

ANALYSIS OF THE EVOLUTION OF AN ONLINE PROFESSIONAL  
DEVELOPMENT SYSTEM IN GEOGRAPHY EDUCATION

by

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## **DEDICATION**

This dissertation is dedicated to my parents,  
Elias Brysch, Jr. and Anita Escobedo Brysch.

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## ABSTRACT

This longitudinal study extended across three and a half years and measured teacher receptivity to three different types of professional development delivery systems in geography (face-to-face, online, hybrid). Following an incremental learning process, each experimental situation was built on the results of prior workshops. While the *Geography: Teaching with the Stars* programs are designed to be self-sustainable, requiring teachers to access a website and essentially self-guide themselves using the component parts of the series, the hybrid approach was designed to allow teachers to use online professional development in combination with traditional methods of teacher training (face-to-face in-service workshops and summer institutes). The Learning Cluster Method was developed to broaden the distribution of online professional development in order to reach a broader spectrum and larger numbers of teachers, encourage the formation of an online learning community, and facilitate a gateway to the development and enhancement of teacher leadership skills among participants. In order to meet these goals and provide the opportunity for teachers to receive the highest quality training, each of these approaches was analyzed to determine teacher satisfaction, and provide a formative evaluation of an increasingly sophisticated professional development system in geography.

## **CHAPTER I**

### **Introduction**

Many teachers who teach geography do not have a significant background in the subject (Boehm, Brierley, and Sharma 1994; Gregg and Leinhardt 1994; Bednarz, Stoltman, and Lee 2004), are often certified in other social studies subjects, and have taken little or no coursework in geography (Kenreich 2004). Because of this lack of background knowledge, in-service professional development (PD) opportunities typically fill this educational gap for teachers, providing them with the opportunity to gain essential content knowledge (CK), pedagogic knowledge (PK), and pedagogic content knowledge (PCK) (Boehm et al. 2012). In fact, regarding actual classroom practice, initial teacher training observation and field placement experiences are often insufficient in helping to develop teachers who are ready to deal with the realities of the classroom (Masingila and Doerr 2002). On a policy level, the reauthorization of the Elementary and Secondary Education Act (Darling-Hammond 2010; Meister 2010), continues to mandate the critical objective of having highly qualified teachers in every classroom. Teachers must have the necessary skills and knowledge to be effective in the classroom, as well as acquire the necessary Continuing Professional Education (CPE) hours to retain their teacher certification. It is crucial, then, for teachers to have access to high-quality PD (Borko 2004; Baran and Cagiltay 2006; Dede et al. 2009; Boehm et al. 2012) in order for them to effectively teach and equip students with the necessary content, skills, and tools needed to become competent 21<sup>st</sup> century global citizens (Zhao 2010; USDOE Office of Educational Technology 2013); especially geographic concepts and skills students should know and be able to do, as outlined in *Geography for Life: National Geography*

*Standards, Second Edition* (GESP 1994; Heffron and Downs 2012). An improvement in student learning begins with teachers who are able to present and disseminate information effectively (Reitano and Green 2012); this has been the main goal of an organized cadre of professional geography educators for more than 25 years.

### Professional Development in Geography

In response to reports proclaiming that United States students lacked geography knowledge (The Gallup Organization, Inc. 1988), in 1985, the National Geographic Society's Geography Education Program (GEP) launched the State Geography Alliance initiative (Bockenbauer 1993; Grosvenor 1995). A partnership between K-12 schools and teachers and university geography educators, the principal goal of the Network of Alliances for Geographic Education (Alliance Network) has been to increase teacher knowledge of geography, and improve pedagogy through carefully planned and executed summer institutes and workshops while also disseminating a multitude of resources. Geography Alliances have been established in every state, as well as the District of Columbia, Chicago, Canada, and Puerto Rico (Dulli 1994; Grosvenor 1995; Mohan and Boehm 2009).

A major emphasis of the Alliance Network, early on and still in effect today, albeit perhaps in a different form, is developing competent and effective teacher leaders. Designated as Teacher Consultants (TCs), classroom teachers are trained under the Alliance programs so that they might obtain a specific geography teacher leadership role while also acquiring a "sense of professional empowerment" (Bockenbauer 1993). Once they master this training, they return to their home school districts as mentor teachers, capable of sharing their skills in PCK with colleagues. Some of the TCs present at

conferences and train other teachers in best practice strategies that correlate to pedagogy and geography content, thereby, maximizing investment (Binko 1989a; Binko 1989b; Bockenbauer 1993). In effect, “the best teacher of teachers is another successful teacher” (Binko and Neubert 1984, 16) and these “turnaround training” sessions are meant to build cohorts of teachers with these same skills (Hansen-Thomas, Casey, and Grosso 2013, 132). In these instances, teachers make a contribution to the learning profession by “lead[ing] beyond the classroom” (Katzenmeyer and Moller 2001, 122).

For over 25 years, the Alliance Network has conducted thousands of face-to-face workshops and summer institutes reaching tens of thousands of teachers and ultimately affecting students’ knowledge of geographic concepts. Although proven effective (McREL 2002; Englert and Barley 2003; Kenreich 2004), these face-to-face workshops only reach a fraction of the teachers who could benefit from effective PD. Many teachers find face-to-face PD opportunities difficult to access because of cost and distance barriers (de Mesquita, Dean, and Young 2010; Boehm et al. 2012; de Kramer et al. 2012). Another handicap to face-to-face in-service PD is the nature of teacher attrition; reports have found that “one out of five beginning teachers leaves the profession after the first year” (Gonzales, Brown, and Slate 2008, 1), and more than 20 percent of “teachers leave within their first three years of teaching” (Dove 2004, 8). All of these factors contribute to the intricate and difficult realities of teacher professional learning.

*Geography: Teaching with the Stars (Stars)*

In 2009, with these handicaps in mind, the Gilbert M. Grosvenor Center for Geographic Education, partnering with the Agency for Instructional Technology (AIT), and the National Geographic Society (NGS), launched the development of the

online/video-based PD series, *Geography: Teaching with the Stars (Stars)* (Boehm et al. 2012). This series, developed for geography, social studies, and Earth/environmental science teachers, is available at [www.geoteach.org](http://www.geoteach.org), and is capable of supplementing the existing Alliance Network. The main goals of *Stars* are to disseminate high-quality PD on a broader scale, create online learning communities, and greatly enhance and develop teacher leadership skills among workshop participants. Currently, four programs are available for free online ([www.geoteach.org](http://www.geoteach.org)) and include *Globalization*, *Watershed Management*, *Agriculture and Water*, and *Tidewaters*. The project website is updated continuously as new programs become available, making the use of an online dissemination system more efficient and easily accessible (Benson 2004). Each program consists of six component parts; the first three include separate videos that can all be downloaded and viewed at the user's convenience (Table 1.1) (Boehm et al. 2012). At the heart of each program is the classroom demonstration in which a *Stars* teacher teaches the program lessons in an actual classroom setting; thereby offering the viewer a firsthand look at how these lessons will proceed in the classroom (Figure 1.1). In this instance, viewers also get to see teacher-to-student interaction, as well as student-to-student interaction (Figure 1.2). The second component, the pedagogic enhancement, involves a senior mentor teacher who provides commentary about the effectiveness of the strategies that the *Stars* teacher uses during the lessons in the classroom. While these programs are specifically for teachers, the content enhancement component consists of a video case-study, ranging in length from 15 to 45 minutes between each of the four programs, that focuses on a specific topic related to each program. For example, the content enhancement of the *Globalization* program features the Bridgestone-Firestone Tire



Company and discusses the many ways in which globalization has impacted the company. This video would be ideal to show students as a way to connect and summarize the geographic concepts learned throughout the unit. All lesson plans and instructional materials for each program are available for download at the project website, [www.geoteach.org](http://www.geoteach.org) (Figure 1.3). Also available is a Facilitator’s Guide providing step-by-step instructions on how to implement or participate in a *Stars* workshop in either a face-to-face or an online setting. Finally, the online forum provides a platform for continued interaction and collaboration among teachers. Currently, the website requires no login or password to access all program materials. The web forum, however, does require administrative permission, and participant registration, to access.

<b>Table 1.1 Component parts of <i>Geography: Teaching with the Stars</i> (Source: adapted from Boehm et al. 2012, 44).</b>	
<b>Component Parts</b>	<b>Description</b>
<b>Classroom Demonstration</b>	<i>Stars</i> teacher’s classroom demonstration of best practice strategies and lesson plans.
<b>Pedagogic Enhancement</b>	Mentor teacher’s comments on the best practice strategies used by the <i>Stars</i> teacher.
<b>Content Enhancement</b>	Case Study focusing on main emphasis of the program.
<b>Instructional Materials</b>	Lesson plans used by <i>Stars</i> teacher in each program.
<b>Facilitator’s Guide</b>	Instructions on how to implement a professional development workshop in a face-to-face or an online setting.
<b>Web-based Interactive Forum</b> <i>www.geoteach.org</i>	Online platform for teachers to share ideas, questions, and promising resources.



**Figure 1.1** *Agriculture and Water* program, *Stars* teacher, Nicole Vickerman, teaches a lesson on comparing agricultural practices in the United States and Africa.



**Figure 1.2** *Tidewaters* program, *Stars* teacher, J.R. Jones, and students analyze oysters as a way to measure and examine the health of estuaries.



**Figure 1.3 Homepage of *Geography: Teaching with the Stars* project website, [www.geoteach.org](http://www.geoteach.org).**

Since its inception, *Stars* has been presented at over 40 conferences and workshops of local, regional, state, national, and international scope to audiences ranging from 15 to 50+ participants including but not limited to pre-service teachers, in-service teachers, pre-service professionals, state Alliance Coordinators, and professional geographers and geography educators. These presentations, however, have largely been in a face-to-face format and have consisted of showing selected *Stars* video component parts while also stressing the availability of these programs on the project website. A preliminary analysis of visits to the project website shows that there has been an increase in the number of visits to the site following these workshops, as well as continued visits in the interim periods. The number of visits has increased yearly and the site has received almost 8,000 visits from locations all over the world. Online PD allows teachers the flexibility to access PD that is relevant to them at a convenient time.

### A Hybrid Approach

Over the past year and a half, a main goal for the *Stars* project developers and program planners, including this researcher, has been the transition from face-to-face workshops utilizing *Stars* to electronic, online, and other hybrid presentations with the objective of reaching—on a more widespread basis—thousands of teachers who are unable to attend traditional face-to-face workshops and institutes, or who are seeking other avenues to acquire PD (Boehm et al. 2012; Brysch and Boehm 2013). Stemming from this research and explained in detail in the Analysis Chapter, however, is the perception that teachers prefer a hybrid approach to PD. Combining face-to-face and online methods, and extending the interactive and collaborative nature of a face-to-face PD session to an online platform is beneficial and offers greater potential to meet a wider array of teachers’ specific PD needs, thereby increasing dissemination impact potential overall.

### The Learning Cluster Method (LCM)

To that end, the Learning Cluster Method (LCM) has been developed as a means to expand the capabilities of the online approach to *Stars* into a hybrid means of accessing PD. The goal of LCM workshops is twofold; 1) to maximize implementation potential because participating teachers commit to train other teachers back in their home districts after the workshop; and 2) to use the implementation approach of *Stars* and the LCM as a way for teachers to encourage the formation of an online learning community, while at the same time enhancing and developing teacher leadership skills among participants. In a LCM workshop, teachers are brought to a central location for an initial face-to-face workshop using any of the available *Stars* programs. Workshop facilitators

give an overview of *Stars* providing participants with the opportunity to become comfortable with accessing the website, downloading the programs, and participating in the online forum. Teachers then collaborate and work in groups to develop specific implementation plans for how they are going to share *Stars* resources with other teachers, either back in their home districts or at another professional conference. Following the initial face-to-face meeting, the workshop is extended with the use of the online platform. Here, teachers are able to share what worked in their implementation plans, as well as what worked when they used the lessons themselves in the classroom. The potential exists to build an online learning community through this continued interaction and collaboration. For too long, face-to-face workshops have often provided a “one-shot” opportunity to interact with teachers. Following this type of workshop, teachers often leave the workshop feeling overloaded with information, and many lose touch with the facilitators and other teachers. By having an opportunity to expand on what began in the initial LCM face-to-face workshop and extend interaction and collaboration into the use of the online forum, teachers are able to follow up with workshop facilitators and other teacher participants.

### Teacher Leaders

Being able to develop and implement their own PD workshop using *Stars* is similar to the longstanding and highly successful approach used by the Binko method mentioned earlier. Teachers are placed into a leadership position that extends beyond their classroom teaching responsibilities. Overall, teachers design and use *Stars* as an avenue to enhance and develop their teacher leadership skills, while also disseminating

this online professional development (OPD) program on a much more widespread basis. Therefore, teachers become active agents in the PD process.

### Significance of this Research

This longitudinal study extends across three and a half years and measures teacher receptivity to three different types of professional development delivery systems in geography (face-to-face, online, hybrid). Following an incremental learning process, each experimental situation builds on the results of prior workshops. The *Stars* programs are designed to be self-sustainable, requiring teachers to access a website and essentially self-guide themselves using the component parts of the series. The hybrid approach was designed to allow teachers to use OPD in combination with traditional methods of teacher training (face-to-face in-service workshops and summer institutes). The LCM was developed to broaden the distribution of OPD in order to reach a broader spectrum and larger numbers of teachers, encourage the formation of online learning communities, and develop and enhance teacher leadership skills among participants.

In order to meet these goals and provide the opportunity for teachers to receive the highest quality training, each of these approaches was analyzed to determine teacher satisfaction, and provide a formative evaluation of an increasingly sophisticated PD system in geography.

### *A Road Map for 21<sup>st</sup> Century Geography Education*

The research design used in this study is consistent with the plan and structure outlined in the National Science Foundation funded *Road Map for 21<sup>st</sup> Century Geography Education*, Geography Education Research Committee's report (Bednarz, Heffron, and Huynh 2013). Research question "4" of the Road Map project addresses

both pre-service and in-service professional development. “What is necessary to support the effective and broad implementation of the development of geographic knowledge, skills, and practice?” provides a broad framework under which this research proceeds, with a specific request for analysis of “how to support teacher preparation and professional development” (Bednarz, Heffron, and Huynh 2013, 46). This study is heavily weighted toward in-service teacher training because of the difficulty of penetrating the pre-service teacher preparation system, which is often organized in Colleges of Education, and taught by social studies or history education professors. In-service training, on the other hand, is often carried out by professors or teachers of geography. These individuals are selected specifically to upgrade the abilities of those teachers who have geography as a classroom assignment, and who would like to upgrade their knowledge and pedagogic abilities. An example of these types of teachers would be those who are involved in the Alliance Network.

The Road Map Geography Education Research Committee points out that, “the most typical form of professional development, the short workshop, is the least effective at improving teaching” (Pianta 2011, cited in Bednarz, Heffron, and Huynh 2013, 46). At the same time, “alternative programs that are geography-focused within teacher preparation are uncommon, and promoting, sustaining, and paying for new programs is challenging (Sinton and Alvarez, 2010). Therefore, “video recordings can be used to make professional development available to a larger audience” and have been observed to be a possible solution to the quality and quantity problems in PD (de Mesquita et al. 2009; Pianta 2011; Boehm et al. 2012; Bednarz, Heffron, and Huynh 2013; 47).

The experiments and the analysis of teachers' satisfaction with various PD approaches found in this research not only provide measures for a new way to deliver PD to larger numbers of teachers, but they also fit this study nicely under the guidance of the Road Map Research Committee's recommendations. This dissertation is a major step forward, but it also provides a model and effective platform for future research.



## CHAPTER II

### Nature and Scope

Because online professional development (OPD) may be more cost effective (Jung 2005; Herman and Banister 2007; Dede et al. 2009; Sindelar et al. 2012), it does not necessarily mean it is superior to face-to-face PD (Cole 2004). Therefore, an evaluation of *Geography: Teaching with the Stars (Stars)* is necessary in order to determine its value and effectiveness. Kirkpatrick's (2006) program evaluation model outlines four outcomes necessary for determining program effectiveness: teacher reaction, teacher learning, changes in teacher behavior, and the impact on student learning. A significant focus of this research is to determine teacher reaction and satisfaction with *Stars*, which is level one in Kirkpatrick's (2006) program evaluation model.

The purpose of this longitudinal, mixed methods study (Creswell 2009) is to analyze teachers' acceptance of three different models of OPD following an incremental learning process. In particular, this study aims to determine how *Stars* compares to face-to-face PD, as well as investigate new ways to deliver PD to teachers of geography, social studies, and Earth/environmental science. The goal is to improve efficiency and reach large numbers of an underserved population, who have, up until recently, had access only to university pre-service teacher training programs, and the traditional face-to-face in-service workshops and institutes most commonly offered by the NGS Alliance Network.

Beginning in 2010, workshop experiments were planned and executed to determine how well teachers of geography, social studies, and Earth/environmental

science accept OPD approaches as an alternative to traditional face-to-face methods. A comparative study, carried out in 2010 with 18 teachers, utilized the *Stars* teacher of the *Globalization* program to facilitate the teaching of *Stars* in a face-to-face workshop while project facilitators implemented *Stars* in an OPD approach. Implementation strategies and program materials were kept the same; the only difference between the two workshops was the approach to PD. The teachers were split up into two groups and switched so that each group experienced each method of PD. A survey questionnaire was administered to determine teacher perceptions of the PD received and which method teachers preferred, the teaching of *Stars* in a face-to-face workshop or the online approach.

In 2011, two workshops were conducted, one in Texas, and the other in Iowa. Workshop facilitators, including the researcher, administered an overview of *Stars*. Following the presentation, workshop participants were asked to peruse the project website, and develop their own implementation plans. Focus groups were held in both locations to determine teacher attitudes towards *Stars*. Responses from the focus groups and developed teacher implementation plans led the researcher to conclude that most teachers prefer a hybrid approach to PD workshops that combine both face-to-face and OPD methods.

The results of these early studies led to the creation of the LCM, the teaching of *Stars* in a hybrid approach while also providing the opportunity to enhance and develop teacher leadership skills, by the author of this dissertation and Dr. Richard G. Boehm, as a sophisticated answer to the various problems associated with teacher acceptance of online teacher training programs. Piloted in early 2013 in a workshop held in Texas,

teachers initially met in a face-to-face workshop environment, were given an overview of *Stars*, and accessed all program materials and perused the project website, taking advantage of the online forum in particular. Teachers were charged with developing and implementing their own workshops in their home school districts or another capacity, such as presenting at a professional conference. The workshop was then extended through the use of the online platform provided by the *Stars* website forum. Responses to a survey questionnaire administered immediately after the workshop, as well as a follow-up survey sent a few months after the workshop, indicate teachers accept the use of *Stars* and the LCM. Many teachers also affirmed the LCM's power to provide an opportunity for teachers to implement their own PD workshops and develop and enhance their teacher leadership skills. In this instance, teacher leaders pass their skills on to other teachers. This initial workshop led the researcher to reevaluate major project goals and refine the survey questionnaires for a second LCM workshop held during the summer of 2013. Stemming from this workshop, again, was acceptance of the LCM and use of *Stars*' implementation strategies as a way to develop and enhance teacher leadership skills. Analysis of the LCM is preliminary and ongoing, however, early results seem to indicate strong teacher acceptance and a resultant uptick in use of online methods as demonstrated by an analysis of website traffic.

