific questions and real world problem solving (e.g., Healey 2005; Hefferan, Heywood, and Ritter 2002). Few details on stand-alone classroom-based courses exist. Beyond the pedagogical literature, introductory or upper year textbooks implicitly couch discussion of capstone courses within explorations of the history, philosophies, and definitions of Western geographical thought. Such texts (e.g., Aitken and Valentine 2006; Castree, Rogers, and Sherman 2005; Johnston and Sidaway 2004; Holloway, Rice, and Valentine 2003; Gregory 2000) provide foundational reading for geographers and students alike as a way of exploring the discipline. They offer students opportunities to consider the contested, constructed geographical knowledge to which they have been exposed during their undergraduate programs. While these texts provide some structure for organizing capstone geography courses, pedagogical explorations of capstone courses, their purpose and structure, remain largely absent.

Using as a springboard the assumption that a geography capstone is useful, meaningful, and warranted at the undergraduate level, this article offers an instructional approach to a classroom-based course and provides insights into goals, structure, and components for instructors who may wish to implement it in geography or in other disciplines. It situates this template in a rationale for why capstone courses are important, highlighting key pedagogical elements of synthesis and reflection, as well as in the general structure of capstone courses detailed in social science literature. While systematic assessment of the effectiveness of this instructional approach exceeds the scope of this article, it seeks to initiate dialogue regarding capstone courses and enhance teaching and learning of geography in higher education through its focus on a classroom-based application.

RATIONALE FOR CAPSTONE COURSES

The capstone course is the culmination of an undergraduate career; a crowning experience coming at the end of a sequence of courses that allows students to “put it all together” (Fanter 2006; Nillson and Fulton 2002; Smith 1998; Durel 1993; Schmid 1993). One rationale for offering a capstone course to graduating geography students revolves around the fear that students will graduate with no sense of what, if anything, was “geographical” about their higher education. Given the breadth of geography course offerings in undergraduate programs, students easily lose sight of the big picture in light of specialist knowledge encountered (Castree, Rogers, and Sherman 2005). In other instances students may grasp the vast array of knowledge offered but lack experience in putting the pieces together (Spurrier 2001). Capstone courses offer students a look at geography as-a-whole (Castree, Rogers, and Sherman 2005), allows students to experience the complexity of the discipline, and provides a final mastery experience based on integration (Wagenaar 1993, 209). Ideally, a capstone course will bring to fruition years of disciplined study and practice offering students the opportunity to synthesize prior knowledge, engage in free-flowing discourse, and create an undergraduate *magnum opus* (Schmid 1993, 219). Capstone courses

viewed as "advanced introductory" courses invite students to become part of an ongoing collaborative community of researchers and scholars (Davis 1993; Wagenaar 1993). Asking students to revisit the basics of the discipline and to build on prior coursework can facilitate mastery of disciplinary knowledge and skills. With this mastery comes a deeper appreciation of geography as a means of addressing real world problems (Carlson and Peterson 1993; Davis 1993; Wagenaar 1993).

The capstone course is also a place for students to critically assess their undergraduate experiences (Elliott, Meisel, and Richards 1998; Smith 1998; Dickinson 1993; Tiemann 1993; Troyer 1993; Wagenaar 1993). As such, capstone courses provide an experience through which undergraduates look back over the curriculum in an effort to make sense and meaning of that experience and look forward to a life of building on that experience (Durel 1993). Further, that only a small group of students will go on to graduate work in the discipline raises the question: "What last academic experience can [instructors] provide graduating seniors that will be valuable for citizenship in the human community?" (Troyer 1993, 247). In this context, the capstone course functions as a broader socializing agent, designed to instill in students a sense of self and civic responsibility, as well as disciplinary understanding (Collier 2000, Durel 1993). An element of personal reflection, and potential transformation, is thus necessarily a key component of a capstone course:

The complexities young adults face in transdisciplinary contexts after [university and] college, as well as the complexities inherent in disciplinary learning during [university and] college, require something beyond skill acquisition and application. They require a transformation from authority dependence to self-authorship, or the capacity to internally define one's beliefs, identity and social relations. (Marcia B. Baxter Magolda cited in Jenkins 2009, 1).

