

ONLINE PROFESSIONAL DEVELOPMENT IN GEOGRAPHY: THE LEARNING CLUSTER METHOD AND TEACHER LEADERSHIP

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Abstract

The Gilbert M. Grosvenor Center for Geographic Education has been experimenting with online professional development in geography. The first effort has been the production of four video programs in a series called, “Geography: Teaching with the Stars.” The programs are 1) “Globalization,” “Watershed Management,” “Agriculture and Water,” and “Tidewaters.” Using these programs in a workshop environment, the authors became aware that teachers found the online method of professional development at least equally attractive to the traditional face-to-face method. Many teachers found positive elements in both techniques and supported a hybrid approach, which led to the development of the Learning Cluster Method, a hybrid (online and face-to-face) configuration that relies mainly on the power of teacher leadership traits, while at the same time significantly increasing opportunities for dissemination of quality professional development in geography. The authors believe that this approach holds substantial promise for international collaboration in teacher professional development.

1. INTRODUCTION

Teacher preparation in geography at all levels, is sometimes fragmented and ineffective. In the United States, the National Geographic Society sponsors a state-by-state Network of Alliances for Geographic Education designed to upgrade teacher performance in the classroom. These Alliances address mainly in-service teachers and they do so in a face-to-face manner, using professional development techniques that often have remained the same for more than two decades. In the meantime, advancing technology has changed the way we shop, communicate, bank, drive our cars, and organize household finance.

Responding to a need for more modern forms of professional development, The Gilbert M. Grosvenor Center for Geographic Education, in 2010, began the production

of an online professional development series, “Geography: Teaching with the Stars” (“Stars”) (Boehm, Brysch, Mohan, & Backler, 2012). Four programs, “Globalization,” “Watershed Management,” “Agriculture and Water,” and “Tidewaters,” are complete and available free at: www.geoteach.org), and include six major component parts:

1. Classroom demonstrations – A ‘Star’ teacher is shown teaching issues-based classroom lessons; teacher to student interaction and student-to-student interaction.
2. Pedagogic enhancements – A critique of the ‘Star’ teachers’ activities and strategies used in the classroom by a mentor teacher.
3. Content enhancement – A case study on the program’s major content focus, or commentary on the issue by experts in the field.
4. Instructional materials – All lesson plans and materials, including worksheets, articles, graphics, and assessments used by the teacher.
5. Facilitator’s guide – Step-by-step instructions for teachers to implement a “Stars” workshop either using a face-to-face or online format. A third option is to develop a hybrid workshop, where online and face-to-face methods are combined.
6. Website forum - Opportunity for teachers to interact, collaborate, share resources and ideas, ask and answer questions, and extend the professional development experience.

2. LITERATURE REVIEW

While face-to-face professional development continues to play an essential role (Davis 2011), successful online or web-based methods in math, science, and language arts professional development are widely available (Dash, de Kramer, O’Dwyer, Masters, & Russell, 2012). These experiences helped to organize and guide the development of the “Stars” online professional development approach in geography. Many benefits have been identified and related to the use of online professional development and include reaching larger audiences (Marrongelle, Sztajn, & Smith, 2013), less cost association (Power, Shaheen, Solly, Woodwant, & Burton, 2012), and offering flexibility and ease of access (de Mesquita, Dean, & Young, 2010).

Using video in particular allows the in-service teacher to view a teacher in an actual classroom situation (Boehm et al, 2012); and, for the pre-service teacher, this is an opportunity to connect theory to practice (Barnett, 2006). For both of these groups of teachers, the online experience provides a more in depth and continuing analysis of a classroom situation (Wang & Hartley, 2003). With that being said, traditional forms of professional development remain important to many teachers (Stern, 2004) and some feel community building is a positive factor while participating in a face-to-face format (Gilchrist, Carpenter, Bowles, & Gray-Battle, 2012). On the other hand, Cho and Rathburn (2013, 144) argue that traditional forms of professional development constrain “active participation.” Overall, teachers should have access to high quality professional development in formats that are flexible, effective, and meet individual needs.

3. ACCEPTANCE OF “STARS”

Presentations involving “Stars” as a means of teacher professional development have been largely successful. The programs have been used in workshops, summer institutes, and professional conferences at both the state and national level. Internationally, “Stars” programs have been displayed at the 2012 annual meeting of the Geographical Association in Manchester, England, and in May of 2013 at the European Association of Geographers conference in Bruges, Belgium.