Overall, teacher perceptions and attitudes toward OPD were explored using focus groups, survey questionnaires, and interviews with teachers who have participated in *Stars* workshops and have been involved in the development and implementation of the LCM. While largely qualitative, converging the collected quantitative and qualitative data leads to a better understanding of the research problem (Creswell 2009). The results of

this study (a first step in a program evaluation and analysis of *Stars*, the potential for dissemination using the LCM, as well as developing and enhancing teacher leadership skills) will be used to increase the efficacy of the pedagogic messages and the delivery and receptivity of this modern PD approach. This evaluation will also help to inform production of future *Stars* programs and the continued development of effective dissemination and implementation methods, particularly the LCM. Preliminary data analysis of website traffic suggests that when the LCM is operationalized, teacher acceptance and involvement increases (see the Analysis Chapter for a more complete breakdown of website traffic).

This study examines K-12 geography, social studies, and Earth/environmental science teachers' preferences and satisfaction with alternative methods of PD. In particular, results will determine if *Stars* and the LCM hybrid dissemination approach meet the objectives of large scale dissemination and whether or not this technique provides an effective outlet for building online learning communities and developing and enhancing teacher leadership skills. This study is a continued attempt to evaluate *Stars* as it relates to preferences in teacher satisfaction with alternative methods of PD, as well as adding to the body of knowledge regarding teacher access to PD and the differences in perceptions between traditional and online learning when applied to PD. The study, however, does not focus on changes in teacher knowledge and behavior, practice in the classroom, or effects on student learning. An extension of the study would be to complete the next steps in Kirkpatrick's (2006) program evaluation model; measuring changes in teacher knowledge, changes in teacher behavior, and improvements in student learning.

## Definition of Terms

- Agency for Instructional Technology (AIT): A leader in educational technology since 1962, AIT is a non-profit agency whose mission is to be the premier provider of services and products to enhance student learning. AIT's learning resources are used on six continents and reach nearly 34 million students in North America each year. Over the years, AIT products have received many national and international honors, including Emmy and Peabody awards.

*(<http://www.ait.net/>)*

- Asynchronous: Time passes between the presentation of instructional materials and participant responses, allowing for anytime/anywhere communication and collaboration that occurs over time (Means et al. 2013, 8).
- Distance education: Learning that occurs where instructor and participant are not in the same location at the same time (Ko and Rossen 2001).
- Education Service Center (ESC): The Texas Education Agency (TEA) maintains 20 distinct regional Education Service Centers. These service centers often designate subject area specialists whose responsibilities include overseeing PD activities among teachers and providers in their region. ESCs provide an opportunity to target significant regions in Texas where the Learning Cluster Method (for further explanation, see Research Question 3) could be applied and expanded upon. (*[http://www.tea.state.tx.us/regional\\_services/esc/](http://www.tea.state.tx.us/regional_services/esc/)*)
- Face-to-face professional development: Participants meet at a central, physical location in order to participate in conferences or workshops that may last

anywhere from one to a few hours (Hoban and Erickson 2004; Lydon and King 2009), multiple days (Grosvenor 1989), weeks, or months (Berger, Eylon, and Bagno 2008).

- Geographic Alliance of Iowa (GAI): Part of the National Geographic Society's Network of Alliances for Geographic Education. Consists of a K-12-University partnership housed at the University of Northern Iowa, Cedar Falls, Iowa. Tasked with disseminating geography content, knowledge, and skills to K-12 schools and beyond, the GAI has hosted hundreds of summer institutes and workshops throughout the state of Iowa over the past 20 years, impacting over thousands of teachers and students. ([www.uni.edu/gai/](http://www.uni.edu/gai/))
- Gilbert M. Grosvenor Center for Geographic Education (GCGE): The GCGE was established in 1998 with a mission to encourage research and development, as well as provide leadership in the movement to increase the quality and quantity of geography education. (<http://www.geo.txstate.edu/grosvenor/>)
- Hybrid or blended professional development: Elements from both face-to-face and online workshops are utilized in a variety of different formats (Owston, Wideman, Murphy, and Lupshenyuk 2008); classroom-based activities combined with an online component (Bicen, Ozdamli, and Uzunboylu 2012).
- Network of Alliances for Geographic Education (Alliance Network): The Alliance Network is a group of educators united to support geographic literacy. "Partnerships between university faculty and K-12 educators, these state-based organizations connect educators, provide world-class professional development,

and promote educational innovation at the state, district, and local levels.”

([www.NatGeoEd.org/alliances](http://www.NatGeoEd.org/alliances))

- Online learning community: Ability to extend interaction and collaboration among participants gained during a particular learning session (e.g., face-to-face PD workshop) online so that the experience is long-term (Laferriere et al. 2007; Owston, Sinclair, and Wideman 2008).
- Online professional development: “Instructional material delivered and transmitted via personal computers to learners at locations remote from that of the instructor, including postings, discussion board, online materials, synchronous or asynchronous chat (communication), and other methods allowing self-paced, interactive, and individualized learning” (Donavant 2009, 233).
- Professional development: “The process by which (...) teachers review, renew and extend their commitment as change agents” (Day and Sachs 2004, 13 cited in Mitchell 2013).
- Synchronous: Instruction occurs in a “real time” setting, whether a physical or virtual location (Means et al. 2013, 8).
- Teacher Consultant (TC): A senior, experienced teacher who has been involved in several Alliance Network PD activities.
- Teacher leadership: “Teacher leadership can be manifested in modeling methods of teaching, serving in an advisor capacity to other teachers, coaching, mentoring beginning teachers, studying aspects of classroom life, jointly developing curriculum, structuring problem identification and resolution, strengthening

school-home relationships, or developing instructional materials” (Harvey 1988, 30).

- Texas Alliance for Geographic Education (TAGE): Part of the National Geographic Society’s Network of Alliances for Geographic Education. Consists of a K-12-University partnership housed at Texas State University, San Marcos, Texas. Tasked with disseminating geography content, knowledge, and skills to K-12 schools and beyond, TAGE has hosted hundreds of summer institutes and workshops throughout the state of Texas over the past 25 years, impacting over thousands of teachers and students. (<http://www.geo.txstate.edu/tage/>)
- Workshop Facilitator: In charge of a workshop professional development session. Main goal is to act as a guide throughout the session and provide continuing support to participants as “they construct new knowledge and practices” (Borko 2004, 4).

#### Assumptions

The assumptions for this study include:

- Online and hybrid methods of professional development in geography are another avenue to offer high-quality PD resources to geography, social studies, and Earth/environmental science teachers.
- All survey instruments developed were reliable and accurately measured participant reaction and satisfaction with OPD and the LCM.
- Participants answered honestly to survey questionnaires, focus groups, and interview questions.



### Limitations

The chief limitation to this three and a half year research study is the relatively small sample of geography, social studies, and Earth/environmental science teachers involved in the experimental workshops located in Texas and Iowa. Therefore, the results of the study may not be generalizable to other teachers' perceptions of OPD. Future research will include larger numbers of participants spread across a wider geographic area.

## CHAPTER III

### Research Questions

This study will investigate new ways to deliver PD to teachers of geography, social studies, and Earth/environmental science, in order to improve efficiency and to reach large numbers of an underserved population, who, up until recently, have had access primarily to university pre-service teacher training programs, and the traditional face-to-face in-service workshops and institutes offered by the National Geographic Society (NGS) sponsored Alliance Network.

To examine this research problem, three experimental situations were organized consisting of five workshops in total, following an incremental learning process which resulted in each experiment being somewhat more sophisticated, that examined teacher PD programs that offer an alternative to the traditional face-to-face class, workshop, or summer institute. For each of these experimental situations, related research questions are addressed directly in the Analysis Chapter of this dissertation. These research questions have been drawn from a detailed literature review and are based on the experience and relevant background of the researcher, who has been a serious observer of the nature of PD in geography, social studies, and Earth/environmental science for the past three and a half years.

The questions that will guide this study include:

1. To what extent are teachers willing to accept an online professional development approach in lieu of the traditional face-to-face method, which has dominated pedagogy and methods classes, workshops, and summer institutes for the past several decades?

2. To what extent are teachers willing to adapt to a hybrid approach to professional development that combines online with face-to-face training?
3. To what extent are teachers willing to accept and operationalize a new method of professional development called the Learning Cluster Method (LCM), as an extension of online and hybrid training that will be able to reach large numbers of teachers?
4. How effective is teacher use of the Learning Cluster Method as a means of developing and enhancing teacher leadership skills?

## CHAPTER IV

### Literature Review

Following extensive educational reform in the 1980s and 1990s, teacher professional development (PD) became a critical issue in the K-12 education system (Little 1993; NCTAF 1996) and continues today (Borko 2004; Penuel et al. 2007; Lieberman and Mace 2008; Fishman et al. 2013) especially with respect to matters of policy with the passage of the No Child Left Behind Act and discussions regarding the reauthorization of the Elementary and Secondary Education Act (Darling-Hammond 2010; Meister 2010). Couple that with federal legislation mandating that all teachers are highly qualified (USDOE 2009), a pressing need exists for high-quality PD for teachers (Borko 2004; Baran and Cagiltay 2006; Dede et al. 2009; Boehm et al. 2012). Teacher professional learning and access to PD that is effective and relevant to teacher needs, also remain essential to the success of an educational system (Borko 2004; Baran and Cagiltay 2006; Desimone 2009; Foster, Toma, and Troske 2013; Lauer et al. 2013).

Previously, PD focused on “text-book centered or recitation-style teaching” and new mandates continue to call for teachers to transition to teaching styles that “[demand] a greater facility ... for integrating subject content and for organizing students’ opportunities to learn” (Little 1993, 130). Since then, teacher PD has moved from the traditional lecture style focus (behaviorist) to a more student-centered, constructivist learning approach (Sparks and Hirsh 1997; Banegas et al. 2013; Diaconu et al. 2013).

Professional development allows teachers to “remain current with research, practice, and educational trends and issues” regarding knowledge of content and pedagogy (Donlevy 2005; Hahs-Vaughn, Zygoris-Coe, and Fiedler 2007, 6; Lawless

and Pellegrino 2007). To remain effective, teachers need “learning experiences that use professional learning communities, center on the study of practice, and incorporate the use of technology” (Lieberman and Mace 2010, 77). The result of effective and high-quality PD is a greater impact on student learning outcomes and achievement (Darling-Hammond 2010; Antoniou and Kyriakides 2013).

The mode of transmission of PD has also evolved from the domination of face-to-face institutes to the availability of PD offered online and in hybrid or blended formats (Borko, Whitcomb, and Liston 2009; Davis 2011; Means et al. 2013). These alternative approaches to the dissemination of teacher PD have ensured that teachers are able to receive and have access to PD on a much more widespread basis because of the greater opportunity for accessibility these types of programs offer (Russell et al. 2009). By taking advantage of online or hybrid PD opportunities, “teachers have more flexibility and greater choice as to when they participate and engage in learning” (Russell et al. 2009, 71). It is important, however, to be cognizant of different issues, such as computer self-efficacy, that may arise when transitioning to the use of PD offered in alternative mediums (Hauser, Paul, and Bradley 2012). Therefore, developing learning experiences that are meaningful and of high value are imperative for successful program implementation (McDonald 2002).

First, this literature review addresses face-to-face, online, and hybrid or blended PD, including the comparison of the advantages and disadvantages of each method and is coupled with the exploration of the effectiveness of these approaches with respect to teacher attitudes and satisfaction. Second, the potential for online or hybrid PD to generate widespread use, as well as the development of online learning communities

because of continued interaction and collaboration is explored. Third, implementation strategies tied to the use of online professional development (OPD) and how it is linked to the development and enhancement of teacher leadership skills is reviewed. These ideas and strategies for further studies related to OPD are offered in an effort to continue the momentum in this fast growing area of research.

### Face-to-Face Professional Development

Face-to-face institutes and workshops in geography and social studies have largely dominated teacher PD (Boehm et al. 2012), have been deemed effective (Cole and Ormrod 1995; Englert and Barley 2003; Kenreich 2004), and continue to play a vital role in the PD of teachers (Hoban and Erickson 2004; Davis 2011). The structure of face-to-face PD involves teachers meeting at a central physical location in order to participate in conferences or workshops that may last anywhere from one to a few hours (Hoban and Erickson 2004; Lydon and King 2009), multiple days (Grosvenor 1989), weeks, or months (Berger, Eylon, and Bagno 2008). Interaction takes place between participants, as well as the facilitator or presenters and participants (Gallagher 2007). Representing a common practice among PD providers, many opportunities for these “one-shot” style workshops exist (Sparks and Hirsh 1997; Ball and Cohen 1999; Owston, Sinclair, and Wideman 2008; Lauer et al. 2013). Face-to-face meetings, however, are typically the culmination of the workshop experience, and in many instances have been deemed inadequate to fulfill teacher needs and effect subsequent change in teacher practice or behavior (Garet et al. 2001; Guskey 2002; Borko 2004; Hill 2007; McConnell et al. 2013). Other studies, nonetheless, have found no relationship between workshop length, particularly low amounts of contact time, and changes in teacher practice following

implementation of those strategies and related measures of differences in student learning (Kennedy 1999; Desimone et al. 2002; Lauer et al. 2013).

### Advantages

Many teachers prefer participating in traditional face-to-face PD for a multitude of reasons. The most cited advantage continues to be the significance of the “interaction between teacher and student” and “building a sense of community” (Stern 2004, 1998) in traditional PD formats (Berger, Eylon, and Bagno 2008; Gilchrist et al. 2012).

Additionally, proponents of face-to-face PD often argue “there is no substitute for ‘real’ classroom interaction” (Pena 2001, 76), and social interaction and socialization continue to play a key role in determining which type of PD method participants decide to select (Heinze and Procter 2006; Senn 2008). Participants in face-to-face PD sometimes express higher levels of motivation (Mentzer, Cryan, and Teclehaimanot 2007) and interviews with pre-service teachers indicate that face-to-face courses better prepare them for the realities of classroom teaching (Peterson and Bond 2004). Donavant (2009) found that many continue to prefer face-to-face instruction. Responses given for their reasoning include loss of interaction with the facilitator, a preference for hands-on training, and a preference for using actual work time to acquire PD rather than their own personal time.

Participant learning styles, however, impact attitudes toward different PD approaches (Chen and Chiou 2012). Some participants perform better in face-to-face learning environments (Stern 2004) and often exhibit a “preference for social and applied learning styles” (Diaz and Cartnal 1999, 132; Ramage 2002, 3), while independent learners often seek out online classes and prefer “conceptual learning styles” (Ramage 2002, 3).

## Disadvantages

Identified widely throughout the literature, several disadvantages have been associated with the use of traditional avenues of PD and contribute to the decision-making process of teachers when selecting a particular approach to PD. Traditional face-to-face workshops have long been heralded as “one-shot” workshops or events and fail to adequately impact change in teacher practice and pedagogy (Guskey 2002; Kesson and Henderson 2010; Wei, Andree, and Darling-Hammond 2009), and are described as fragmented (Borko 2004) and lacking in follow-up strategies and support (Barnett 2002). Nonetheless, the effective use of learning objectives, alignment to teacher needs, and active and collaborative learning during short-term PD sessions have proven to have a positive impact on teachers (Lauer et al. 2013). Frequently, the common “one-shot,” short-term approach often featuring an outside lecturer or facilitator “offer[s] very limited growth opportunities for teachers” (Owston, Sinclair, and Wideman 2008, 1035). These dominant behaviorist (stimulus-response) approaches to PD often undermine the role of the teacher participants and are seen as “top-down decision making” because many facilitators lack knowledge regarding authentic school experiences and the realities of classroom dynamics (Gabriel 2004; Baran and Calgitay 2006, 111). Workshop sessions that are often dominated by an “expert” facilitator or presenter, have garnered unfavorable views from teacher participants (Patton, Parker, and Neutzling 2012).

Geographic and locational barriers have long been regarded as an impediment to the success and long-term impact of face-to-face PD (Boehm et al. 2012). Royster (1994) identifies barriers rural teachers often face regarding access to traditional PD, inadequate facilities, “insufficient staff development, and distance to training sites” (Cady and



Rearden 2009, 282). Rural teachers are often compounded by feelings of remoteness and limited access to resources (Cady and Rearden 2009; Sawchuk 2009; White and Kline 2012). Participants frequently feel isolated from actual classroom practices (Cady and Rearden 2009). Location barriers are often associated with access to PD and the much greater cost associated with providing face-to-face training opportunities (Bartley and Golek 2004; Jung 2005; Herman and Banister 2007; Sindelar et al. 2012).

In terms of impact, face-to-face workshops only reach a fraction of the number of teachers who are in the teaching profession and who could benefit from PD (de Mesquita, Dean, and Young 2010; Boehm et al. 2012). Teacher attrition also plays a role in the limiting nature of face-to-face PD; reports have found that “one out of five beginning teachers leaves the profession after the first year” (Gonzales, Brown, and Slate 2008, 1), and more than 20 percent of “teachers leave within their first three years of teaching” (Dove 2004, 8). This high attrition rate, reported as 50 percent among teachers within the first five years of their career (National Commission on Teaching and America’s Future 2003), has been largely associated with a lack of effective, continued mentoring and support which has often been provided by traditional forms of PD (Dede et al. 2009).

### Online Professional Development

Situated in distance education, which can be defined as learning that occurs where instructor and participant are not in the same location at the same time (Ko and Rossen 2001), advancements in technology have provided many opportunities for the transmission of online professional development (OPD) programs (Borko, Whitcomb, and Liston 2009). Online PD can be described as:

“Instructional material delivered and transmitted via ... computers to learners at locations remote from that of the

instructor, including postings, discussion board, online materials, synchronous or asynchronous chat (communication), and other methods allowing self-paced, interactive, and individualized learning” (Donavant 2009, 233).

The use of OPD has increased widely in recent years leaving teachers with a seemingly unlimited number of options (Brown and Green 2003; Sherin and Van Es 2005; Lebec and Luft 2007; Signer 2008; Russell et al. 2009; Sherin and Van Es 2009; Whitcomb, Borko, and Liston 2009) that are delivered from a multitude of different sources (Borko, Whitcomb, and Liston 2009; Lin 2009). For example, complete video-based teacher PD programs have become available, and many are accessible via the Internet (Sherin and van Es 2005; Stockero 2008; Kao, Wu, and Tsai 2011) and available for download allowing access without an Internet connection (Boehm et al. 2012; Frazier and Boehm 2012). Materials such as student work, lesson plans, and other instructional resources often accompany many of the available OPD programs (Santagata 2009; Boehm et al. 2012). Compounded by a need for PD that meets teachers’ requirements and fits their busy schedules, “attributes of technology offer unique learning opportunities that would not be possible without it” (Borko, Whitcomb, and Liston 2009, 4).