In sum, the concepts of synthesis and reflection summarize the rationale and overarching goals of a capstone course. With the former, students ideally progress towards integration (pulling together three or four years of undergraduate study); breadth (providing a general education context on top of specialized study); and application (engaging in advanced research) (drawing on Smith 1998). With the latter, students assess and make meaning of their undergraduate knowledge, skills, and experiences and transition into their postundergraduate career (Castree, Rogers, and Sherman 2005; Smith 1998). The extensive use and integration of classroom-based courses within North American undergraduate programs reflects the value of classroom-based capstone courses, as detailed further in the section below.

STRUCTURE OF CAPSTONE COURSES

Within pedagogical literature in the social sciences, the realm of "culminating experiences" for undergraduate students spans numerous formats, including internships, seminars on special topics (Wagenaar 1993), study abroad programs (Andreasen and Wu 1999), and field courses that facilitate experiential learning. These are in some instances integrated into classroom-based capstones. For example, Healey *et al.* (1996) detail a final-year Issues in Geography module that combines a residential field course with two university-based group projects, one of which includes elements of local fieldwork. More widely used capstone course formats revolve around major projects where students work on a single research paper; the literature also notes internship-style capstone courses whereby students participate in an internship or work in the field, supervised by a faculty member (Fanter 2006). A survey¹ of capstone offerings in North American undergraduate geography programs reveals that 43 percent of departments use field courses or internships, while 40 percent (largely in Canadian universities) use an honors thesis or research study as a culminating experience. Classroom-based capstone courses that do not center on fieldwork, major research endeavors, or internships feature somewhat in the social science literature, and very little in geography literature. This is surprising given that 35 percent of geography departments in North America offer a capstone course focused on the history and philosophy of the discipline and to lesser extent on the transition of students to the working world.

The literature characterizes the ideal course as a seminar with less than fifteen students; those with more students offer larger classes but smaller student discussion groups (Wagenaar 1993). While instructors lecture on occasion, the course utilizes a format where the instructor plays the role of a coach and students learn from one another (Spurrier 2001; Wagenaar 1993). Team-teaching among faculty members who have developed together the capstone course could heighten students' confrontation with the complexities of knowledge (Wagenaar 1993) and do justice to the breadth of the discipline in terms of their wide spectrum of theoretical, methodological, and substantive traditions (Atchison 1993, 226; Davis 1993, 236). Introductory textbooks serve as appropriate course materials that students read and critique in light of new knowledge gained throughout their undergraduate program and within the capstone course itself (Wagenaar 1993, 212); to this end, the capstone becomes an "advanced introductory" course. The general course structure should allow faculty to assess: knowledge (e.g., discipline content area, interdisciplinary connections); skills (e.g., writing, speaking, collaboration, critical thinking, synthesis, evaluation); and attitudes (e.g., openness to more than one position, distinction made between facts and values, reflective self-evaluation, reflective institutional-evaluation) (Smith 1993, 250). The literature details instructional overviews of intensive seminar-based

courses, largely in the discipline of sociology, as well as economics and statistics (e.g., Dickinson 1993; Schmid 1993; Durel 1993; Carlson and Peterson 1993; Atchison 1993; Davis 1993; Steele 1993; Smith 1993; Spurrier 2001).

Beyond the general character and structure of capstone courses, the literature also offers a showcase of best practices in classroom-based scenarios. For example, Troyer presents a thematic template for an intellectual autobiography or portfolio of students' work discussing their intellectual development as college students (Troyer 1993); Elliot *et al.* (1998) introduce an "active-learning" project in which senior economics majors research topics linking works of distinguished economists (Elliott, Meisel, and Richards 1998). The following capstone course offers another thematic structure, based on pedagogical elements of synthesis and reflection, so as to provide graduating students a culminating, integrative experience in the discipline.