Several experiments were set up to measure the efficacy of online professional development in geography. Teachers were asked to evaluate the online delivery system, and then compare it to a traditional face-to-face approach. Table 1 displays teacher responses to a number of evaluative questions. While the number of respondents (10) was small, there was considerable agreement that the “Globalization” program in the “Stars” series was a valuable professional development resource. A couple of specifics should be highlighted. When asked if the “Globalization” program would “make you a more effective teacher,” 8 of 10 respondents answered with the highest response.

In another key question, teachers were asked to rate the series “as a means of improving teacher effectiveness across the state.” Nine of the 10 respondents gave the highest possible answer. Eighteen teachers participated in a comparative study of “Stars,” face-to-face professional development was combined with the online technique (Table 2). While not clear cut, the results appear as though the online method is at least as acceptable to teachers as a face-to-face training session. For most of the comparison questions, the majority of the answers fell in the category of “equal” (meaning the two methods are equal), or “Stars” is either “somewhat better” or “much better.” We should note that teachers were not as confident when it came to the web-based interactive forum. Clearly, teachers value the communication that occurs in a face-to-face workshop or institution. A focus group was also held among a group of teachers and when asked to compare “Stars” in a face-to-face and online method, they commented:

- “The face to face has the benefit of the teacher being there and being able to ask questions about any part of the lesson which you might be unsure of. Also, you have the opportunity to complete parts of the lesson and see/do the hands on activities.”
- “I preferred the face to face as I was able to ask questions but I also liked the video and online presentation as I was able to re-watch and have time to digest what I saw and read.”
- “The video allows you to see the lesson being done within an actual class and the preferred outcomes of the lesson.”
- “The [online] forum would make it possible to ask any questions that a teacher may have.”

Table 1. Teacher responses to “Stars” (Source: Adapted from Boehm et al, 2012).

Questions	Low (1)	(2)	Medium (3)	(4)	High (5)	x
1. How useful did you find the Globalization program?				5	5	4.5
2. How useful did you find the pedagogic enhancement?		1	2	4	3	3.9
3. How useful did you find the content enhancement?			3	1	6	4.3
4. Please rate the potential of this program (Globalization) and others like it to make you a more effective teacher.				2	8	4.8
5. Please rate your level of confidence in using this program (Globalization) or other “Stars” programs like it to lead an in-service workshop in your home school district.			2	2	6	4.4

6. Please rate this low cost, web-based professional development approach as a means of improving teacher effectiveness across the state.				1	9	4.9
7. Please rate “Stars” as a means of improving teacher effectiveness in remote areas of the state.			1		9	4.8
8. How helpful would this professional development approach have been in your pre-service education program?		1	1	1	7	4.4

Table 2. “Stars” comparative face-to-face and online institute workshop survey results (Source: Adapted from Boehm et al, 2012).

Component Parts	Face To Face Much Better	Face To Face Somewhat Better	Equal	Stars Somewhat Better	Stars Approach Much Better
Classroom Demonstration	2	4	2	4	6
Pedagogic Enhancement	1	5	5	5	2
Content Enhancement	0	0	3	4	9
Instructional Materials	5	0	10	0	3
Facilitator’s Guide	2	4	9	1	2
Web-Based Interactive Forum	3	3	4	0	7

4. THE LEARNING CLUSTER METHOD

We have found that widespread dissemination of the “Stars” programs has been reduced by some teachers wanting to retain and participate in traditional face-to-face methods, and others who feel that the online teacher forum does not sufficiently replicate interaction gained in a face-to-face workshop. These are serious limitations, or, perhaps educational issues, that must be addressed for online professional development in geography to reach its full potential.

In an attempt to address these perceived drawbacks, we have developed the Learning Cluster Method (LCM), a format that is a hybrid teacher training method that combines face-to-face interaction and the utilization of the online professional development approach (“Stars”). In the LCM, teachers are initially brought to a central location where they interact in a workshop situation. In Texas, numerous workshops have been conducted at various Educational Service Centers (ESCs) or other institutions in this manner. Teachers and guiding facilitators review the “Stars” program(s) and focus on online or face-to-face professional development while also encouraging widespread dissemination (Brysch and Boehm 2013). Each teacher in the original cohort, after becoming familiar with the online version of “Stars,” then prepares a strategy to interface with a new cohort of teachers at another educational service center or back in

their own school district. This is an attempt to reach additional groups of teachers in that particular ESC and beyond. One teacher described her implementation plan using the Watershed Management program as follows:

“I would explain the objective of the Stars program and then introduce the lessons available and show one of the videos (or more depending on time). Then introduce the supplemental materials and many other resources available. After I have had a chance to use the lesson myself in class, I would share how I incorporated all or parts of the lesson into my class. Share ways to possibly pulled from both videos to teach the concept to the level of students in my class – such as making a paper water shed model if my school cannot get access to a real model.”