### Advantages

One particular value of OPD is the flexibility of anytime, anywhere access (Cady and Rearden 2009; de Mesquita et al. 2010). OPD often provides more options and convenience of use because of the “self-paced nature” (Donavant 2009). According to Sherman, Byers, and Rapp (2008), many participants are intrigued with the “on-demand nature” because they are able to “access [the online material] they want, when they want” (28-29). Learning is no longer limited to a set period of time, and OPD offers availability

in a 24/7 format (Schrum 2000; Borko, Whitcomb, and Liston 2009). The opportunity to participate in courses or modules that are readily available and in which content and materials can be accessed repeatedly is an additional benefit of OPD. According to Thomas et al. 2012, “information may be controlled by the learner, providing options to listen to all or part of it, when to listen, and for what purposes” (447).

The ability to reach underserved populations in more remote areas and teachers who may not otherwise have access to PD (Annetta and Dickerson 2006; Fenton and Watkins 2007; Borko, Whitcomb, and Liston 2009; Cady and Rearden 2009; de Mesquita, Dean, and Young 2010; Boehm et al. 2012), is an advantage of video-based or OPD. Here, flexibility plays a key role; participants are no longer constrained by location (Cady and Rearden 2009; de Mesquita et al. 2009). In fact, while distance education was once seen as a barrier between instructor and student, online interaction, whether asynchronous or synchronous, has bridged the gap between locational distance barriers (Guldberg 2008). As a way to “scale-up” PD, program developers are “increasingly turning to ... innovative technologies as a way to reach large numbers of individuals” (Borko, Whitcomb, and Liston 2009, 5), which draw on “resources often not available locally” (Dede et al. 2009). Available through many different avenues, including Skype, videos, blogs, and discussion forums, a similar goal among these various delivery methods is to use “technology to support collaborative learning among participants separated by geographic or temporal barriers” (McConnell et al. 2013, 269). Maximizing potential reach to a greater number of participants is a critical goal and advantage of OPD (Beattie et al. 2002; Harlen 2004). In addition to this, reaching more participants at lower costs (Goldman 2005; Jung 2005) is crucial; this is seen as a benefit to both program

developers and participants (Borko, Whitcomb, and Liston 2009; Boehm et al. 2012; Brysch and Boehm 2013).

Much has been written regarding participant involvement and interaction during the use of OPD. Opportunities for participants who hesitate to speak up in a traditional classroom may arise in order to help them find their voice. This has been seen as a benefit to OPD (Stern 2004, Sawchuk 2009). In other words, OPD “may have the potential to transform the way in which learners understand the course material and provide a social component often missed in the traditional classroom—the willingness of and the necessity for shy or introverted students to participate in discussion” (Stern 2004, 198). Sawchuk (2009) noted that teachers found it easier to express themselves in an OPD environment. A reason for this is that participants have more time in an online setting to reflect on what comments they want to make regarding the content of the material (Stern 2004; Lord and Lomicka 2007; Davis 2013). Online PD can allow for continued discussion and reflection, whether synchronously or asynchronously, after the initial event or workshop on a long-term basis (Sherin and Han 2004; Sherin and van Es 2005; Sherin and van Es 2009). Sawchuk (2009, 2) adds: “The format gives teachers time to go back to their classrooms and schools, attempt a new strategy, and then reconnect with facilitators and peers to discuss what succeeded—and what didn’t.”

Particular attention in this literature review will be paid to the use of video in OPD programs. Video can support teacher learning (Brunvand 2010) and can be used by novice and veteran teachers as a way to help teachers learn what to *do* in the classroom (Sherin and van Es 2005), often connecting theory to practice (Wang and Hartley 2003). Video-based PD often presents “a richer and more detailed teaching situation” (Wang and

Hartley 2003, 113), and video also has the unique power to communicate the complicated nature of human interactions (Nemirovsky and Galvis 2004). By showing videos of teachers in an actual classroom, the possibility of these teachers actually following through with the lesson ideas increases (Moreno and Ortegado-Layne 2008). According to Sung (2009, 1123), one teacher, commenting about the use of video, observed, “it’s so great and you can actually see someone teach because it really is a quality difference between looking at a lesson plan and looking at the art of teaching and implementing that lesson plan ... So, the video is really rich in that respect.” Another teacher noted, “it’s possible for teachers to look at the video and then go right to teaching ... that’s why I think it’s really powerful” (Sung 2009, 1123). Video clubs are an effective way for teachers to view their own teaching or their colleagues’ teaching (Sherin and van Es 2005; Sherin and van Es 2009). The use of video clubs allows the opportunity for teachers to analyze effective strategies and techniques to use in the classroom and what not to use (Kurz, Batarelo, and Middleton 2009). While rare, some OPD programs feature an expert teacher demonstrating lessons in an actual classroom setting (Wang and Hartley 2003; Boehm et al. 2012), as well as expert analysis (Kurz, Batarelo, and Middleton 2009; Boehm et al. 2012); teachers have also shown preference for these programs and often prefer being trained by another teacher or colleague instead of an external trainer (Anderson 2002). Teachers are exposed to many different instances of teacher and student interaction via video or online programs (Barnett 2006; Boehm et al. 2012), allowing them to then focus on certain issues or aspects that may arise in their own classrooms (Wang and Hartley 2003). These video-based PD experiences that depict real teachers and students in authentic settings have the power to promote in-depth analysis

and higher-order thinking skills (Risko, Yount, and McAllister 1992; Smithenry, Prouty, and Capobianco 2013).

### Disadvantages

One disadvantage to OPD continues to involve issues associated with equity and access to technology (Garrison and Kanuka 2004; Gallagher 2007). Although many organizations are well-equipped to provide necessary training and technical support, there often continues to be a lack of infrastructure and support in many areas that may benefit from OPD (Vanderbuilt 2008). And while the use of OPD has increased (Brophy 2004; Russell et al. 2009; Whitcomb, Borko, and Liston 2009), Nemirovsky and Galvis (2004) warn of the problems that may arise when switching from traditionally implementing a face-to-face workshop to an Internet or video-based PD workshop. Generally, the effectiveness of new technology comes into question when compared to existing practices (Smith and Dillon 1999). Differing levels of participants' abilities to navigate sometimes complicated websites where PD is housed is sometimes seen as an issue with online learning formats (DeTure 2004), and often valuable workshop time is spent teaching basic navigation and technical skills (Duncan 2005). In an effort to get a product on the market, developers, sometimes, make programs available without fully testing them first; this leads to instability and unreliability of products (Borko, Whitcomb, and Liston 2009), leading to issues with participants' "self-efficacy, belief, and motivation" regarding the use of web-based training which often hinders adoption (Yuen and Ma 2008; Kao, Wu, and Tsai 2011). More so, using OPD might garner negative feelings or perceptions with participants who are unfamiliar with these different types of technology (Summerville and Johnson 2006). Research on OPD development continues to be a

developing process (Boling 2007; Derry, Wilsman, and Hackbarth 2007; Koc, Peker, and Osmanoglu 2009; Russell et al. 2009; Fishman et al. 2013), and with the advent of these Internet/video-based programs, some concerns have arisen regarding online versus face-to-face instruction (Russell et al. 2009; Reeves and Pedulla 2011). Nevertheless, it is essential that time and resources are spent on effective PD programs (Dymond and Bentz 2006; Wayne et al. 2008). The shift to online learning environments and how adults learn in these environments deserves continued attention.

Lack of social interaction and immediate feedback and support are often regarded as the foremost lost aspects when transitioning from a face-to-face to online workshop (Stern 2004; Lock 2006). While online learning environments may increase participant interaction and collaboration, Sawchuk (2009) warns that the option to participate on your time, and usually alone, does not foster a collaborative environment for teachers.

#### Hybrid Professional Development

In a hybrid or blended approach to teacher PD, elements from both face-to-face and online workshops are utilized in a variety of different formats (Owston, Sinclair, and Wideman 2008). Osguthorpe and Graham (2003, 228) add, “the aim of those blended learning approaches is to find a harmonious balance between online access to knowledge and face-to-face human interaction” (Stacey and Wiesenberg 2007). Magiera (2012, 6) proposes “a differentiated, relevant, and engaging [face-to-face PD workshop] to whet teachers’ curiosities and ignite their passions, then an online platform for them to continue to learn and pursue their new thirst for knowledge.” Many school districts and PD program developers are following up with the potential use of this method (Alexander and Henderson-Rosser 2010; Brysch and Boehm 2013). Other formats for blended PD

include using different formats of technology, mixing pedagogical and constructivist approaches, and blending and assigning specific tasks with instructional technology (Owston, Sinclair, and Wideman 2008). The possibilities are limitless with a blended learning approach (Garrison and Kanuka 2004), but to be effective, blended formats must “complement each other by their best characteristics” (Vaughan and Garrison 2005; Berger, Eylon, and Bagno 2008, 407) in order to provide a sustainable workshop environment. The Learning Cluster Method (LCM), developed for such an approach, combines the interaction and collaboration that occurs in an initial face-to-face workshop and extends learning into an online forum (Brysch and Boehm 2013).

### Advantages

Providing a “best of both worlds” approach has led to the perceived effectiveness of hybrid PD (Derringer 2010; Davis 2011, 7; Gilchrist et al. 2012; Magiera 2012, 6).

Advantages associated with hybrid PD formats include (Gilchrist et al. 2012, 204):

- “asynchronous communication,
- participants can utilize online aspects in their work setting,
- online components allow participants more time for interaction than can be allowed during face-to-face (F2F) sessions,
- increased cost effectiveness, and
- higher teacher/student satisfaction (Berger, Eylon, and Bagno 2008; Donnelley 2010; Owston, Sinclair, and Wideman 2008).”

Other advantages associated with blended or hybrid PD include the potential for improvement in teaching and learning outcomes (Garrison and Kanuka 2004); combining the two approaches provides a “transformative learning experience” (Owston, Wideman, Murphy, and Lupshenyuk 2008, 202). Blended PD allows time for reflection (Motteram 2006), flexibility (Curtis and Swenson 2003; Davis 2011), and has the power to be an effective and meaningful learning experience for participants (Oliver, Herrington, and



Reeves 2006). Blended learning also allows for follow-up of face-to-face workshops, thus eliminating the “one shot” workshop problem (Owston, Sinclair, and Wideman 2008). Similar to OPD, hybrid or blended PD can help to reduce costs associated with travel and face-to-face workshops, often this includes the hiring of substitute teachers (Twigg 2003; Davis 2011). In fact, specific models for blended learning have been developed in order to reduce costs associated with travel (Alonso, Manrique, and Viñes 2009).

### Disadvantages

On the other hand, the same technological barriers associated with OPD, such as access to computers or specific programs, may be associated with hybrid learning (Garrison and Kanuka 2004). Teachers have also reported confusion using some hybrid PD sources, citing “lack of time, familiarity, and difficulty with [the] provided tools” (Gilchrist et al. 2012, 205). As with OPD, the lack of a sense of community is seen as a barrier to participation in hybrid PD (Roscoe 2012). Often times, low and declining participation among participants impedes community building (Roscoe 2012). Roscoe (2012) found that participants rated hybrid or blended courses unfavorably when compared to traditional or online courses.

### Building Online Learning Communities

One main concern associated with OPD or hybrid PD formats is the lack of interaction and communication that face-to-face formats provide (Stern 2004), as well as lack of continued support (Lock 2006). All three formats, however, have the potential for developing online learning communities of practice (Wenger 2000) and extending the PD experience so that it is “long term [and] collaborative” (Hiebert, Gallimore, and Stigler

2002; Berger, Eylon, and Bagno 2008; Owston, Sinclair, and Wideman 2008). More and more face-to-face PD workshops have made a move from being “one-shot” events to developing and encouraging continued communication in online forums or blogs, to name a few outlets (Lock 2006; Laferriere et al. 2007). Therefore, participants can “interact with one another as part of a community” (Guldberg 2008, 36). Rheingold (1993) notes, “these communities are seen as playing a socialization role to the same extent as communities that are geographically located in a physical space and share values and outlook, something that is considered a defining part of a community” (Guldberg 2008, 36). Here, collaborative environments in which participants can interact lays the foundation for creating strong connections whereby new knowledge is created through experience (Kagan 1992; Johnson and Johnson 1994; Slagter van Tryon and Bishop 2009), uniting communication tools and social activities. Barab and Duffy (2000, 9) state that these online learning communities are a “collection of individuals sharing mutually defined practices, beliefs, and understandings over an extended time frame in pursuit of a shared enterprise” (Barab and Duffy 2000, 36). The creation of these communities has also been seen as a bridge between teacher preparation and pre-service teachers’ entrance into the teaching profession (York-Barr and Duke 2004). Developing online learning communities, however, is not without its critics; McConnell (2006, 21) warns that it is often used in “too many education contexts with little understanding of what it might or should, mean” (Holmes 2013, 98). Grossman, Wineburg, and Woolworth (2000, 6) further, “*community* is simply an ‘obligatory appendage to every educational innovation.’”

A strong facilitator or moderator, however, is needed in order for an online community to develop and remain sustainable (Anderson et al. 2001; Park et al. 2013). Issues regarding participation have been linked to an effective facilitator and well thought-out goals, deadlines, and participant responsibilities in a forum (Ng 2012). Further, “inadequate explanation, encouragement, and moderator participation” often lead to lack of “time pressures and lack of motivation” (Mason 2011; Ng 2012, 302). As Guzdial and Turns (2000) found, “simply making a discussion forum available did not mean that it would be effective as a learning platform” (Ng 2012, 302), and Jong (2012) found that participants were not satisfied with the use of online discussion forums as a means to deliver PD. Participants need time to become familiar with the new online platforms and technology (Thomas 2002). And while “interaction among teachers is primary in facilitating teacher change” (Heller et al. 2012; Jong 2012, 126) in practices, ineffectual moderation may lead to low and incomplete involvement among participants (Yang et al. 2007; Ng 2012). In all instances, teachers need learning experiences that meet their needs, and all stakeholders must be involved in the teaching and learning process. Duncan-Howell (2010, 325) furthers, “for professional learning to be sustained and not limited to short programs, the mode of delivery needs to suit teacher conditions and be sympathetic to their specific needs as learners.” Therefore, the collaboration and interaction offered by the use of online discussion forums must meet these challenges as well (Duncan-Howell 2012).

### Teacher Leadership

These online communities have not only provided an atmosphere for continued interaction and collaboration, but they are also beginning to be viewed as providing a

pathway for teachers to view themselves as teacher leaders (Gutierrez and Bryan 2010, 42; Brysch and Boehm 2013). Teachers are not only leaders in their classrooms but also “lead beyond the classroom” and consequently influence colleagues and contribute to a “community of teacher learners” (Katzenmeyer and Moller 2009, 6). According to Harvey (1988, 30), “teacher leadership can be manifested in modeling methods of teaching, serving in an advisor capacity to other teachers, coaching, mentoring beginning teachers, studying aspects of classroom life, jointly developing curriculum, structuring problem identification and resolution, strengthening school-home relationships, or developing instructional materials.” Therefore, potential exists for teachers to develop and serve as teacher leaders through “collaboration, support, and learning, especially for novice teachers” (Gutierrez and Bryan 2010, 44) leading to the inclusion of teachers in decision-making about school improvement (Frost et al. 2000) and influencing the instructional practice of other teachers (Katzenmeyer and Moller 2001; Yost, Vogel, and Liang 2009). Brysch and Boehm (2013) found the Learning Cluster Method (LCM) to be an effective pathway to the enhancement and development of teacher leadership skills through an extension of an initial face-to-face workshop into an online format thereby providing continued interaction and collaboration among teachers. Following a distributed leadership process, work is stressed that is collaborative and a collective responsibility (Frost and Harris 2003). Teacher leadership is something that teachers do; they seek lifelong learning, incorporate facilitation and presentation skills, “engage others in shared vision and meaning” and encourage change, “develop and maintain relationships,” have a sense of integrity, are successful planners and organizers, and maintain a focus on student learning (Angelle and Hart 2011, 143), thereby becoming

active agents (Portnoy 2012, Brysch and Boehm 2013) in the school and community environment at a time when change is occurring in these systems at a profound level (Lieberman and Miller 2005). The development of these online learning communities is an “innovative way to foster collaboration, support, and learning, especially for novice teachers, in order to break the isolationist nature of the [teaching] profession” (Gutierrez and Bryan 2010, 43). According to York-Barr and Duke (2004), the emergence of teacher leadership is best fostered in the context of a learning community” (Gutierrez and Bryan 2010, 44) and often acts as an avenue for motivation and recognition that provides an incentive for the retention and recruitment of teachers (Hirsch 2006). An increased sense of professionalism is generated among teachers, but in order for this to occur, teachers need high expectations, strong models and examples of teacher leadership (Brysch and Boehm 2013), and exposure to a variety of leadership opportunities (Baecher 2012; Portnoy 2012). Effective teacher leadership capacities, through the use of turnaround training (Hansen-Thomas et al. 2013)—in effect, teachers training other teachers—lead to not only improvements in teacher quality but also increase the potential impact on student learning (York-Barr and Duke 2004).

### Summary

Teachers will continue to need access to high-quality PD, regardless of method, whether it is to remain current with pedagogy and content or CPE hour requirements. An explosion of PD offered online and through video has made accessibility in terms of cost and availability of use more relevant than ever. While traditional forms of PD remain effective and vital, OPD and hybrid programs, coupled with innovative dissemination techniques (Boehm et al. 2012; Brysch and Boehm 2013), provide additional routes to

access PD that is high-quality, relevant to teacher needs, and available on a more widespread basis. Teachers and school districts must determine what approach fits their needs best and provide an interactive environment in which teachers can build on previous knowledge and exchange resources and ideas.

This chapter has looked at advantages and disadvantages of different approaches to PD, including face-to-face, online, and hybrid formats. Building online learning communities as a way to empower and develop strong teacher leaders was explored as an extension to these delivery methods. Overall, regardless of delivery and definitions, all PD systems “concern the education of adults and are designed to produce positive change in beliefs, knowledge, skills or behaviors” (Guskey 2002; Lauer et al. 2013, 1). In the subsequent chapter, the methods and research design that were used to answer the research questions presented above, which have been guided by the literature and conceptual framework, will be described.

## CHAPTER V

### Methods

Guided by the literature review, the methods section of this study details the theoretical framework that guided the inquiry to answer the research questions. First, an explanation of this theoretical framework is given. Next, the research design and methods employed during this study are explained in detail, using each research question as a guide.

#### Theoretical Framework

Increasingly, distance education plays a role in the professional learning of teachers and students (Mioduser, Nachmias, and Lahav 2000). Nevertheless, the learning environment needs to be interactive and collaborative in order to be effective (Slagter van Tryon and Bishop 2009). With that being said, research regarding online learning environments has often resulted in the combination of multiple theories of learning, therefore, resulting in a “synthesized theory.” For example, integrating cognitive learning theory, behavioral theory, and social learning theory results in an integrated framework that consists of the most prominent and constructive aspects of each (Johnson and Aragon 2002; Hrastinski 2009). These constructivist learning theories provide insight into how people generate knowledge and make meaning through their experiences (Vygotsky 1978). This study will be guided by Huang’s (2002) framework for adult learners in online environments and is broken up into two major, but complimentary, categories—constructivism and adult learning theory.