"GEOGRAPHIC IDEAS" AS A CAPSTONE COURSE

The capstone course for geography majors at the University of Guelph, namely Contemporary Geographic Thought, *now* encompasses the two overarching goals of capstones detailed earlier: synthesis and reflection. The course initially featured a historical overview of paradigms and schools-of-thought in geography and student explorations of the discipline through critical reviews of key geographical works. The course reminded me of the capstone course that I myself had taken as an undergraduate student. It also reflects offerings found through my North American survey where course descriptions such as these are commonplace:

Geography seminar at the University of Alaska (Fairbanks)

- Discussion of geographic thought including past, present, and future directions of the discipline
- Contributions of geography to science, philosophy, and ethics integrated through detailed review of contemporary literature and research

History of Geographic Thought at the University of Saskatchewan

- A seminar designed to acquaint the major or honors student with the development of geographic thought, emphasizing major themes and people who have been significant in this development

Beyond descriptions contained in academic calendars, I consulted course syllabi where available to determine the common structure of classroom-based capstones. Generally they tend to follow a historical trajectory (e.g., starting with Greek thought and continuing to modern positivist, interpretive, and critical paradigms) and include key geographical works (e.g., AAG Presidential addresses exploring contributions of the discipline or "greatest hits" by prominent geographers).

Happy with this familiar terrain, I taught the course in its first iteration as it existed prior to my arrival. It received lukewarm reviews regarding content; as one student remarked: "Professor Hovorka makes very dull material seem interesting."

It became clear from my conversations with students that while touring through schools of thought in geography excited me given my own interests in philosophy and history of the discipline, this content seemed disconnected from the lives, interests, and concerns of fourth-year students. This motivated me to think about how a capstone course in geography becomes academically insightful and personally meaningful to soon-to-be-graduating undergraduate students. I wanted to design a course that helps students draw together the breadth of classes offered in our honors program, encourages them to think about "what is geography," and gives them a sense of the contributions geographers have made to the discipline and society. I wanted to instill in graduating students excitement about the discipline they had chosen and about being geographers.

The capstone course for geography majors at the University of Guelph, namely Contemporary Geographic Thought, encompasses the two overarching goals of capstones detailed above: synthesis and reflection. My lectures and student presentations identify key themes of geography and provide a historical overview and broader context to help students both integrate their four years of undergraduate study and explore the breadth of the discipline. We tour through the early roots and contemporary nature of geography, discussing its links to exploration, integration of human and physical systems, spatial approach, contributions to descriptive and explanatory science, and so on. The capstone course also provides students the opportunity to assess and make meaning of their undergraduate geography degree through reflection. In-class discussions and exercises encourage students to reflect on and debate the key geographic themes raised and draw on previous experiences in the program to explore how their own perceptions and conceptions of geography have emerged. Guest speakers, often faculty or graduate students from the Department of Geography, complement these reflective sessions by talking about their personal views of the discipline and its relevance to science, society, and their own lives. In core assignments students revisit previous coursework and explore their encounters with specific ideas and themes. This reflective element allows for in-depth and student-oriented synthesis and application of geographic knowledge.

To facilitate goals of synthesis and reflection, the capstone course features "geographic ideas" that have changed the world. My inspiration for this theme came from a CBC television broadcast called "The Greatest Canadian" that aired at the time I redeveloped the capstone course. Before the broadcast, the show's producers asked the population at large: "If you had to pick just one person, who would you name the greatest Canadian?" After compiling a list of one hundred persons, the population voted on their choices

and a top-ten list emerged. Each of the top ten nominees was the subject of an hour-long television show, presented by the nominee's "advocate" who made a passionate and compelling case to win votes for their nominee. After another round of voting, Canadians revealed their "greatest" choice during a finale show. While engrossed in this program, I perused potential textbooks for the capstone course and came across Susan Hanson's (1997) *10 Geographic Ideas that Changed the World*. Beyond the obvious parallels in terms of a focus on "10" ideas (similar to "10" Canadians), this text offered a chance (like the television program) to look at key ideas (people) as an entry point into learning-about-geography (Canada), and exploring the underlying theme of what-is-geography (what-is-Canadian).