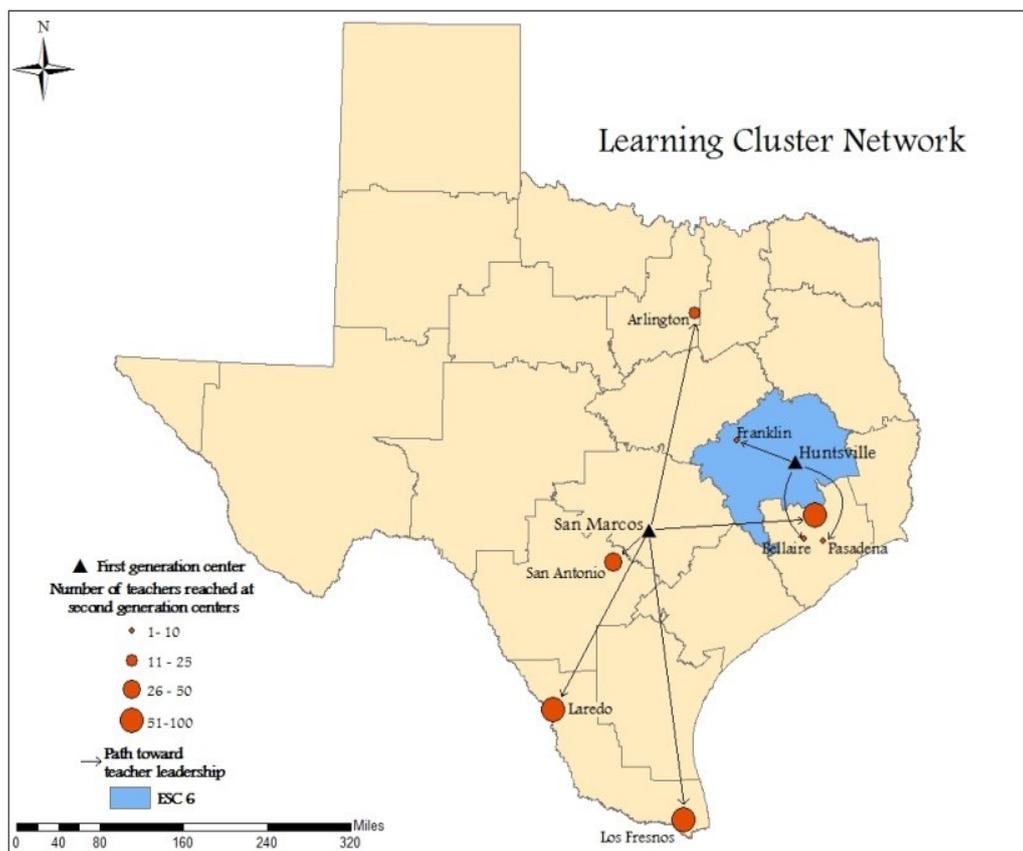
The LCM also asks for and requires the development of teacher leadership skills (Brysch and Boehm 2013). To highlight or emphasize these leadership skills, a hybrid approach to professional development, using the advantages of both traditional face-to-face, and the more modern online technique, maximizes the potential for collaboration and interaction. For example, representing the core values and teacher education techniques of the Learning Cluster Method, Gutierrez and Bryan (2010, 42) reported that a teacher, after another experience with online professional development exclaimed:

“I see myself more in a leadership role after this experience than before. Previously, I thought a leader was the one who always speaks up at staff meetings, but now I believe it’s the person who is willing to share and guide, listen, and expand for themselves, the students, other educators, or for future educators that are within their reach.”

Strong mentor teachers who are able to pass on their knowledge and skills to either practicing or pre-service teachers are vital to the success of continued professional development. Teachers in the second and subsequent cohorts of the LCM also become teacher leaders and so the process is continuous, fulfilling the promise to reach more teachers.

The LCM is also designed to encourage continued teacher collaboration and interaction through the use of the website forum. Teachers share their workshop experience whether face-to-face, online, or through the use of a hybrid method with other teachers. Here teachers engage in the exchange of resources and are able to discuss what worked in their own workshop situation, as well as, how the lessons were used in their own classrooms.