## Constructivism

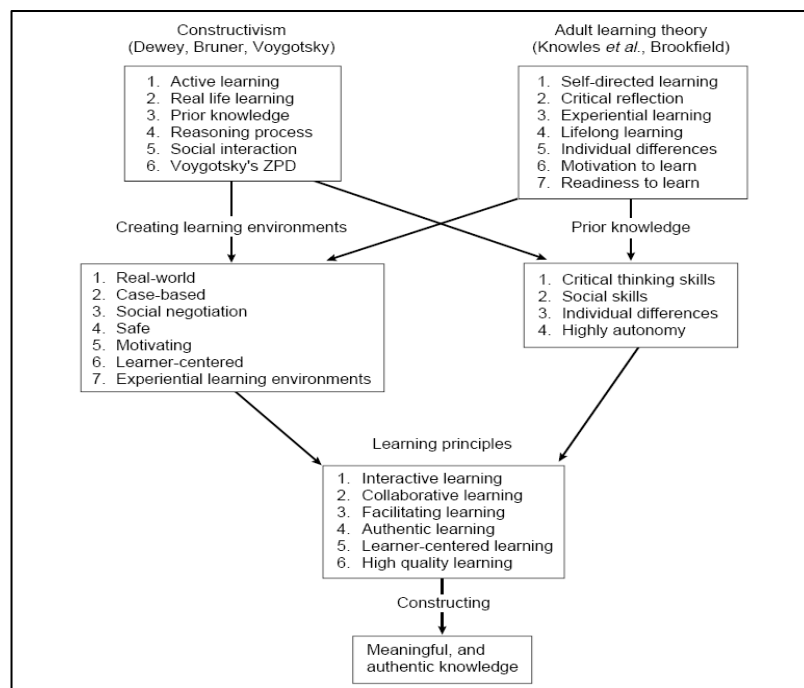
Gaining remarkable recognition during the 1990s (Hrastinski 2009; Bicen, Ozdamli, and Uzunboylu 2012), constructivist learning theories promote “active learning” and view the teacher as a facilitator rather than as a lecturer or having a traditional, behaviorist style of teaching (Jonassen and Rohrer-Murphy 1999; Hrastinski 2009). Learners, using prior knowledge, are able to construct new meaning and knowledge through an active participation process (Huang 2002). Specifically, Dewey (1916) proposed that the main goal of education was to advance the “reasoning process” (Huang 2002). According to Dewey (1916), “knowledge is dynamic and is built around the process of discovery” (Huang 2002). Similarly, Piaget’s (1973) stages of cognitive development enhance learning through experiences which then lead to the maturation of the student (Huang 2002). According to Vygotsky (1978), learning is social, and therefore, students are influenced by teachers and peers (Maddux, Johnson, and Willis 1997; Huang 2002).

## Adult Learning Theory

In response to the realization that adults learn differently and have different needs than K-12 students (pedagogy), Knowles developed an adult learning theory known as Andragogy (Knowles 1980; Knowles, Holton, and Swanson 1998). A set of assumptions about how adults learn, Andragogy consists of six principles: 1) the learner’s need to know—why are they learning the material and what will the benefits be?, 2) the learner’s self-concept—how can a learner move to a more self-directed role in their education?, 3) the role of the learner’s experience—what are the impacts of previous experiences, or, put another way, how can learners use their prior experience?, 4) a learner’s readiness to



learn—how will this new learning experience help the student in the future?, 5) the learner’s orientation to learning—how can what the student will learn apply to real-life situations?, and 6) the learner’s motivation to learn—why is the learner seeking new opportunities (internal and external factors)? (Knowles, Holton, and Swanson 1998). Adult learning can also be described using Brookfield’s (1995) four processes: 1) self-directed learning—adults take control of their learning, 2) critical reflection—how adults reflect on their learning “critically and contextually” (Huang 2002), 3) experiential learning—basing adults’ learning on their experiences, and 4) learning to learn—how learners come to be able to learn in different contexts.



**Figure 5.1 Framework for adult learners in online environments (Source: Huang 2002, 37).**


Learning is a continuous process in which learners need structure and high motivation (Huang 2002), leading to the goal of self-directed learning (Merriam and

Caffarella 1999). Overall, this framework for online education incorporates aspects of many different theories in order to provide a structural outline for how online learners create new and meaningful knowledge (Figure 5.1).

Conceptual Framework

The process of learning, whether through the interaction between facilitator and student or learner controlled, involves a series of steps or pre-set instructions. For this study, participants will gain content knowledge (CK), pedagogic knowledge (PK), and pedagogic content knowledge (PCK) through a traditional or expository learning experience or an online learning experience. Following an active or interactive approach, facilitator-to-participant and teacher-to-teacher interaction will be either asynchronous or synchronous (Table 5.1).

**Table 5.1 Conceptual framework for online and traditional learning (Source: adapted from Means et al. 2010).**

Workshop	Learning Experience	Synchronicity	Details
Face-to-Face	Expository	Synchronous	Workshop taught through a direct instruction, behaviorist format proceeding in a set sequence.
Online	Learner Controlled	Asynchronous or synchronous	Workshop taught through online videos that participants can access on their own schedule, as well as make use of available discussion board and online forum for interaction.
			
*Hybrid	Characteristics of both online and face-to-face—expository and learner controlled	Asynchronous and/or synchronous	Initial face-to-face meeting followed by continued interaction, collaboration, support, and community building in an online forum.

\*Learning Cluster Method dissemination and implementation approach.

## Structure of the Research Design

A mixed methods approach guided this longitudinal study and consists of using both quantitative and qualitative approaches to inquiry (Creswell 2009). Often, employing only one set of research design techniques, whether they be quantitative or qualitative, is no longer sufficient to explain and answer a research problem. Creswell and Plano Clark (2007, 13) observe:

“The complexity of our research problems calls for answers beyond simple numbers in a quantitative sense or words in a qualitative sense. A combination of both forms of data can provide the most complete analysis of problems. Researchers can situate numbers in the contexts and words of participants, and they can frame the words of participants with numbers, trends, and statistical results. Both forms of data are necessary today.”

Converging collected quantitative and qualitative data allows for the “explor[ation of] the topic with participants” (Creswell 2009, 206), and leads the researcher to a more “comprehensive analysis of the research problem” (14). The research design employed for this study transpired through an incremental learning process, occurring longitudinally over a period of three and a half years, with each experiment building on and informing the next, allowing for the development of data collection procedures that were both “pre-determined” and “emerging” (Creswell 2009, 15) (Table 5.2).

Quantitative	Mixed	Qualitative
<ul style="list-style-type: none"> <li>• Pre-determined</li> <li>• Instrument based questions</li> <li>• Close-ended questions</li> <li>• Statistical analysis and interpretation</li> </ul>	<ul style="list-style-type: none"> <li>• Pre-determined and emerging</li> <li>• Open- and closed-ended questions</li> <li>• Multiple forms of data collection techniques</li> </ul>	<ul style="list-style-type: none"> <li>• Emerging</li> <li>• Open-ended questions</li> <li>• Interview, focus groups, observation</li> <li>• Content analysis</li> <li>• Theme identification</li> </ul>

These procedures, however, often emphasized qualitative techniques (Creswell and Plano Clark 2007, 174) through an inductive process of data collection (Merriam 2009).

Five separate professional development (PD) workshops were arranged over a three and a half year period and each one was organized and designed to address and answer one of the research questions of this study. The *Globalization, Agriculture and Water, Watershed Management*, and *Tidewaters* programs of the *Geography: Teaching with the Stars (Stars)* online professional development (OPD) series were used during the implementation workshops and were chosen because of their connection to curriculum taught in 6<sup>th</sup> grade world cultures and 9<sup>th</sup> grade world geography in the state of Texas, as well as Earth and environmental science courses. A large portion of the participants were Teacher Consultants (TCs); that is, mentor teachers who have actively participated in the Network of Alliances for Geographic Education (Alliance Network), state-based geography education advocacy groups of teachers partially supported by the National Geographic Society (NGS). TCs are designated as leaders among their peers in disseminating and extending PD. These workshops were coordinated by the Texas Alliance for Geographic Education (TAGE), the Geographic Alliance of Iowa (GAI), the Gilbert M. Grosvenor Center for Geographic Education (GCGE), and various Educational Service Centers (ESCs) located throughout the state of Texas. An explanation of each of these entities is as follows:

- Texas Alliance for Geographic Education (TAGE): Part of the National Geographic Society's Network of Alliances for Geographic Education. Consists of a K-12-University partnership housed at Texas State University, San Marcos, Texas. Tasked with disseminating geography

content, knowledge, and skills to K-12 schools and beyond, TAGE has hosted hundreds of summer institutes and workshops throughout the state of Texas over the past 25 years, impacting over thousands of teachers and students.

- Geographic Alliance of Iowa (GAI): Part of the National Geographic Society's Network of Alliances for Geographic Education. Consists of a K-12-University partnership housed at the University of Northern Iowa, Cedar Falls, Iowa. Tasked with disseminating geography content, knowledge, and skills to K-12 schools and beyond, the GAI has hosted hundreds of summer institutes and workshops throughout the state of Iowa over the past 20 years, impacting over thousands of teachers and students.
- The Gilbert M. Grosvenor Center for Geographic Education (GCCGE): The GCCGE was established in 1998 with a mission to encourage research and development, as well as provide leadership in the movement to increase the quality and quantity of geographic education.
- Education Service Center (ESC): The Texas Education Agency (TEA) maintains 20 distinct regional Education Service Centers (ESCs). These service centers often designate subject area specialists whose responsibilities include overseeing PD activities among teachers and providers in their region. Therefore, these ESCs provide an opportunity to target significant regions in Texas where the Learning Cluster Method

(LCM, for further explanation see Research Question 3) could be applied and expanded upon.

- Teacher Consultant: A senior, experienced teacher who has been involved in several Alliance PD activities.

This study proceeded using teachers as subjects in a series of workshops organized into experimental situations that addressed the research questions listed in Chapter III. Each experiment was a little different because of the research question addressed and because of incremental learning on the researcher's part from one workshop to the next.

Experiment One of this study consisted of a comparative analysis of the teaching of *Stars* in a face-to-face versus an online format. Quantitative data were collected through the use of a survey questionnaire in order to determine which format was preferred by teachers. Experiment Two, informed by the design and response to Experiment One, consisted of two workshops located in two different states; qualitative data collection came from two focus groups which were held with participants following each workshop. Workshop implementation plans were required of participants and were also collected. Developed and informed by Experiments One and Two, Experiment Three consisted of two PD workshops—a pilot-test workshop and the other a full implementation workshop designed for the analysis of a new dissemination approach, the Learning Cluster Method (LCM). In order to measure participant satisfaction and success of the LCM hybrid dissemination method, a survey questionnaire was administered immediately following the pilot-test workshop that included both closed- and open-ended questions. A follow-up survey was also administered by email to each participant after

the workshop in order to examine to what extent these teachers followed through on their implementation plans, as well as to assess the development and enhancement, through the application of the LCM, of teacher leadership skills among participants. Reminder emails were sent to participants who did not meet response deadlines (Dillman, Smyth, and Christian 2009). During the full implementation LCM workshop, a pre-survey questionnaire was administered that addressed participants' thoughts on characteristics of effective teacher leaders. After this workshop, a post-survey questionnaire, including both open- and close-ended questions was administered and a certain number of teachers were also interviewed. Three months following this workshop, participants were sent a follow-up survey in order to determine usefulness of the *Stars* PD programs, and how successful these teachers had been in implementing their own workshops. In sum, the effectiveness of *Stars* was addressed through: 1) an analysis of teacher satisfaction (reaction), 2) comparison to face-to-face methods, 3) alternative dissemination capabilities using the LCM, and 4) an examination of the development of an online learning community and a measure of the development and enhancement of teacher leadership skills.

Because of the relatively low sample size in each workshop, this research relied heavily on commonly used qualitative techniques in the form of focus groups and survey questionnaires (Creswell 2009). Quantitative statistical measures appropriate for small sample sizes (Field 2009) were also utilized. The quantitative and qualitative data collected were merged and integrated in the final discussion of the results, providing a deeper understanding (Creswell 2009) of teachers' perceptions of *Stars* and their willingness to accept alternative avenues for the delivery of PD.

## Researcher's Role

Largely falling under the realm of qualitative methods and analysis, it is necessary to discuss the researcher's role as the "primary instrument for data collection" (Merriam 2009, 15). Advantages to this approach include (Merriam 2009, 15):

1. Expansion of the researcher's own understanding through various forms of communication.
2. Ability to process information and data immediately.
3. Ability to discuss, determine, and clarify responses with participants.
4. Possibility of leading to further exploration of unanticipated results.

The researcher's bias and worldview, however, also play a role in the development of data collection instruments, as well as in the interpretation and analysis of the respondents' perceptions of *Stars*, potentially impacting the results and therefore making these issues critically important (Merriam 2009). To counter this potential problem, multiple data collection techniques were utilized to increase reliability and validity.

## Research Involving Human Subjects

In order to protect participants' rights and maintain a level of trust among researcher and participant, many safeguards were put in place, including informing the participant of the research objectives, transparency in the data collection procedures, and following and obtaining written consent and assent among participants prior to the research process. This research was approved and deemed exempt from Texas State University's Institutional Review Board (IRB) and all ethical guidelines were followed throughout the study. All identifiable information was kept confidential and remain anonymous during the analysis and results section of this study (see Appendix A for consent form).



Experimental Situation One:  
Online vs. Face-to-Face Professional Development

Adapting methods used by Fisher et al. (2010), the research process began by comparing the teaching of *Stars* in both a face-to-face and online workshop setting (Boehm et al. 2012) in order to answer:

Research Question One: *To what extent are teachers willing to accept an online professional development approach in lieu of the traditional face-to-face method, which has dominated pedagogy and method courses, workshops, and summer institutes for the past several decades?*

This comparative workshop, held during the summer of 2010, was designed to determine whether or not any significant differences, determined by the participants, existed between the two delivery systems (online and face-to-face) and between teacher acceptance of the individual component parts of each program when this workshop was implemented in both formats. For a complete description of the component parts of *Geography: Teaching with the Stars*, please visit [www.geoteach.org](http://www.geoteach.org).

Participants

In order to gain the most information from a sample in which the researcher is able to discover and understand critical information, this study followed a purposeful sampling approach (Patton 2002; Merriam 2009). Therefore, this analysis targeted 6<sup>th</sup> grade contemporary world cultures teachers and 9<sup>th</sup> grade world geography teachers who were members of TAGE and had an interest in the PD workshops offered by both TAGE and the GCGE. These teachers were eager to enrich their geography content knowledge (CK), pedagogic knowledge (PK), and pedagogic content knowledge (PCK) making them a target population whom the *Stars* programs were developed to serve. To generate participants for the workshop, an announcement was sent out across the TAGE listserv

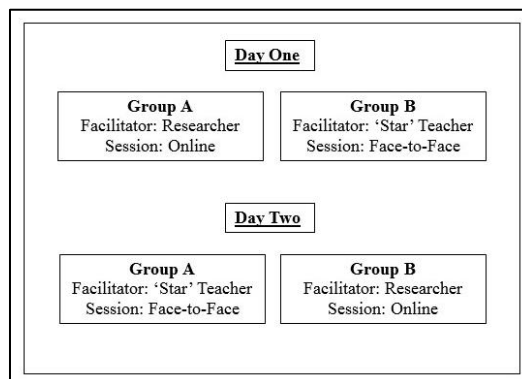
which includes over 2,000 teachers. Teachers who were willing to participate, and ultimately completed the workshop, were also offered and given Continuing Professional Education (CPE) hours to apply to the renewal of their teaching certificates. All interested participants were then emailed and instructed to complete and return an application form. Demographic data collected from the application form included university major and minor, area of teaching certificate credential, subjects taught, geography courses completed in college, years of teaching experience, leadership positions within the school (e.g., social studies department head, etc.), age, and gender.

### Procedure

Careful preparation and planning for the comparison of the online presentation and face-to-face demonstration ensued. The *Stars* teacher from the *Globalization* program was recruited to facilitate the face-to-face demonstration and a researcher partner facilitated the online presentation. Overall, the teaching of the component parts of the program was kept as identical as possible; the only difference between the presentations was the medium used for implementation. The component parts compared between the *Stars* online program and the face-to-face workshop sessions included:

- 1) The Classroom Demonstration: *Stars* teacher's classroom demonstration of best practice strategies and lesson plans;
- 2) The Pedagogic Enhancement: Mentor teacher's comments on the best practice strategies used by the *Stars* teacher;
- 3) The Content Enhancement: case study centering on main content focus of the program;
- 4) Facilitator's Guide: instructions on how to implement a professional development workshop in a face-to-face or an online setting;
- 5) All instructional materials: lesson plans used by *Stars* teacher in each program; and
- 6) The Web-based Interactive Forum: online platform for teachers to share ideas, questions, and promising resources (Boehm et al. 2012).

The comparative analysis took place over two evenings and each session lasted three hours. On day one, the teachers were randomly divided into two groups to participate in either the face-to-face or online format first. Group A participated in a workshop with a research partner acting as the facilitator. Participants viewed the *Globalization* video component parts, perused the website instructional materials, including the Facilitator’s Guide, and participated in discussion regarding the component parts and accessibility of the program. Group B participated in the face-to-face demonstration which took place in an assigned lab with the *Stars* teacher acting as the facilitator; participants were guided through each of the component parts of the *Globalization* program, and the facilitator encouraged discussion among participants. In order to fulfill the pedagogic enhancement component of the online *Stars* program, during the face-to-face workshop, a senior mentor teacher observed the *Stars* teacher and provided comments on the effectiveness of the strategies and teaching methods used. On day two, the two teacher groups were reversed. Therefore, Group A experienced the teaching of *Globalization* in a face-to-face format by the *Stars* teacher, and Group B participated in the online *Stars* workshop, all following the same methods used on day one (see Figure 5.2).



**Figure 5.2. Procedures for Experimental Situation One.**

Immediately following the workshop, the teachers were given a post-survey comparison questionnaire consisting of closed-ended questions (Appendix B). This survey instrument was developed, pilot-tested, and refined according to recommendations from a credible statistician located at Texas State University. Advice was sought from this individual regarding the use of Likert-scales, as well as appropriate statistical tests for analysis. Likert-scales (Likert 1931) assess attitudes of individuals, usually in terms of “degree of agreement or disagreement” (McIver and Carmines 1981). This survey was completed by all of the teachers who had participated in both the online and face-to-face settings, and compared the component parts on a 5-point Likert-scale which included: *Stars* much better, *Stars* somewhat better, equal, face-to-face somewhat better, and face-to-face better. Participants were given a chance to make any additional comments regarding any of the major component parts that comprised the *Globalization* program. Upon return of their post-survey questionnaires, participants were given their CPE credit certificate. In order to analyze if any significant differences exist among participants regarding which approach to PD they preferred, a Chi-Square Goodness of Fit test was used to compare and observe frequencies of answers in the component part categories (Field 2009, Boehm et al. 2012).