I characterize *10 Geographic Ideas* as an "advanced introductory" text accessible in its language and format to undergraduate students and as an effective springboard for students' in-depth investigations of the geographic perspective. The text offers an entry point into the contributions geographers have made to scientific knowledge and society-at-large. This balance of theoretical elements and practical applications extends students' understanding of how geographers explain the world around them, as well as how geography applies and relates to everyday people and the "real world". For example, John Mather's chapter on water budget climatology reviews hydrologic cycle formulations and their applications to evaluating water resources and future climate change scenarios; Edward Taaffe's chapter outlines the concept of functional region, illustrating spatial organization and interdependence and linking it to settlement planning activities; and Robert Kates' chapter on human adjustment traces the human-environment realm of geography as a means of understanding people's everyday coexistence with nature (Hanson 1997).

"Geographic ideas" provide the centerpiece for course assignments, including a group presentation, an academic portfolio, and a major paper, all of which bring forth elements of synthesis and reflection. For the first assignment (worth 25% of the total grade), students divide themselves into groups based on the ten ideas presented in Hanson (1997): the map; the weather map, GIS (geographic information systems); human adjustment; water budget climatology; human transformation; spatial organization and interdependence; nested hexagons; Megalopolis; and sense of place.

Each group leads a class session of approximately forty-five–sixty minutes in length (out of an eighty minute class) based on the chapter itself, as well as external research on the idea. Students present an argument as to why their chosen idea stands as the most significant for the discipline and to the "real world." This assignment enhances their ability to construct logical, substantiated arguments and at the same time strengthens their oral presentation skills. It also encourages them to explore in-depth the kinds of research geographers do, what geographical knowledge this produces, and how it applies to the world beyond academia. As part of their task,

students actively engage with and reflect on their own perceptions and conceptualizations of geography, situating their chosen idea into broad geographic themes highlighted in lectures and explored further through in-class discussion. Extra incentive emerges through a mock-competition based on which group can make the most convincing argument for the single geographic idea that most changed the world. Students cast their votes when presentations conclude, and the winning group (often the top two) receive an extra 5 percent on top of the grade earned for the assignment.

For the second assignment (worth 25% of the total grade), students assemble an academic portfolio, again directly aimed at fostering synthesis and reflective practice. Students chose six out of the ten geographic ideas and track how these ideas have evolved through the course of their undergraduate degree. Students identify three key points highlighted during in-class presentations by their classmates and link them to the broad geographical themes introduced through my lectures and referred to throughout the course. Students also discuss where they encountered each idea in previous course work, in what ways they engaged with it, how their understanding or use of a particular idea changed during their four years, and how their knowledge of the idea will serve them in the future. Each idea overview is approximately one-half to one page in length. The academic portfolio also includes a 1,000-word reflective essay on what students have learned about the world through a geographic lens. They draw together common threads from their six chosen ideas and synthesize this information into a personal commentary on "what is geography?" The following excerpts capture the essence of learning stemming from this assignment:

Reflective overview of "The Map"

Similar to most North American individuals, my first encounters with the map came at a very early age primarily as a portrait of the world on the classroom wall and as a perplexing piece of paper that I would use to see how far away my next hockey game was from my hometown. Since the start of my post-secondary education, I have not had the opportunity or the necessity to delve into the idea of the map in such depth until this current semester as I am presently completing a second year mapping and GIS course, as well as this one. Before these courses, my understanding and use of the map was limited to its basic functions of economic and social representations such as the locations of core and peripheral regions of the world in which I have encountered in previous geography courses. Since the start of this winter's semester my understanding of the map and its importance to the discipline of geography has come around full circle. The most

dramatic change in my perception towards the map comes with the cartographers' ability to manipulate maps in order to influence the users' perception of the material and [the information they present]. With this newly acquired orientation towards the idea of the map, I find myself armed with the capability and need to understand social constructs from more than a single, personal stance and to inquire upon the purpose of the creator(s). I believe this is a very unique trait in which the discipline of geography in general possesses.

Excerpt from reflective essay (personal relevance of geography section)

Personally, my passion for geography is driven by a love of places and a desire to understand why places look and feel the way that they do. My walking shoes have taken me hiking in cloud forests, on walks with my dog in nearby parks, through ancient castles, and out into the backcountry of Ontario. Professionally, my work as a camp director for a camp located within a national park pushes me to use my geographic training when I am determining how the park's management plan fits together with the camp's infrastructure, operations, culture, and budget. Academically, I use a spatial and integrationist geographic framework in all of my geography courses and many of my nongeography courses. For example, in the political science course Development and Underdevelopment, my understanding of spatial organization and interdependence contributed to my understanding of course material and the various explanations for uneven development that emerge from the core-periphery model.