Thus far, we have experimented with the LCM in the states of Texas and Iowa, with considerable success. As demonstrated in Figure 1, first generation use of the LCM expands into a second generation of teachers while developing and enhancing teacher leadership skills in the process. We believe that the successful use of the LCM provides an opportunity for teachers to help each other in the delivery of pedagogy but also should help them master a geography curriculum that varies considerably from state-to-state and country-to-country. Like ripples in a pond, once the LCM is made operational, two things happen; 1) many more teachers receive quality professional development, and, 2) teacher leadership techniques are encouraged and strengthened.



5. POSSIBLE REMEDY FOR NATIONAL AND INTERNATIONAL DIFFERENCES IN CURRICULUM DEVELOPMENT

The National Science Foundation funded project, “GeoCapabilities: An International Approach to Researching and Improving Teacher Preparation and Leadership in Geography,” (NSF Award # BCS-1155255) examined the school geography curriculum in the United States, the United Kingdom, and Finland. Prominent geography educators in those countries surveyed the most recent published version of a national curriculum and reported back on the nature and scope of that which was to be required of school students and how these aligned to three capabilities (Nussbaum & Sen 1993) principals. Not surprisingly, each country was quite different. The country-by-country descriptors, generated under the research umbrella of the “Transatlantic Collaborations” grant reveal quickly the diverse nature of national curricula in geography. This should not be unexpected given the fact that economics, politics, and national identities have been found to frequently twist and turn the school curriculum in geography (Moore & Boehm 2010). This is true at the state level in the United States as well.

Thus, on both a national and international scale, defining the core concepts of geography is a difficult task. The same could be observed in the United States, where we have voluntary national standards (Heffron & Downs 2012), but the real guide to geography education is found in the state-by-state standards. Lambert and Morgan (2010) further address this disciplinary problem by suggesting the following:

“the ‘grammar’ of the subject (geography), by which we refer to the concepts and perspectives on which the subject discipline draws, and which affords us a means to understand and make sense of the world, often

remains elusive to students, parents, and even the school leadership team”
(p. 39)

We not only agree with this assessment of the curriculum situation, we would argue that the best chance for “self-fulfilled and competent individuals, informed and aware citizens” among the student body, lay with dynamic, thoughtful, and well prepared teachers. Further, we believe that developing teacher leadership as a means of disseminating collaborative, transatlantic teacher preparation initiatives is a needed pathway, required by the uneven preparation of pre-service teachers in most, if not all, countries of the world. This problem is further complicated by geography curricula that require different things at different levels, as well as, different things from one country to the next. The argument is that the less well-prepared teacher teaches the standard (national) curriculum, possibly relying heavily on a textbook or other standardized instructional materials. While this is not bad, in, and of itself, the responsible teacher needs further pathways to quality professional development. A manner of dissemination, therefore, is needed that reaches students through their teachers.

Taking all of this into account, could the LCM approach serve as a means to partially remedy the unevenness in national and international geography education curriculum frameworks and a way to promote teacher leadership and foster the necessary teaching and learning of geography in schools everywhere? We have demonstrated wide success with “Stars” and the LCM. Furthering this approach in an international environment could foster interaction and collaboration to meet the needs of all teachers regardless of location and issues related to standards and curriculum.

6. CONCLUSIONS

The school curriculum in geography is uneven, and often poorly understood by teachers and school officials, whether it is on a state-by-state level, as in the United States, a country-by-country basis, such as in most of Europe and the rest of the world. That is, since geography is a very eclectic subject, and since state and national standards vary, the burden of prioritizing the curriculum and ensuring quality teaching and learning increasingly falls on teachers. Since many geography teachers are inadequately prepared in pre-service programs, it makes sense for mentor teachers, referred to in this paper as teacher leaders, to take responsibility for providing model pedagogy and examples of issues with universal geographic dimensions and appeal.

The Grosvenor Center (<http://www.geo.txstate.edu/grosvenor/>) has attempted to address this need by producing “Geography: Teaching with the Stars.” Further, the authors of this paper have initiated a dissemination process using the online professional development technique, “Stars,” combined with the Learning Cluster Method. This method of teacher training involves a continuous process of professional development all organized and led by educators as teacher leaders. We believe that teacher leadership using the LCM has the potential of overcoming the curricular unevenness that appears in state or national standards in geography, as well as, improving pedagogic quality among a rapidly growing cadre of teachers. The authors of this paper acknowledge that most of their work has been done in the United States, but they believe that the same educational principles apply and may be useful on an international basis.

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