Experimental Situation Two:  
A Thorough Analysis of Online Professional Development (*Stars*)  
and the Need for a Hybrid Approach

Organized in two different states during the summer of 2012, two workshops were designed to expand on the Experimental Situation One workshop which focused on comparing the implementation of *Stars* in a face-to-face versus an online setting. For Experiment Two, the main goals were to provide participating teachers with the

necessary experience in using *Stars* in order for them to be able to develop their own implementation workshop plans and to train other teachers throughout their respective states, thereby becoming active agents in the PD process. These workshops and the qualitative data collection processes, using focus groups, were designed in order to answer:

Research Question Two: *To what extent are teachers willing to adapt to a hybrid approach to PD that combines online with face-to-face training methods?*

Qualitative data were collected using focus groups in order to answer Research Question Two. Convening as a group after each of these two workshops, participants were asked to comment on their acceptance of and satisfaction with *Stars*, their perceived value of *Stars* and all related online instructional materials, how *Stars* compares to face-to-face PD, the potential for *Stars* to meet the needs of under-served and rural areas, and the strengths of and potential barriers to workshop implementation using *Stars*. Overall, *Stars* was evaluated to gain a better understanding of how teachers perceive their experiences with and the value of *Stars* as an avenue of OPD.

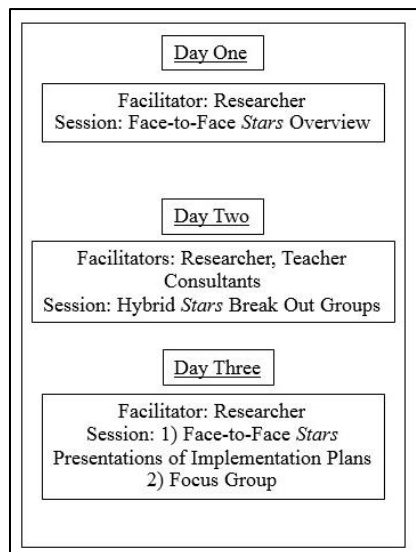
### Participants

In order to gain insight and understanding of the perceived value of *Stars*, and following a purposeful sampling approach (Merriam 2009), this portion of the study targeted two different groups of teachers—one group in Texas in partnership with the GCGE and participants in a workshop held in conjunction with a summer institute in Iowa hosted by the GAI. Both workshops were held on a university campus and both of these entities have a strong history of offering PD to geography and social studies teachers in the form of face-to-face institutes and workshops. Participants included high

school and middle school world geography or social studies teachers who were members of their state Alliance program. The logic lies in selecting a sample population that leads to an in-depth study of the participants in order to learn “about issues of central importance to the purpose of the inquiry” (Patton 2002, 230 cited in Merriam 2009, 77). This is important in terms of ensuring the validity of answers to survey questions and other forms of data collection.

Procedure

Participants in Iowa were solicited by the Alliance Coordinator (a university professor); the workshop in Texas consisted of teachers attending a GCGE workshop. All teachers participated in a *Stars* implementation workshop which took place over a three-day period during the summer of 2012. The same implementation workshop procedures were designed for both groups of teachers, and the only difference was the location where the workshop was held—one in Texas and the other in Iowa (Figure 5.3). Teacher participants were asked to peruse the *Stars* website, [www.geoteach.org](http://www.geoteach.org), prior to the workshop.



**Figure 5.3. Procedures for Experimental Situation Two.**

On the first day of the Iowa and Texas workshops, a select group of experienced teachers, trained through the Alliances as TCs (senior mentor teachers with a strong background in PD methods), were given an overview of *Stars*. This included viewing the programs, a presentation explaining *Stars*, and an explanation of how *Stars* has been used in previous workshops and at conferences. On the second day, a new group of teachers, also trained through the Alliance Network but with varying years of experience, were brought in to participate in the implementation workshop. Next, these teachers were split up into three individual groups, each under the direction of at least one experienced TC who had been trained regarding how to implement *Stars* on day one. A brief overview of *Stars*, however, was also provided by the facilitator on the second day. Each individual group—three groups in Texas and three groups in Iowa—was assigned one of the available *Stars* programs with which to work. Each of these separate groups then fully immersed themselves in the pre-selected program. Using a set of guidelines established by the researcher, with the assistance of the step-by-step instructions provided by the *Stars* Facilitator’s Guide, participants developed a plan of action for the implementation of *Stars* back in their home districts and/or at a local, regional, state, or national conference. The primary goal was to disseminate *Stars* to a more widespread audience. Teachers were instructed to use and develop implementation plans using a variety of formats to present *Stars* (e.g., face-to-face, online, or a hybrid method using another type of technology). Following all workshop activities, participants presented or submitted their *Stars* dissemination and implementation plans to the larger group of teachers. To conclude the workshop in each location, a focus group was held following a similar protocol developed by Frazier and Boehm (2012) (Appendix C). The questions used in

the focus groups were refined through pilot-testing with a similar group of teachers, with an emphasis on the types of information that was needed in order to meet the goals of this workshop. Teachers were asked about their satisfaction with *Stars*, the perceived value of *Stars* and all related online instructional materials, and how *Stars* compared to face-to-face PD. Further questions addressed how *Stars* was able to meet the needs of under-served teachers in rural areas, as well as determining strengths and potential barriers to *Stars* implementation in the home school district or at professional conferences.

The use of a focus group was necessary, as such groups allow individuals with knowledge about a topic the opportunity to “consider their own views in the context of the views of others” (Patton 2002, 386). Data is “socially constructed within the interaction of the group” (Merriam, 2009, 93-4). A predetermined set of open-ended questions was used in order to generate descriptive data (Merriam 2009) about these participants’ perceptions of *Stars*. The focus groups were conducted in a face-to-face format and were video-recorded. Additional notes were taken by the researcher during and immediately following the focus group. Both focus group videos were transcribed by the researcher and checked multiple times for accuracy. Additional content examination was employed during this process as a first step in analysis. Themes that emerged from participant responses were grouped together and coded (Creswell 2009; Merriam 2009). Educational background and demographic data were collected by the researcher for the Texas group from submitted workshop applications, and—with assistance from the local facilitator—from the Iowa-based participants in a post-workshop survey (Appendix D) using the free survey software and questionnaire tool, Survey Monkey



([www.surveymonkey.com](http://www.surveymonkey.com)). Because of the low sample size, no analytical statistical measures were employed with these groups of teachers.

Experimental Situation Three:  
The Learning Cluster Method (LCM)

Pilot-Testing the Learning Cluster Method

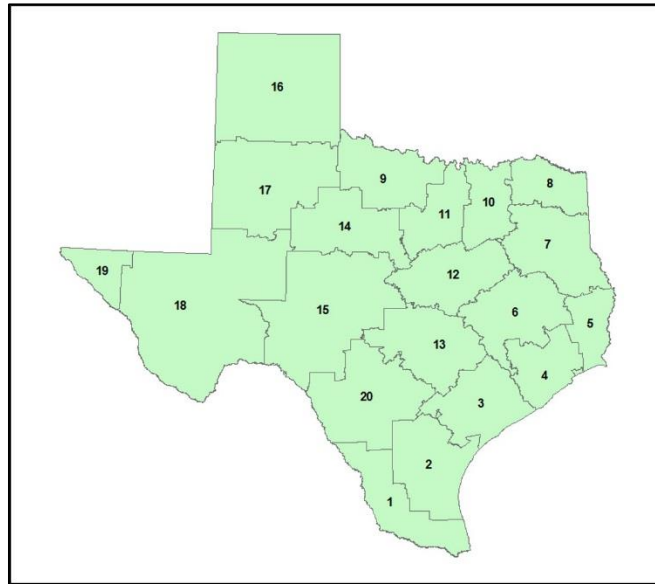
Early results and incremental learning from Experiments One and Two indicated the need to develop a dissemination method that was highly flexible and able to meet the needs of various groups of teachers. Additionally, it was thought that teacher leadership skills could be developed and enhanced among participants, as a result of continued use and implementation of a new method of PD called the Learning Cluster Method (LCM). In order to address these two key issues (various needs of teachers and development of teacher leadership skills), a research protocol was developed to measure the success of the LCM and answer the following questions:

*Research Question 3: How willing are teachers to accept and operationalize a new method of professional development called the Learning Cluster Method (LCM) as an extension of online and hybrid training that will be able to reach large numbers of teachers?*

*Research Question 4: How effective is teacher use of the Learning Cluster Method as a means of developing and enhancing teacher leadership skills?*

In a state as large and diverse as Texas, PD is often administered under the guidance of the Texas Education Agency (TEA). To facilitate this process, TEA maintains 20 distinct regional Education Service Centers (ESCs) (Figure 5.4). These service centers employ subject area specialists whose responsibilities include overseeing PD activities among teachers and providers in their region. Therefore, these individual service centers provide an opportunity to target significant regions in Texas where the

LCM could be applied and expanded upon, often in conjunction with an ongoing geography conference, as was the case with Region VI in Huntsville, Texas described below.



**Figure 5.4 Texas Education Service Centers.**

### Participants

A half-day workshop, held in conjunction with Region VI Education Service Center’s (ESC) Annual Geography Conference in February 2013, was designed to evaluate the effectiveness of the LCM, not only as a hybrid PD technique, but also as a means of encouraging teacher leaders to become active agents in extending the PD process. Notice about this workshop (Appendix E) was given by Region VI’s social studies specialist and sent out across the social studies list-serve, which contains over 400 social studies teachers. In total, eight teachers agreed to participate in this half-day workshop and attended the session which was open to all conference participants. The main goal of this workshop was to pilot-test the LCM and determine acceptance through the use of a survey-questionnaire.

## Procedure

At the Region VI geography conference, the researcher served as the workshop facilitator, provided an overview of *Stars*' dissemination and application techniques, and stated the goals for achieving the development of an online learning community and the enhancement of teacher leadership skills. An open discussion proceeded regarding effective strategies and the benefits or barriers to implementing this type of PD activity. The *Stars* website was perused by the teachers and they were instructed to download and view video components that they thought could become part of an implementation workshop plan. Teachers paired up and discussed ways in which the LCM could be used in their school districts or at professional conferences. Teachers then made an initial extension of the face-to-face workshop by utilizing the online web-forum for interaction and the ability to ask and have questions answered. Finally, a survey questionnaire was administered to measure how teachers accepted the different aspects of *Stars*, OPD, the LCM, and the potential to develop online learning communities within an online forum and teacher leadership skills using a 5-point Likert-scale questionnaire (Appendix F). The survey also collected demographic information from participants, including university major and minor, area of teaching certificate credential, subjects taught, geography courses completed in college, years of teaching experience, leadership positions within the school (e.g., social studies department head, etc.), age, and gender. Lastly, the teachers were instructed that a follow-up survey (Appendix G) would be distributed via email in June to inform the workshop facilitator on the progress of second generation implementation workshops using the LCM, in an attempt to gauge the success of ongoing

dissemination, continued collaboration and interaction through the use of the online forum, and the development of teacher leadership skills. Reminder emails were sent to teachers who failed to meet the follow-up survey response deadlines (Dillman, Smyth, and Christian 2009).

### Further Testing of the Learning Cluster Method

#### Participants

An existing partnership between the GCGE and the Harte Research Institute, located at Texas A&M University-Corpus Christi, provided another opportunity to carry out a workshop designed to further analyze the effectiveness of the LCM. In order to generate participants, the researcher contacted Region II ESC's social studies specialist in Corpus Christi, and an announcement was sent via the social studies list-serve, which contains over 600 social studies teachers at all grade levels (Appendix H). The email detailed the concept and goals of the workshop and was geared toward social studies and geography teachers. Because of the environmental sensitivity of areas in the region, located near the Gulf of Mexico, the researcher also coordinated with the science specialist at the Region II ESC and an email was distributed to over 1,000 teachers on the science Region II ESC listserv at all grade levels, calling for interested participants. For both of these groups, the researcher was looking for teachers who taught at the middle school and high school levels and had an interest in developing and enhancing their teacher leadership skills. This one-day workshop focused on the *Stars Tidewaters* program, and while the program used was regionally focused, Gulf of Mexico issues were seen to be of importance to a much larger area and are applicable in many other sections of the United States. It was determined that these teachers could provide an

overall assessment of methods used throughout the *Stars* programs. They were also qualified to take advantage of the opportunity for the dissemination of content and pedagogic knowledge offered about Gulf issues that this program provided.

### Procedure

In June 2013, geography and science teachers participated in a one-day workshop held at the Harte Research Institute, Texas A&M-Corpus Christi, facilitated by the researcher, the director of the Grosvenor Center, and the two *Stars* teachers from the *Tidewaters* program (one taught science, the other geography). At registration, teachers were asked to complete a teacher leadership pre-questionnaire (Appendix I). First, convening as a whole group, the workshop facilitators presented an overview of *Stars*, OPD, hybrid methods, the LCM, and provided a description and definition of teacher leadership skills and acquisition (see Appendix J for the PowerPoint presentation). The teachers were next divided into two groups; the geography teachers went with one teacher facilitator and the science teachers went with the second teacher facilitator. Each group was given more insight into specific aspects of the *Tidewaters* program that pertained to the subject taught (geography or science) and experienced a demonstration of teacher leadership skills from the teacher facilitator. The whole group reconvened and tested the online teacher forum. Finally, teacher participants were asked to work in groups, in an effort to build a community of teacher leaders. They were also asked to use the *Stars* Facilitator's Guide to develop their own workshop implementation plan for presenting in their home school districts, at an ESC, or at another conference or workshop of their choice (see Appendix K for implementation plan guidelines). Developed following methods used by Boehm et al. 2012, Frazier and Boehm 2012, Lieberman and

Miller 2004, Hanuscin, Rebello, and Sinha 2012, and York-Barr and Duke 2004, immediately after the LCM workshop, a post-survey questionnaire, including both closed- and open-ended questions, was administered to all participants (Appendix L). The questionnaire aimed to determine the effectiveness of *Stars* and its capabilities as an OPD system, the potential of the LCM to gain maximum dissemination potential, continued collaboration, and the potential for the LCM to serve as a gateway to the development and enhancement of teacher leadership skills. Teachers were also informed that the workshop facilitator would contact them in the fall of 2013 in order to gauge the success of ongoing dissemination, continued collaboration, interaction, and expansion of an online learning community, and the development and enhancement of teacher leadership skills through the use of a follow-up survey questionnaire (Appendix M).

All responses to the open-ended questions were reviewed multiple times and general themes were coded into separate categories in order to provide insight into the Likert-scale responses. These survey questionnaires included both open- and closed-ended questions and asked participants to “rate the usefulness of these delivery formats” (Moe and Rye 2011, 168). The analysis for this last experiment did “not intend to make any statistical generalizations;” because of the qualitative nature of the research design, the data are “used only for descriptive processes” (Moe and Rye 2011, 168).

## CHAPTER VI

### Analysis

The analysis section of this dissertation reflects a mixed methods research design that is detailed in the “Methods” chapter. Essentially, this longitudinal, mixed methods study uses four research questions designed to organize the analysis of teachers’ willingness to accept increasingly sophisticated techniques of professional development (PD), beginning with a strictly online professional development (OPD) method, transitioning to methods involving online and traditional face-to-face approaches, and finally the development of a dissemination approach, the Learning Cluster Method (LCM), that combines both online and face-to-face PD, while also encouraging the development of an online learning community and the enhancement of teacher leadership skills.

This research, which could be described as an “incremental learning process,” occurred over three and a half years (2010-2013), and involved data collection in three separate experimental situations involving five separate workshops consisting of teachers located in two states, and thereby impacting other teachers in several school districts. The results of this analysis provide an in-depth picture of the effectiveness and perceived value of *Stars* and its program implementation strategy, the LCM, as well as teachers’ willingness to accept this approach to PD, the capabilities and dissemination opportunities provided by the LCM to reach a broader audience and maximize impact, potential for the formation of online learning communities, and the development and enhancement of teacher leadership skills. The results are reported here and are organized

by chronology, by experimental situation, and by the four main research questions following a brief description of the process used for data collection.

Experimental Situation One:  
Online vs. Face-to-Face Professional Development

Experiment One of this study was designed to provide a comparative analysis, by teachers in a PD situation, of a *Stars* online teacher training program versus a traditional face-to-face approach in order to answer Research Question One: *To what extent are teachers willing to accept an OPD approach in lieu of the traditional face-to-face method, which has dominated pedagogical and methods courses for the past several decades?* In order to prepare for data collection and analysis for this question, a workshop was organized using the *Globalization* program and held in conjunction with a Texas Alliance for Geographic Education (TAGE) 2010 summer institute. The comparative analysis consisted of two separate workshop situations held simultaneously in which both procedures (online and face-to-face) were offered to teachers. *Stars* teacher, Shagufta Ellam, facilitated both face-to-face workshops and a research partner facilitated the online workshops. Procedures during both two-day workshops were kept as identical as possible and the only difference was the medium used. All participants experienced both the online and face-to-face workshop settings in order to determine, through the use of a post-survey questionnaire and standard quantitative data collection procedures, if teachers accepted OPD and how it compared to a traditional face-to-face approach.



<b>Table 6.1 Comparison of <i>Stars</i> face-to-face and online professional development approach (n = 18).</b>					
<b>Component Parts</b>	<b>Face-to-Face Approach</b>			<b><i>Stars</i> Approach</b>	
	<b>Much Better</b>	<b>Somewhat Better</b>	<b>Equal</b>	<b>Somewhat Better</b>	<b>Much Better</b>
<b>Classroom Demonstration</b> —Shagufta Ellam’s classroom demonstration of best practice strategies and lesson plans.	2	4	2	4	6
<b>Pedagogic Enhancement</b> —Mentor teacher’s comments on the best practice strategies used by Shagufta Ellam.	1	5	5	5	2
<b>Content Enhancement</b> —Bridgestone/Firestone Case Study	0	0	3	4	9
<b>Instructional Materials</b> —Lesson plans used by Shagufta Ellam on globalization.	5	0	10	0	3
<b>Facilitator’s Guide</b> —Instructions on how to implement a PD workshop.	2	4	9	1	2
<b>Online Interactive Forum</b> —Forum for teachers to share ideas, questions, and promising resources.	3	3	4	0	7

Profile information was gathered on these 18 teachers but was not used for correlations because of the relatively small number of participants. Nonetheless, as a matter of interest, 12 were females and 6 were males. The average age was 38 and

average years of teaching experience was 16. Fifteen of the teachers taught 9<sup>th</sup> grade world geography and three taught 6<sup>th</sup> grade world cultures. Previous coursework in geography ranged from one three-hour course to a minor in geography and two geography majors. Five of the participants had a master's degree in geography, social studies education, or curriculum and instruction. Generally, this group was well-prepared to compare and contrast PD in geography.

The workshop culminated with the administration of a six-part post-survey comparison questionnaire to all participants. Teachers were asked which method of the workshop they perceived as better—the face-to-face or the online approach regarding each of the component parts of *Stars* (Boehm et al. 2012) (Table 6.1). Survey results from Group A and Group B were combined for analysis.