For the third assignment (worth 35% of the total grade), students must write "chapter 11" for Hanson's *10 Geographic Ideas that Changed the World*. For this task, students identify and reflect on a pivotal idea encountered during their undergraduate degree. This is a research-oriented major paper for which students submit a two-page chapter proposal (worth 15% of their total grade) earlier in the semester, identifying the idea and providing a rationale for its selection in terms of its place in geographical knowledge, its relevance to the real world, and its importance to the student themselves. Similar in intent to the previous two assignments, chapter 11 now requires students to move to an original idea, situate it in the discipline through a historical overview, and discuss its relevance to societal issues. Students also discuss how and why their chosen idea changed their perspective on, explanation of, and understanding of the world, as well

as how this may serve them in their postundergraduate career. Chapters are approximately 1,500 words in length and follow the structure of those included in Hanson's text. Students display enormous creativity in this assignment, and the range of chapters includes theories and concepts (e.g., topophilia, chaos theory, overland flow, the watershed, environmental determinism, concentric zone model); subdisciplines (e.g., feminist geography, political ecology, resource management, transportation geography); approaches (e.g., holism, environmentalism); and broad issues that geographers explore (e.g., globalization, climate change, sustainable development).

I have taught the "geographic ideas" capstone course for three years with a class size of approximately fifty-sixty students. Class sessions are comprised of lectures with small-group and plenary discussions, in-class exercises, group presentations, and guest lectures; the level and quality of effort that students bring to each session largely determines course success given that students lead a substantial portion of the course. According to anecdotal evidence and course evaluations, students like the class. They are engaged with the material and participate enthusiastically in pursuit of the course goals. Specifically, student feedback reflects themes of synthesis and reflection as central to their positive learning experiences. As one student notes,

[This is a] great course to have included in the final year for [geography] students! It really ties together everything we have learned over the years and drives home the importance of Geography as a whole.

And as another student states,

I appreciated the personal reflection that was asked of in this course because it helped to capture what I have done as an undergrad in geography, as well as think about what my future ventures might look like, and the career possibilities that lay ahead.

From my own perspective, this capstone course allowed me to creatively "repackage" my own geographical training and knowledge and share my interest in and love of the discipline with undergraduate students. While beyond the scope of this article, systematic assessment of the course is warranted to better understand student capstone learning experiences and to provide much-needed scholarship on capstone course assessment (e.g., Collier 2000; Nillson and Fulton 2002).

CONCLUSION

A capstone course based on "geographic ideas" keeps in the forefront pedagogical goals of synthesis and reflection, and its structure and components allows students to actively participate in their own learning. This innovative

approach to capstones builds on existing social science literature; the ideas can certainly be applied within different disciplines or programs and within various circumstances (e.g., can be adapted into a variety of classroom sizes). This article addresses a gap in the geographic pedagogical literature by focusing on capstone courses for undergraduate geography majors. Ultimately, the geography capstone course is useful, meaningful, and warranted at the undergraduate level.

A discussion of capstone courses raises questions regarding what geography instructors believe students should take away from their undergraduate careers. A potential disconnect exists between instructors who feel that theory, advanced methods, or applied research courses necessarily cap the undergraduate experience, and those instructors who believe that a final course should focus on the transition to postgraduation careers (Dickinson 1993). This article offers an instructional template for a classroom-based capstone course that builds a bridge between these disparate perspectives: offering opportunities for students to assemble their thoughts on geographical knowledge and its practical application, and exploring the role and significance of geography to science, society, and their own lives.

NOTE

1. I conducted a Web-based survey of geography departments in North America, including forty in Canada (100 percent sample) and forty in the United States (16% sample of 244, randomly selected) as listed on the Canadian Association of Geographers and the Association of American Geographers Web sites respectively. Capstone offerings (in the final year of undergraduate study) were classified into classroom-based courses, field courses, or thesis/research paper options. Results were tallied numerically and course descriptions for classroom-based offerings were collected from academic calendars to compare goals and content.

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