Classroom Demonstration:

Shagufta Ellam's classroom demonstration of best practice strategies and lesson plans.

Overall, slightly more than half of the teachers indicated the *Stars* approach of Shagufta Ellam's classroom demonstration of best practice strategies and lesson plans was much better or somewhat better than the face-to-face approach. With the *Stars* approach, it is not simply a master teacher informing teachers on best practice strategies and lesson plans; participating teachers are exposed to the *Stars* teacher in an actual classroom setting going through the lesson plans and best practice strategies with actual students. Teachers explained some advantages of the *Stars* approach related to this and commented:

- “Seeing the students’ comments, work, enthusiasm, and cooperative learning are very positive.”
- “Easier to understand while watching kids do the activities.”
- “You have the visual of the students actually completing the strategies and tasks.”

- “Showed actual student work.”
- “Helpful seeing students doing the work.”
- “Helpful to see lesson implementation.”
- “With a video presentation teachers can replay and view the lesson as many times as they want to get a handle on the lesson.”

Six teachers, however, felt that the face-to-face approach was much better or somewhat better. Teachers offered comments on why they felt the face-to-face approach was better and comments were often linked to the interaction that face-to-face provides:

- “I liked being able to ask questions.”
- “Human interaction is most effective.”
- “You can have questions answered. Personal interaction.”
- “Could stop a presenter and ask questions for clarification. Got to practice rather than sit and get.”
- “In person, able to have questions asked and answered.”

In sum, six teachers felt that the face-to-face approach of the classroom demonstration was either much better or somewhat better than the *Stars* approach. Overall, two teachers felt that both approaches were equal, offering comments such as they liked being able to answer questions in a face-to-face format but they also liked being able to view the teacher teaching the lessons, and ten of the eighteen teachers indicated that the *Stars* approach was either somewhat better or much better than the face-to-face approach.

Pedagogic Enhancement:

Mentor teacher’s comments on the best practice strategies used by Shagufta Ellam.

Regarding the pedagogic enhancement, seven of the participants rated the *Stars* approach somewhat or much better than the face-to-face approach (Table 6.1). Teachers felt that the *Stars* mentor teacher was more thorough when explaining and commenting on the pedagogic strategies used by the classroom teacher. Teachers also commented on the ability to replay the pedagogic segment; when the mentor teacher comments on the

strategies used, that portion of the classroom demonstration is replayed for the viewer as well. Participants' comments on various aspects of the *Stars* approach to the pedagogic enhancement included:

- “The video just had more detail and reflection.”
- “‘Stars’ mentor teacher gave more information.”
- “The best practice strategies were varied and reflected careful planning.”
- “The ability to rewind and watch again.”
- The “strategies were explained by the mentor teacher and the film replayed that portion of the classroom demonstration.”
- The pedagogic enhancement was “streamlined and easy to follow with the *Stars* approach.”
- The *Stars* approach “covered many more strategies.”
- The “video just had more detail and reflection.”
- “The *Stars* mentor teacher gave more information.”

Another teacher commented there is a “benefit in hearing different perspectives and [it is] more useful because [it is] based on a real world scenario, hopefully demonstrating the most current information, so again good even for experienced teachers.” According to Kurz et al. (2009, 472), many PD participants “need help in drawing out critical distinctions regarding what works and what does not across a variety of situations” and most helpful is the need for “expert analysis by teachers in the case along with outside experts commenting on the lesson design and quality of instruction.” Five participants rated both approaches as equal with one participant commenting that both approaches “were done well.” Six participants, however, rated the face-to-face approach as somewhat better or much better than the *Stars* video-based approach. Comments in favor of the face-to-face approach included the ability to be able to ask the mentor teacher direct questions about the strategies used during the classroom demonstration.

Content Enhancement:  
Bridgestone/Firestone Case Study

Thirteen participants felt that the *Stars* approach to the viewing of the content enhancement was somewhat better or much better, which results in more than three-fourths preferring *Stars* (Table 6.1). Three participants felt that the *Stars* approach was equal to the face-to-face approach, which is probably because of the fact that the video was shown in both instances. None of the participants rated the face-to-face approach as somewhat or much better, and two participants failed to answer this question. These responses are interesting because the content enhancement video was shown in both workshop settings—the face-to-face and online—in the exact same format. The fact that none of the teachers responded that the face-to-face approach to showing the video was preferred or better is interesting because of the fact that showing the video in a face-to-face format would allow for an on-the-spot discussion about the content enhancement video. A follow-up study on this notion should be undertaken in order to gain insight into why teachers preferred the *Stars* online viewing of the video versus the face-to-face viewing.

Instructional Materials:  
Lesson plans used by Shagufta Ellam in the *Globalization* program.

Ten participants felt that the use of the instructional materials in both professional development formats was equal and stated they received the same materials in both approaches. Five participants rated the face-to-face use of the print support materials as much better; associated comments and feedback included: “got to practice it; a chance to actively learn rather than passive,” and another participant stated they could ask questions

about the instructional materials. Three participants, however, rated the use of instructional support materials as much better in the *Stars* format and one provided the comment that it was “helpful to see lesson implementation.”

Facilitator’s Guide:

Instructions for implementing a PD workshop in either a face-to-face and online setting.

Nine participants answered that the use of the Facilitator’s Guide when comparing the two approaches was equal. Six participants felt the use of the Facilitator’s Guide was somewhat or much better in the face-to-face format and three participants felt the use of the Facilitator’s Guide was somewhat or much better in the *Stars* approach. In both workshop settings, all participants viewed the Facilitator’s Guide as a tremendous resource that enables them to develop and implement their own workshop in either setting. By providing this guide, teachers are given the basic structure and guidelines so that they may take the *Stars* resource materials and share it with other teachers.

Online Interactive Forum:

Forum for teachers to share ideas, questions, and promising resources.

Lastly, seven participants felt the use of the web-based interactive forum was much better using the *Stars* approach. One participant commented: “I can have questions answered 24/7.” Being able to participate in the forum provides an opportunity for community building among participants. Nevertheless, four participants felt that the use of the web-based interactive forum was equal in both approaches, offering the opportunity to either extend a face-to-face workshop and/or provide continuing interaction and collaboration among workshop participants, and six felt that the face-to-face approach was somewhat or much better, as the forum provides an opportunity to extend a “one-shot” face-to-face workshop.

### Testing for Significant Differences

While the above analysis and explanation provide an overview of teacher perceptions and comparison of teaching *Stars* and the globalization concept, and results show that *Stars* fared well and maybe even was slightly preferred to the face-to-face approach (Boehm et al. 2012), it was deemed necessary to test responses to determine if any statistically significant differences existed among the component parts. Because of the relatively low sample size, two of the component parts—the classroom demonstration and the pedagogic enhancement—met the requirements for a Chi-Square Goodness of Fit test in order to compare observed frequencies and expected frequencies (Field 2009; Boehm et al. 2012). The categories for “somewhat better” and “much better” were also combined for the analysis; data was entered in to the Statistical Packages for the Social Sciences (SPSS). While future studies should utilize a much larger sample, these results showed that no statistically significant differences exists between these two categories—the classroom demonstration,  $\chi^2 (2) = 5.34, df = 2, p > 0.05$  (Table 6.2), or the pedagogic enhancement,  $\chi^2 (2) = 0.33, df = 2, p > 0.05$  (Table 6.3)—when comparing the face-to-face and online delivery approach (Boehm et al. 2012), clearly demonstrating the effectiveness of *Stars* and the capabilities of both of these forms of workshop implementation procedures.

**Table. 6.2 Results of Chi-Square Test for Classroom Demonstration (CD) (Source: adapted from Boehm et al. 2012, 49).**

CD	Frequency	Percent	Test Percent	Cumulative Frequency	Cumulative Percent	Chi-Square Test for Specified Proportions	
1-Face-to-Face Better	6	33.33	33.30	6	33.33	Chi-Square	5.33
2-Equal	2	11.11	33.30	8	44.44	DF	2
3- <i>Stars</i> Better	10	55.56	33.30	18	100.00	Pr > ChiSq	0.0693

PE	Frequency	Percent	Test Percent	Cumulative Frequency	Cumulative Percent	Chi-Square Test for Specified Proportions	
1-Face-to-Face Better	6	33.33	33.30	6	33.33	Chi-Square	0.33
2-Equal	5	27.78	33.30	11	61.11	DF	2
3-Stars Better	7	38.89	33.30	18	100.00	Pr > ChiSq	0.84

Summary

This comparative workshop experiment, therefore, provided insight into the first research question: *Are teachers willing to accept an online professional development approach in lieu of the traditional face-to-face method, which has dominated pedagogy and methods courses, workshops, and summer institutes for the past several decades?*

Results indicate teachers' level of satisfaction with each of the component parts, beginning with the classroom demonstration and followed by the pedagogic enhancement, content enhancement, print support materials, Facilitator's Guide, and the web-based interactive forum. The results provide insight into how *Stars* compares in terms of teaching the globalization concept in a traditional face-to-face approach or an online approach; in effect, which medium do teachers prefer? Overall, not much difference exists in these teachers' comparisons between the *Stars* online approach and the traditional face-to-face approach to teaching the concept of globalization.

Teacher responses indicate they are, in fact, willing to accept and may even prefer an online approach to PD (Boehm et al. 2012). While this study utilized a rather small sample of teachers, the nature of teacher PD has changed over the years and online options are becoming more feasible. While many teachers continue to participate in face-to-face workshops because of the interaction afforded by this approach, these geography



teachers accept OPD even in a time where face-to-face workshops continue to dominate, especially throughout the Alliance Network.

Experimental Situation Two:  
A Thorough Analysis of Online Professional Development (*Stars*)  
and the Need for a Hybrid Approach

The comparative analysis of *Stars* in Experiment One prompted the need for developing a workshop experiment designed to provide a more in-depth exploration of the reasons why teachers were willing to accept OPD while at the same time continuing their interest in traditional face-to-face methods. Experiment Two, informed largely by the responses to questions asked of teachers in Experiment One, was arranged during the summer of 2012 in order to answer Research Question Two: *To what extent are teachers willing to adapt to a hybrid approach to PD that combines online with face-to-face training?* Experiment Two consisted of two workshops—one held in conjunction with the Geographic Alliance of Iowa (GAI) in Cedar Falls, Iowa, and one in conjunction with a Grosvenor Center for Geographic Education (GCGE) workshop held in San Marcos, Texas. Following a presentation of the *Stars* series in a traditional face-to-face approach by the researcher, teachers were divided into three groups. Each group was assigned one of the available *Stars* programs, *Globalization*, *Watershed Management*, or *Agriculture and Water*. Teachers participated in these online, self-guided workshops. Teachers were also challenged to develop an implementation plan for how they might share their PD expertise once they got back to their home school district or at a professional conference. Two focus groups were organized following both *Stars* implementation workshops at each site in an attempt to ascertain teacher perceptions of *Stars*, and the use and need for some combination of online and face-to-face PD methods.

A combined total of 26 participants—15 in the Texas group, 9 females and 6 males, and 11 in the Iowa group, 6 females and 5 males—participated in these two workshops. Average age among both groups was 42 and average years of teaching experience was 15. Undergraduate education varied among the participants, but well over three-fourths majored or minored in a social studies field (geography, history, or social science) or education. Eleven of the twenty-six had masters or other advanced degrees. These degrees were in geography education, geography, social studies curriculum, curriculum and instruction, with a few outliers including liberal arts and counseling. All of the teachers taught social studies subject areas, and many taught a geography course, including Advanced Placement Human Geography (APHG), ranging from 6<sup>th</sup> to 12<sup>th</sup> grade.

Qualitative research calls for analysis to begin while in the data collection stage (Merriam, 2009). Both focus group recordings were watched repeatedly while being transcribed. The transcriptions and video recordings were perused multiple times to check for accuracy, thus assuring reliability (Gibbs 2007; Creswell 2009). Using the transcriptions from the focus groups, in addition to field notes, emerging themes were identified and coded into categories, which represented general ideas and issues related to participant experience and perception of *Stars*. Themes that emerged related to the literature base on OPD, were sometimes unusual or unexpected, and thus contributed to a theoretical perspective (Creswell 2009). Nine major themes emerged from the focus group analysis of *Stars* as an alternative to a traditional PD strategy using face-to-face techniques in a workshop situation:

1. High-quality programs and resource materials.

2. Ability to view authentic classroom settings.
3. Highly adaptable lessons to meet the needs of teachers.
4. Flexibility of anytime, anywhere use.
5. Promotes an interdisciplinary perspective to teaching and learning.
6. Ability to remove locational and distance barriers.
7. Provides examples of differentiated instruction.
8. Comparison of online and face-to-face PD methods.
9. A real need exists for a hybrid approach to PD.

#### High-Quality Programs and Resource Materials.

Teachers, commenting on their perceived value of the overall concept of *Stars* as an avenue of PD, stated that *Stars* is a comprehensive PD package offering in-class video demonstrations, videos that examine pedagogical techniques, instructional materials that are full of resources aimed at increasing content knowledge, all buttressed by a Facilitator's Guide that allows users to self-guide themselves through each program, and an interactive forum where continued collaboration can occur. A couple of teachers commented on the need for high-quality resources especially for geography teachers. These teachers felt that *Stars*, and what these programs offer, are putting high-quality resources into the hands of teachers who need them. They commented:

“...you know *Stars* is different in that there is some very powerful part that is going to impact students but that it really addresses that need to increase the teaching quality that we have in geography specifically, but in all the social studies. In Iowa and probably other places you know the whole rap of social studies teachers as coach first and then teacher, it's hard for that to continue to hold on when people are doing stuff like this (*Stars*). I mean the more of th[ese types of materials] we can get out there and I mean it can't be better to just sit at the front of the class and to

jabber on and on than to have the students engaged in this way, I just think that will give way to these kinds of practices [demonstrated in *Stars*] and I'm glad that our Alliance is supporting that and we always have been but this is just another way to kind of push that forward and for you to see; it's one thing to have [another teacher] show me in a workshop what he's doing with a bunch of teachers but it's a lot easier to believe it will work when I see it working in front of kids."

"I know we have school districts that are struggling just trying to keep going and social studies material is not a priority and these are quality materials which I think are really good and I think that's saying a lot to have access to something like that um for free virtually, I mean that's pretty powerful so I just hope we can help get to the people that have that need."

Success "begins by preparing your professionals," and *Stars* provides an opportunity for teaching teachers how to prepare and "coordinate staff development." Recognizing that "different teachers work in different ways," *Stars* "provides materials and strategies for all teachers, and does not just focus on content." Professional development programs often focus on student learning. *Stars* was developed to provide teachers with interactive and hands-on learning materials and strategies to use in the classroom. Teachers expressed a variety of comments, including: *Stars* consists of "teachers training teachers," "teaching teachers to be better teachers," and "...it's the teacher tested teacher training." One teacher expanded further:

"I think [*Stars*] backs up our tradition of using teachers to teach other teachers, um teachers are the ones who are facilitating the workshops ... we've all been in places where we've had professional development where they bring some person in who's a big expert on something and they have no idea about the time constraints or the demands of a regular classroom teacher ... and you are more apt to ask questions of somebody who's on the same level, from teacher to teacher."

With *Stars*, teachers are exposed to materials that provide instruction on how to “do something different in the classroom and get away from PowerPoint.” The topics in the programs are “very current, relevant, and effective.” The “content is high-quality, showing variety, and discussing important topics.” Additional comments included: the “quality is great,” the overall process of PD is important, *Stars* is very “high level and very detailed,” and “the resources shown are teacher friendly and developed by teachers.” Commenting on the structure of *Stars* one teacher stated that it was beneficial to have the individual segments available for download “rather than long videos.” One teacher commented that the content case study’s length of 10-15 minutes, a component of each program that is also appropriate for classroom use, “is a great fit for a 50 minute class period.”

While the aims of the programs, are, once again, to equip teachers with the necessary pedagogic knowledge (PK), content knowledge (CK), and pedagogic content knowledge (PCK), many responses in the focus group centered on how the lessons and strategies promote effective techniques that support student learning. The lessons allow students to reach higher order thinking skills and routes of inquiry. Students are allowed to take ownership of the learning and play an active role in the classroom, rather than being a passive learner. Student support from the teachers is apparent in *Stars* and allows for the students to grow and express themselves in collaborative group settings and individually. One teacher in particular commented that the students take notes and summarize major points in the lessons which are “student centered, that’s the other really big thing, I know in our district and in Iowa [we are encouraged to make the] class more about the kids and less about [the teacher]. More learning from [the students] rather than

[the teacher].” By becoming interested in first the content of the programs and then the strategies used, the teachers can begin to see how the students will respond to the activities used in the classroom.

#### Ability to View Authentic Classroom Settings.

Video-based professional development that depicts real teachers and students in authentic classroom settings has the power to promote in-depth analysis and higher-order thinking skills (Risko, Yount, and McAllister 1992; Boehm et al. 2012; Frazier and Boehm 2012). Video can also support teacher learning (Brunvand, 2010) and can be used by novice and veteran teachers as a way to help teachers learn what to do in the classroom (Sherin and van Es, 2005; Boehm et al. 2012). Teachers’ past experiences with PD are often characterized by face-to-face sessions, with a facilitator explaining the lessons and often having the teacher participants work through the activities. *Stars*, on the other hand, depicts teachers teaching lessons to the students (Boehm et al. 2012; Frazier and Boehm 2012; Brysch and Boehm 2013). Viewers are exposed to teacher-to-student interaction, as well as student-to-student interaction. Providing insight for teacher participants regarding how these lessons will play out in their own classrooms, while viewing the videos, teachers can begin to formulate their own ideas of how to go about teaching the lesson and what will work in their own classrooms with their students.

Teachers offered comments such as:

“Teachers can have a feel for what the lesson will be like; sometimes you’re given stuff but you’re not sure how it will turn out.” [*Stars*] demonstrates to “teachers what this lesson would look like in the classroom.”

“...so many of our other professional development workshops that we go to they just kind of toss the stuff out there and you have to figure out how to do it, but *Stars* not

only gives us the strategies and the worksheets and everything that goes with it, but it's also being modeled for us, which is why it's so helpful."

"You know showing it in the classroom is a huge thing because we try to recreate that a lot in professional development where we have the teachers do the assignment you know have them have that connection. But it is different to see actual students doing it and if people maybe are skeptical, I don't know if my kids would like that or if they would do it, to be able to see it in the video, I think it really answers those questions and I think it would make them much more likely to try those lessons in the classroom."

The *Stars* program production plan consists of filming anywhere between 10-15 hours of actual classroom teaching with the final video consisting of only about 15-45 minutes of edited footage. Nevertheless, teachers were aware of the editing process that goes into *Stars* but they understood the amount of work that goes into preparing and teaching a lesson. One teacher noted:

"...the quality of the teachers in the videos, you know they were real teachers they were dealing with the real problems that we deal with and you can see that, now they cut and they edit and all that but it was still a real situation so it's like yeah I can do that and I think that's really powerful."

Also, comments made by the teacher in the *Globalization* video about how teachers have to practice their expectations with students on a continual basis—a process that begins at the beginning of the school year—was acknowledged by the teachers. For example, the effective use of graphic organizers by students is a process that takes time, according to the *Stars* teacher, and many teachers agreed that it is not a strategy that all students are able to grasp right away. It is important to note that all of the *Stars* programs were filmed in the second semester of the school year, and all but one were filmed in May. Many teachers offered insightful comments:

“You begin at the very beginning of the year to model what you want the kids to do and then you build on that and you build on that so ... they can take it and run and know exactly what they’re supposed to do and I think the reference to that too, that this isn’t just something you pop in and do one day and forget about it. This is something that should be on going all the time in your classroom if you really want it to work.”

“The idea of seeing the globalization video and watching the teacher and watching the kids gives a feel that a lot of times you only get to see the ‘A’ classroom. The good kids working through lessons but through the [*Stars*] videos you can see the whole classroom and you see the kids and knowing that the teacher is working in a district that’s going to maybe be a little bit higher level and with higher level kids than mine, I can look at those videos and see the concepts of globalization or watersheds or whatever it happens to be and know that I’m not going to be able to do this right off the bat, it’s going to take a lot of practice and knowing that it took a lot of time to get these strategies down and a lot of times with our in-service, we’re thrown in, you need to start using some of the strategies on Monday, but you don’t adequately know how it’s going to affect our kids but we try and try and wind up banging our heads up against a wall, but *Stars* is just you look at the strategies and things like that and you can adapt them fairly easily.”

The modeling that these programs provide was a recurring theme among responses in the focus groups. Many teachers explained they often do not have time to view even their colleagues down the hall to get a sense of the strategies and methods these teachers use in their classrooms. Being able to view an exemplary teacher and how she/he handles student questions and classroom interaction was a powerful piece for many of the teachers. Being able to view PD in an actual classroom setting like this is rare. Mentioning a previous and widely prominent social studies PD program she had past experience with, one teacher exclaimed:



“I liked the video part of it in terms of you get to see a strategy because I know with Geography Alive or History Alive and all these other programs they got the strategies and the activities mapped out for you but then you do all the work for preparing it and you’re like well I hope this is what it’s supposed to look like and you go through four periods before you actually get the kinks worked out, whereas this you can look at the strategies, see the strategies, see if it’s something you’re comfortable with and then watch the video and go ok this is how I could adapt this, this is what I could do in my classroom, this is what I can’t do, so I really like the video part of it.”

Regarding the format of *Stars* and the ability to view a real classroom setting that enables teachers to gain insight into how the lesson might develop in their own classrooms and especially in terms of the benefits for pre-service teachers, additional comments included:

“New teachers are encouraged to walk into different classrooms to observe, and teachers that have already been teaching for many years they can use this as a model of what to do or what not to do which is also beneficial too to those new teachers, a program for even the districts, you know what this is a model of what to do and how to put students in groups and get them to work and write.”

“...yeah when it comes to strategies teachers don’t model for teachers and it’s right there. I mean we’re supposed to model it for our students but now with *Teaching with the Stars* we have teachers modeling it for other teachers so we can see how it works.”

Another unique aspect of *Stars* is having an outside mentor teacher comment on the strategies and activities used in the classroom. One teacher, commenting on the advantages of this pedagogic enhancement piece stated that there is a “benefit to hearing different perspectives and it’s more useful because it is based on a real world scenario.”

Further, this teacher commented,

“The pedagogic enhancement being applied to an actual teaching scenario, you know, that is not something that is

easily available in terms of professional development. So it's not just saying ok so here's the same thing we could've given to you at a conference and we're going to give it to you online it's something that would only be available if you're observing another teacher's class essentially or if you are watching the videos and I think a lot of times the pedagogic part, at least what I've seen with professional development, that is the least likely [component] to have, professional development tends to be a lot more content driven and I think the pedagogic part is one thing teachers need the most."

Being able to view a real classroom setting seems to be an important part of *Stars* enabling teachers to connect theory to practice, and also giving them an idea of how to teach and facilitate the lesson in their own classroom, and what they might expect from students. The pedagogic enhancement can be applied to more than one lesson and the strategies can be utilized by any teacher; they can view the videos, determine the strategy used, and then go from there. Therefore, building knowledge of teaching and learning does not stop after watching just one program and "adaptability is a benefit." Other comments related to the critical pedagogic enhancement component included:

"Instructional strategies are instructional strategies. It doesn't matter if you are a science teacher or language arts teacher or if you're a social studies teacher and seeing other people do them either sometimes reminds you of something you haven't used in a while or it might be a slightly different take on something you have used before and it just makes the old new again, it's good to be reminded of all the options and tools that we have."

"But even if I'm not teaching a unit on globalization I can still adapt those strategies for my classroom. We've discussed that some of those strategies aren't brand new but there was at least one thing all of us hadn't seen before or you know thought of but even on the things we have seen before, to see someone else do it and kind of remember, oh yeah they did that and I remember hearing that but I was nervous about doing that, and you know I had never really done it that way; it just gets you thinking about it again and

kind of makes the old new again and that I think is really valuable.”

“One of the things is the comprehensiveness that I like, kind of getting back to the level of detail . . . for me, so that I can see what the lesson being taught is supposed to look like but some of the strategies you can go ‘oh great this is exactly what I was looking for to cover this topic.’ And also stuff for administrators quite frankly because a lot of the pedagogic links are rationales like about cooperative learning, or active learning, it just gives a teacher more fuel, to be like look this is a great thing everything’s covered I mean something to make you feel like you’re getting something out of it to make you a better teacher and something for the administrators, look here’s the rationale for this, this works, here’s the research, this is standards based and research based.”

Another teacher identified the pedagogic enhancement component of the programs as having the potential for being especially beneficial for new or beginning teachers. For teachers who might not have access to current and updated resources and materials, *Stars* might provide a solution to bridge content knowledge and pedagogic knowledge gaps that many geography teachers who enter their first teaching assignment often face. Further, viewing another teacher provides a “neutral” environment to discuss and reflect on someone else’s teaching. He states:

“You know I think of beginning teachers, you know at some of our rural districts, my first job that I went into you know I went in [and had] materials that were really old that really didn’t connect with what I had been taught in college and something like this (*Stars*) would’ve really helped me fill that gap because as a beginning teacher you don’t have the whole tool box of things that you’ve done for 18 years so I could really see this being helpful for them. I’m also a mentor in my district and this would be a wonderful way to help and support a beginning teacher to be able to look at someone else’s teaching . . . so it’s kind of neutral to talk about, you look at it and model it all in a way that’s not very threatening.”

“Sometimes when new teachers are encouraged to walk into different classrooms to observe you know teachers that have already been teaching for many years they can use this as a model of what to do or what not to do which is also beneficial too to those new teachers, a program for even the districts ... this a model of what to do and how to put students in groups and get them to work cooperatively.”

Overall, the pedagogic enhancement—especially the strategies being used—could be applied to multiple subjects, as one teacher commented, “the modeling and strategies just would work for everybody.” Expanding on this, another teacher commented:

“It’s the method that would work for any discipline, it’s the content that gets these teachers to buy in, when you see the content as a geography teacher you go wow that is awesome content then you buy in, that’s the hook, and then you get to see these new strategies being used that you may not have thought of using in that way so it truly is teaching the teacher to be better at these things but you hook them in with the content, same thing you would do whether it would be in civics or history or anything else if it’s the subject material that they’re most comfortable with, then they’re more likely to use those strategies with that material that they’re comfortable with because if you’re uncomfortable with the strategy and the material you end up doing a bad job at both, so it’s the method that I think works well so it could be an approach for any discipline.”

Viewing these videos also gave teachers a sense of what could be done in their own classroom. Even those teachers who might be hesitant could benefit as “you’re provided more information and more examples of modeling it and how to use it with different strategies to sort of break [teachers] in and get [them] more into [their] comfort zone.” The ability to view a teacher teaching in an authentic classroom setting is perhaps *Stars’* greatest strength, a powerful component to these programs that is clearly demonstrated in the responses of these teachers.

### Highly Adaptable Lessons to Meet the Needs of Teachers.

Being able to adapt the lessons in the program to his/her own classroom was regarded as a strong feature of *Stars*. Either all of the lessons or one or two could be used in these teachers' classrooms. One teacher commented that the "best curriculum is adaptable." With high-stakes testing and accountability on the minds of every teacher, usability regarding alignment of the content in PD with state and local standards in geography, social studies, or science is imperative. The *Stars* programs are aligned with state and national standards, able to meet the needs, and ready to be implemented and adapted for classroom use. For example:

"That's the thing, having these things available encourages teachers you know to do it, here's your lesson plan, here's your activity sheet, all you need to do is to print it off, watch the video it's accessible, they can use it and adapt it and it's there, you don't have to create it from scratch, so it's there for them so they're seeing the teacher do it and they're like ok I can do this."

"You've got the content information there for the teachers who need to go back and learn some of this background stuff but then you've also got the activities and the lessons right there that the teacher can just jump right in and get started or if they just want to pull bits and pieces, or kind of change it totally and just kind of use the basis of it to do something totally different, but it's there so the beginning teacher to the experienced teacher can use it."

Teachers felt that with *Stars* they would be able to pull the most pertinent and important information they needed in order to teach their students. So many resources are available, yet teachers do not have to use everything. Finding what works for the individual teachers by first viewing the videos is a must, however, "once they see it, and that it does work, they can take it back to their classroom; use strategies and adapt it for their particular use." *Stars* is a "tool, you can take it and make it your own" and "put your

own spin on it.” Examples are given to teachers to use the strategies to teach about geographic concepts in one region, but the “activities are very flexible and you can use it in so many other ways,” “you could do a really quick lesson or ... expand on it.”

Regarding the availability of many different resources, one teacher commented:

“It’s very detailed, I really liked the aspect of it where you get to take the time and go into each and every part that we’re interested in, and just to put all the pieces together. If we have a question on one piece we can go straight to the website and go to that place and look it up.”

The amount of resources that are available in the *Stars* programs can be adapted across unit plans and used in a variety of formats. Teachers are not restricted to only use certain parts of the program and are encouraged to develop the methods and strategies depicted in the video components and make them their own in order to reach the maximum potential of use with the resources available.

#### Flexibility of Anytime, Anywhere Use.

The fourth theme that emerged was the flexibility, anytime/anywhere access, and usability that OPD affords. In between preparing for classes, teaching, grading papers, and sponsoring clubs and groups, keeping up to date and current with content and educational theory is a main concern for teachers. Finding time to engage in effective and high-quality PD, however, is essential in order to remain current with research and pedagogy (Zygouris-Coe and Fiedler 2007, 6; Lawless and Pellegrino 2007). Consistent with the literature (Harlen and Doubler, 2004), for many of the participating teachers, the most valued aspect that stemmed from their experience with the *Stars* OPD system was the flexibility of the use of the program. Being “able to do [the professional development session] on your time ... is a huge benefit,” it “makes better use of time, makes you more

efficient,” and it can be “shared easily [and] viewed again as needed.” *Stars* was characterized by many teachers as “user friendly,” “ready to use,” and easily accessible. One teacher compared his experience with *Stars* to his experience with other PD programs:

“I think the important thing ... [is being] user friendly ... [if not,] that will turn people off and *Stars* is so clear you know easy to get around and easier for you to pick and choose ... this is for me, this is the enhancement, uh I mean to me one of the best and easiest things to use and navigate around on, but ... there are some things that I’ve used that are just the total opposite, but you know some of the stuff [in other programs] is very useful but just navigating around and trying to you know it’s not as intuitive and as well done as *Stars*.”

Teachers lead very busy lives and the flexibility of being able to access OPD to meet their schedules is important. OPD can be accessed anytime and anywhere with an available Internet connection. One teacher in particular commented that sometimes face-to-face PD sessions seem like a marathon, everyone scrambling to get all of the activities done in a fixed amount of time. In contrast to this, and a benefit to OPD, was reiterated in one teacher’s comments:

“I think everybody likes to work at their own pace and the online option allows some direction and then um because sometimes in a face-to-face you sit there and ... you’re not working at the same pace as the people around you and it’s frustrating, and that encourages the tuning out or the falling asleep.”

Teachers like the idea of being able to access high-quality PD at a time that meets their needs and schedules. Being able to access materials that will not only help them gain valuable content knowledge, but also information on the most effective

strategies to use in their classrooms, at a time that is convenient for them, is extremely valuable to them.

Promotes an Interdisciplinary Perspective to Teaching and Learning.

Another theme that emerged dealt with the eclectic and interdisciplinary nature of geography as a subject. Many teachers commented that while viewing the *Stars* programs, with both cultural and physical geography presented through rich content, they easily saw potential for use of the component parts by teachers of other subjects, not just social studies or geography. Whether it be teaching teachers how to implement effective reading strategies in the classroom, or guiding teachers on how to apply math skills, these lessons could be applied to many different subjects, thereby reaching and impacting more teachers and students and connecting geography across disciplines. One teacher saw the city council debate from the *Water and Agriculture* video as beneficial for the vocational agriculture teacher at her school. Discussing water issues and having students debate about these issues is geography. While one teacher felt that he would not be able to apply the *Watershed Management* program lessons in his U.S. history course, he saw use for it in an Earth science course and stated he would share the materials with those teachers in his school. Hopefully, he stated, “more science teachers might be able to infuse more geography into their curriculum.” The *Globalization* video, however, could play an important role in his U.S. history class. Often, geography is not as valued of a subject compared to reading, science, math, or history; by incorporating geographic concepts and skills, it fills this gap in the curriculum, especially when geographic content is mandated by standards, yet is often not taught. Teachers are creative in the ways in which they are



able to pull information across subjects, topics, and critical concepts they are teaching in the classroom.

#### Ability to Remove Locational and Distance Barriers.

The next theme to emerge was the ability of OPD to serve remote and underserved areas. Removing geographic barriers, therefore, increases accessibility, and the availability of being offered online and having the power to reach underserved populations in more remote areas is another advantage of video-based or OPD (Jung 2005; Annetta and Dickerson 2006; Borko et al. 2009; Cady and Rearden 2009; de Mesquita et al. 2010; Boehm et al. 2012). All that is needed is access to the Internet, “appropriate computer access, and information about the program.” One teacher stated, “not having to go somewhere or be able to do it on your own time ... is a huge benefit.” Another teacher commented that *Stars* is “very effective [in being able to be reached by teachers in rural or remote areas] assuming they have the appropriate computer access and information about the program.” But, she recognizes the fact that teachers will need a structured introduction and instructions to use these programs remotely; she adds that it “might be good to start with in person training to increase interest, demonstrate some lessons in person, for example, and then send them home to watch all of the segments—need a spark to get them really interested, and that can be hard to do online.” *Stars* also provides an opportunity to get more teachers engaged on a more widespread basis, one that is not confined to a central location and fixed number of teacher participants, and is often associated with lower costs.

### Provides Examples of Differentiated Instruction.

Focus group comments suggested teachers would be able to modify and adapt the lessons so that they would work in their classrooms. One challenge facing today's teachers is the need to meet and respond to differences in learning styles among students in their classrooms (Algozzine and Anderson 2007; Rock et al. 2008; Kurz et al. 2009). In addition, George (2005, 185) posits that "differentiated instruction must form the core of the classroom experience for the student." Because of this notion of diverse students, teachers want to see lessons and activities portrayed in diverse environments which incorporate and introduce methods that account for differences in students' learning styles and capabilities (Kurz et al. 2009). The need for differentiated lessons and learning strategies in *Stars* emerged during the focus group. One participant exclaimed:

"As we are losing teachers and putting more teachers in classrooms you know they definitely expect you to be able to adjust for multiple ability levels and that is difficult unless you've had experience" ... "it might be good to have more differentiation [in the *Stars* lessons]—have sections for new vs. experienced teachers [and] discussions along the lines of, 'another strategy the teacher could have used' ... to have more variety."

As of this writing, no modified strategies accompany the *Stars*' lesson plans and materials at a time when teachers want to see lessons that will account for different styles of learning in order for learning to be enhanced for all students (Kurz et al. 2009). On the other hand, teachers also would like to see materials developed for pre-advanced placement students. Additionally, Kurz et al. (2009, 471-2) comment that teachers want to examine lesson plans for "students who are mainstream and/or gifted, as well as culturally diverse students and how the students learn along with different approaches that can optimize their learning." Adding a video component to both the classroom

demonstration and pedagogic enhancement by the *Stars* teacher and mentor teacher would be one way to include a piece on adapting the lessons for different learning styles.

One teacher exclaimed:

“You don’t always have a choice about what levels you’re teaching so offering differentiation ideas for someone who that doesn’t come naturally to or doesn’t have experience with differentiation, that is always going to be a valuable part for teachers in terms of the actual effectiveness of whatever it is you’re doing and ... you might be differentiating and it may be for all on level geography classes but if you’re in different parts of the state ... you may have different levels of ability or from year to year you have different levels of ability so giving ideas of how to adapt that is what’s going to make it work in the real world.”

Differentiated instruction is an important part of teachers’ professional development and growth. Fostering an environment in the classroom that takes into account different levels of ability benefits the teacher, and most importantly, the students. Providing teachers with different strategies and pedagogic techniques to account for these types of differences would strengthen *Stars* as a whole.

#### Comparison of Online and Face-to-Face Methods.

A goal of the focus group was to determine teacher perceptions of how, in general terms, face-to-face and OPD compare. Often participants’ past experience with other PD programs determined their overall satisfaction with OPD. Teachers commented on their use of Activities and Readings in the Geography of the United States (ARGUS) (AAG 1999), and Activities and Resources for the Geography of the World (ARGWorld) (AAG 2001). While these two programs provided a wealth of resources for teachers to use, the presentation of materials was sometimes misguided. Many teachers who were trained to use the materials in the correct way had great success, while others who were not had to

“cobble something together” and then try to demonstrate the materials for other teachers.

Unfortunately, it did not transfer well with some teachers. One teacher stated:

“I remember when I was at a workshop [and another teacher] had just come back from learning about ARGWORLD and I was excited about it, there were some great resources there, but I never used it, there was still that barrier, um you know to it, and it seems like [*Stars*] brings that barrier down, I mean it’s still on the person to respond and to do to something but it’s just very accessible.”

*Stars* has the potential to really take off “because it’s very simple and easy to deliver.” Teachers exclaimed they wanted to see more resources and it was not something you received at a workshop and filed away when you returned to school. Some teachers also commented that they continue to prefer participating in face-to-face PD as opposed to online approaches. Nevertheless, if face-to-face is not an option, then OPD provides a viable alternative. You are allowed to proceed at your own pace, have the flexibility of time, and can get acquainted with the materials. *Stars* materials, it should be noted, can be presented in a face-to-face or online format. Will face-to-face PD fade away with all of the advancements in technology? Some teachers felt that as more access to technology is gained, and with increasing demands on teachers’ time, the reality is that it might not be necessary to attend face-to-face PD. Face-to-face might slowly phase out. With that being said, face-to-face PD continues to play a vital role in the PD of educators. The researcher feels that in no way will online or hybrid techniques be able to capture all of the unique opportunities afforded by face-to-face PD sessions.

Teachers had varying experiences with OPD. Many had never participated in OPD before, while others had engaged in various OPD programs including webinars, online meetings, and distance learning courses. One teacher commented that they were

not sure if online learning was as effective as face-to-face; however, technical difficulties and not necessarily issues with the content or pedagogy offered by the programs were the main reasons for not being interested in OPD. A program like *Stars*, however, was able to change many teachers' minds in this regard. Teachers felt that they could manage the materials and also had access to project personnel if support was needed beyond the use of the detailed instruction provided by the Facilitator's Guide. To use *Stars*:

“There's support on how to do it, what kinds of activities and questions that would work in a distance situation. So, I really got on board with that and I didn't really expect to.”

The need for a strong facilitator or moderator in a face-to-face or online session utilizing the *Stars* materials was also a point of discussion. Different mediums for PD can be either successful or unsuccessful, and there is a need for pre-planning and being aware of participants' skill levels; for example, if you are going to be using new software, such as Adobe Connect, to conduct an OPD workshop. In this event, these issues may drive teachers way from these types of experiences, and all that would be needed is more awareness on the part of the workshop facilitator.

Many advantages were also afforded by the use of OPD. Often, a face-to-face workshop can be not only time consuming, but also exhausting. By the end of an eight-hour face-to-face PD workshop, as one teacher commented, “you're so tired, you lose a lot at the end of the day.” With *Stars*, however, you have the luxury of splitting up the online session. Two teachers expanded on this concept:

“...you can go and back up if you need to, the materials are there and you don't have to worry about the presenter coming in and having to get everything done in one day. If you specifically have questions about [something] you can also go back through and read about it.”

“You can always go back and look to see the best way of teaching the videos, so you can compare what you did that day to what they did, or the next day this is kind of what I’m looking for, so it’s always there, it’s not like the face-to-face, well yeah they talked about it but did I do it right, you can always go back, and I have to say this is going to be something you can use for years and years. And uh for new teachers, uh all the different strategies, you know now this is what this teacher is doing, I might do the same strategies but I throw in my own techniques so now you have two to compare, or you can go down the hall and watch somebody else and we’re doing the same, like uh KWL, something like that so it gives you another comparison also. And a lot of times when it’s face-to-face or uh we’ve had to look at Marzano’s strategies, he’s got it so, it’s like 2 hours before you find anything that you are actually looking for you have to go through all that stuff. This one’s right here boom and I can see this, I can pick it up really quick.”

These two teachers were fairly explicit in their appreciation for this OPD approach. They are offered an amount of flexibility they have not experienced before. Teachers are able to have access to resources they can pick and choose from with the added benefit of practicing the lessons themselves and returning to the website and materials for additional guidance.

Additionally, some teachers felt that there is no difference from the PD workshops, whether online or face-to-face, they have been previously involved in. Mentioned earlier was the notion that face-to-face and OPD workshops have both advantages and disadvantages, and many times they are not necessarily because of the medium used. The main issues are whether or not teachers will be able to use and apply the resources they are shown into their own classrooms. The quality of the content and the platform being used are key factors in determining success with a particular approach. Online does have the power to be interactive, and often:

“...you’re at home, at your comfort level. Often I’ve found people to be more engaged, ask more questions with the webinars than the face-to-face because I think it’s just that you’re at home, you’re in your space, your office and people, I think, are just more apt to ask questions because it is fairly anonymous...”

Online PD is making headway in the nature of how PD is disseminated, and in today’s world, it is a reality. We have to determine how to keep new and younger teachers involved and engaged, and provide PD in a smooth process that includes more seasoned teachers as well. In particular, for beginning teacher participants in our workshops, they were excited about the online platform and like the idea of viewing the website and materials on their own. As long as other teachers can get them on board, and someone can serve as a gatekeeper, they feel these materials could be a huge benefit to many teachers. A teacher who was hesitant about using OPD materials for himself could not deny the added benefits and the future directions for PD. He commented:

“I think as the next generation of teachers comes out, online with this how it’s been done, they’ll be comfortable with it. They’ll say I don’t want to go face-to-face, I want to do this. A person like me who’s very scared of the computer, I want face-to-face so I can go but the next generation of teachers this isn’t going to be the way it’s going to be done, so I think it’s very forward thinking because um they’re not going to say I’m not going to [a face-to-face workshop] for a week when I can sit at home and do this over a three week period or four week period ... and then as they’ve said, as people get more comfortable with it we will also learn to chat online and ... get to know the person without even seeing them. Uh to me it’s very, very new so it’s kind of scary but for uh the two young ladies they were talking about their classes, they stay in their dorm rooms and do it, so it’s kind of neat, common for them, so for the next generation of teachers, this will be the way it’s supposed to be done.”

The possibilities for PD implementation and dissemination are limitless (Owston, Sinclair, and Wideman 2008). New, available applications make the process to use these new forms of PD fairly simple, easily adaptable, and widely disseminated. New teachers, especially, are adopting these types of techniques on a daily basis.

The goal of OPD and *Stars* is to supplement the existing and effective face-to-face PD methods that have been offered by the Alliance Network for over 25 years. Does OPD have a place in the Alliance Network, how effective can it be in increasing the number of teachers impacted, and who can gain from the incredible resources provided?

One teacher in particular offered the following comments regarding this issue:

“I think *Stars* will add a great dynamic to our organization to our Alliance. We offer some really great face-to-face things now, I think we do that very well, but it’s just limited, there are only so many people, I was at a really big workshop last summer, but I think there was still just maybe 50 people there, there was some great stuff that we did but it was limited to that, this, the limits are just you know getting the word out um and whether you know if it fits people’s schedules, we are giving a lot of opportunities for people throughout our state to do this and I think it’s such a nice contrast to what we already do instead of it being a three day weekend now it’s a couple hours over the course of a month and so that instead of it having to be you know all back-to-back, this gives me time to reflect and incorporate, maybe it can kind of be ongoing throughout the school year a little bit so I can say I did the popcorn thing and they all threw it at Johnny now what do I do? I think it’s just is a unique thing that um will really help fill out what we offer to teachers.”

#### A Real Need Exists for a Hybrid Approach to Professional Development.

Consistent with the literature, teachers are not only willing to accept online approaches to PD, but some actually prefer the development of hybrid methods (Sawchuk 2009; Davis 2011). Because of flexibility of use, hybrid approaches to PD are also often a



necessity (Moe and Rye 2011). Therefore, a final theme that emerged, from these two focus groups, was the development and need for hybrid PD methods in order to meet an even larger cadre of teachers' individual needs. Online and hybrid methods are still relatively new and because of the technical components, all teachers cannot just be expected to get involved right away. At this point in many school districts, face-to-face PD continues to hold great value, often rightly so, and dominates beginning of the year in-service training workshops. And, in fact, many teachers will continue to seek out face-to-face PD opportunities; as Gerbic (2011, 232) states, "teachers will not be replaced with technology ... teachers will continue to have a pivotal role in learning." Could the use of OPD training sessions actually encourage more face-to-face and vice versa? Many participants felt that as new avenues to communication and collaboration among educators become available, all of these different mediums will be used in variety of ways. For example, one teacher commented that teachers could be directed to view the online video components and then implement them into their classrooms. A follow-up face-to-face session in which the teachers meet as a group could ensue in order for the teachers to continue the interaction brought on by the use of these materials. This teacher stated:

"Teachers can get together and say you know let's have a meeting and we can get together and just talk about what's going on and how these lessons or how are you using this or what's going on or what problems did you find and that would encourage the face-to-face back in a smaller group and saying this is what I found."

Online PD can also be used as a recruiting tool. By reaching additional teachers and a broader audience because of online mediums, the potential exists to increase the numbers of teachers involved in the Alliance Network. By attracting individual's

attention with the online materials, participation might increase for additional face-to-face sessions. One teacher commented that face-to-face interactions need to continue, because “teachers are social beings, there’s still that social aspect” to professional learning. Another teacher further exclaimed:

“I’m a firm believer in getting to know people and getting to know your audience, you might not be necessarily able to get that if you’re on a computer doing those things so if you start off face-to-face as you get better you might develop some strategies on how to get these across through distance by getting to know the people that you’re working with and I think that for professional development, that’s where we lack, an effective professional development model in [our state] is the same facilitator who has come in [multiple times before] but she doesn’t remember being there but you remember how dry and dull she was and things like that, I think it’s just you know we can get a lot of different people involved in teaching geography and doing these things like making it appealing to them specifically by getting to know them and it gives us an idea of how much we can do ... how comfortable I am with a computer doesn’t necessarily mean somebody else is comfortable. Getting the [*Stars*] model out there and doing these things on the computer may not be everybody’s ball game so we have to do things differently for each one.

Use of OPD was seen by many as forward thinking. These teachers understand that not many teachers, if any at all, are willing to attend multiple day or week-long workshops; that method is not necessarily feasible anymore. As people become more accustomed to OPD, they will be able transition more effectively to these techniques, even though at this time it is still frightening for many. Commenting on one of the group presentations, one teacher noted that an effective implementation plan was to begin the workshop session with a 10-15 minute introduction to *Stars* and related resource materials, and then proceed with viewing component parts and reflecting. Finally, continuing the interaction and collaboration in the online forum is a good technique to

keep the momentum going. Teachers then have additional time to “go at their own pace, at their own time.” This combination of the two methods is what many teachers are most comfortable with. As one teacher commented:

“I think a combination of the two is really what I’m comfortable with. The face-to-face is more personal uh but yet you have the videos that are available to you that are going to make it you know both ways so I think that the combination is probably what would work best for me.”

Attending a face-to-face workshop initially with a group of teachers allows for community building and excitement to generate around the use of the programs and lessons. Teachers are able to view the programs and:

“...then you go back to your campus and if you still have questions on how that was done you can go back and watch the video again and say ok this is what I did wrong, I forgot to do this, this is a question I could ask, I forgot about that, so it helps you to also solidify and plan for yourself and improve over time but the face-to-face gets you excited but it’s also good to have that resource when you can go back you know it’s there [and available online].”

Developing and using webinars were also offered as a way to bridge the face-to-face and OPD gap. In a webinar, participants are able to ask questions but also return to the resource materials in many cases. Participants can also “tag in whenever you’re at home, if you’re at school, participate at all different times.” Thus, there is an added benefit that is similar to face-to-face, but also offers the accessibility of online resources. All of these attempts to provide PD in multiple formats, using the strengths of both face-to-face and online, allow for a “best of both worlds” approach, especially if participants are dispersed over a large area, and might not be able to attend a conference or workshop by any other means. The capabilities are endless and are often offered for free or at a low cost and can be done synchronously or asynchronously.

## Summary

In sum, these focus groups were held as a way to acquire a range of data that could be examined to create an in-depth picture of the program, its implementation, and comparison to face-to-face, hybrid, and teacher acceptance, all of which provide a deeper understanding of the perceived value of *Stars*. What specifically emerged from these focus groups, however, was the need for a hybrid dissemination approach to PD. A need existed to develop an approach that could meet all teachers' needs regarding increasing their pedagogic knowledge, content knowledge, and pedagogic content knowledge.

### Experimental Situation Three: The Learning Cluster Method (LCM)

Experiment Three, drawing on the responses from Experiments One and Two, was designed in order to test a hybrid dissemination method and answer Research Questions Three and Four: *Are teachers willing to accept and operationalize a new method of professional development called the Learning Cluster Method (LCM), as an extension of online and hybrid training that will be able to reach large numbers of teachers?*, and, *How effective is teacher use of the Learning Cluster Method as a means of developing and enhancing teacher leadership skills?* Two workshops were organized; first, a pilot-test workshop at the Region VI Education Service Center in Huntsville, Texas; second, a workshop was held at the Harte Research Institute in Corpus Christi, Texas. During both workshops, a hybrid PD approach, using both online and face-to-face methods, was presented in considerable detail. The pilot-test workshop was followed by the full implementation of a new dissemination method for geography PD, the Learning Cluster Method (LCM) (formed by teacher experience and preferences in Experiments One and Two). The LCM was quickly seen by teachers as an avenue to increase

dissemination, but also as a means of developing and enhancing teacher leadership skills while developing a community of learners. The LCM gave teachers a chance to become active agents in the geography, social studies, and Earth/environmental science PD process.

### Pilot-Testing the Learning Cluster Method

Held in conjunction with Region VI ESC's Huntsville geography conference, eight teachers participated in a Learning Cluster Method (LCM) pilot-test workshop. The group consisted of five females and three males. Seven teachers taught 9<sup>th</sup> grade world geography and one taught APHG. Average age among the participants was 38 and average years of teaching experience was 10. Teachers' background knowledge in geography ranged from no previous coursework in geography to a major or minor in geography. Only one teacher majored in geography and only one minored in geography. Other majors and minors among the participants included: history, political science, sociology, psychology, political science, government, curriculum and instruction, English, art, and political geography. Five teachers held B.S. degrees and three held B.A. degrees. Master's degrees (M.A. and M.Ed.) were held by three teachers—two in curriculum and instruction and one in history. All teachers held a social studies composite teaching certificate. Prior experience with OPD was split; four teachers had not participated in OPD prior to the workshop, and four did have experience with OPD.

### Teacher Leaders

Table 6.4 reflects teachers' answers to questions revolving around teacher leadership and the LCM. Responses indicate, in general terms, that participants have a

high regard for their responsibility as teacher leaders and are satisfied with the LCM as a means of extending the PD process.

<b>Table 6.4 Creation of teacher leaders and acceptance of the Learning Cluster Method.</b>					
Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
I am proud to be designated as a teacher leader.				5	3
Teacher leaders are essential to continuing professional development.				3	5
Part of my responsibility as a teacher leader is to offer professional development to other teachers.				3	5
Part of my responsibility as a teacher leader is to create other teacher leaders.				4	4
The Learning Cluster Method for professional development is an effective method to develop teacher leaders.				5	3

All eight teachers answered either “agree” or “strongly agree” to the statements about being proud to be designated as a teacher leader; all eight “agreed” and “strongly agreed” that teachers leaders are essential to continuing PD; all “agreed” or “strongly agreed” that part of their responsibilities include offering PD to other teachers and create other teacher leaders; and all eight “agreed” or “strongly agreed” that the LCM is an effective method to develop teacher leaders.

#### Using the Learning Cluster Method and Video-based Professional Development

Additional questions were asked to determine if teachers were encouraged to use the LCM and *Stars* video-based PD in particular, with special attention paid to the effectiveness of each of the component parts (Table 6.5). Seven participants felt that the LCM must include a video-based component and one participant responded “neutral” to

this statement. While the LCM was designed to encompass a hybrid approach to PD, the techniques are flexible and could be used without an online component.

<b>Table 6.5 Encouraging teachers using the Learning Cluster Method to use video-based professional development.</b>					
<b>Questions</b>	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly agree</b>
The Learning Cluster Method must include video/web-based professional development.			1	4	3
The <i>Stars</i> classroom demonstrations are highly effective.			1	5	2
The <i>Stars</i> pedagogic enhancements are highly effective.				8	
The <i>Stars</i> content enhancements are highly effective.				4	4
The <i>Stars</i> instructional materials (lesson plans, etc.) are highly effective.			2	2	4
The <i>Stars</i> Facilitator’s Guide is highly effective.			4	3	1
The website forum can be highly effective as an avenue for teacher interaction and collaboration.		1	1	3	3

Next, participants were asked to respond to whether or not each of the component parts of *Stars* was highly effective. Seven of the eight participants either “agreed” or “strongly agreed” that the classroom demonstrations were highly effective; eight participants “agreed” that the pedagogic enhancements were highly effective; eight participants either “agreed” or “strongly agreed” that the content enhancements were highly effective; six participants “agreed” or “strongly agreed” that the instructional materials were highly effective, while two felt “neutral” about this statement; and four participants felt “neutral” about the statement pertaining to the effectiveness of the Facilitator’s Guide, while three “agreed” and one participant “strongly agreed”—this could be attributed to the fact that during the workshop, an insufficient amount of time was dedicated to the Facilitator’s Guide. As one participant comment: “I did not get an

opportunity to spend much time looking at the facilitator’s guide.” Particularly interesting were the responses pertaining to the statement about the effectiveness of the *Stars* website forum; while six participants felt that the forum could be highly effective as an avenue for teacher interaction and collaboration, one participant disagreed with this statement and another participant gave a “neutral” response. This is puzzling because one of the great values of blogs or forums is the ability to extend PD and provide an opportunity for continued interaction (Brysch and Boehm 2013).

### Developing Alternative Professional Development Methods

Teacher acceptance related to the questions concerning “alternate video-based methods” was uniformly positive (Table 6.6). Teachers answered either “strongly agree” or “agree” to all statements with the exception of two teachers who responded “neutral” to the LCM, including a face-to-face option. Thus, teachers were delivering the message that “alternate video-based PD models need to include both face-to-face and online instruction and that a hybrid option” is highly desirable. These results support earlier research (Brysch and Boehm 2013) indicating that the LCM is an effective and meaningful method for the delivery of PD.

<b>Questions</b>	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly agree</b>
The Learning Cluster Method should include a face-to-face option.			2	3	3
The Learning Cluster Method should include an online option.				7	1
The Learning Cluster Method should include a hybrid option.				2	6

### Learning Cluster Method Observations

Teachers were also asked to add any additional comments or observations about the LCM, and how *Stars* compared if they had previously participated in OPD. One



teacher commented that using the LCM and “all three approaches, face-to-face, online, and hybrid, will reach the most teachers.” Another teacher offered: “I think this is an excellent opportunity for teachers and a much needed addition to traditional forms of professional development both for beginning teachers and those with more experience.” Regarding how *Stars* compared to other OPD, teachers commented that *Stars* was the “best online professional development I’ve experienced in geography” and “I think this is a forum that is currently lacking for teacher professional development as compared to training available in other industries; I consider this an excellent opportunity to contribute to these new approaches.”

At the workshop, all teachers were charged with implementing additional *Stars* workshops prior to the end of the school year (May 2013) (Brysch and Boehm 2013). Only four participants, however, responded to the follow-up survey (50 percent response rate), indicating they had implemented their own *Stars* workshops. This does not necessarily mean that the other four participants did not in some way share the *Stars* resources. Teachers were asked to report back on: 1) their use of any of the *Stars* materials in their own classrooms, 2) how they had shared *Stars* with other teachers in any capacity, and 3) how use of the LCM has led to the development and enhancement of teacher leadership skills. All four participants indicated they had visited the program website in one capacity or another and used one or more of the available *Stars* programs in their classes. The *Water and Agriculture* program and all related video and instructional materials were shown by three of the four teachers. The teachers indicated that the *Stars* program topics and lessons were valuable in helping students prepare for the World Geography End-of-Course (EOC) exam (aligned to the Texas Essential

Knowledge and Skills (TEKS)—curriculum standards in Texas), which was being newly administered in the state of Texas. All participants showed at least one of the content enhancements from the available programs, fulfilling *Stars* program developers’ goal, as this component part can be used as a classroom resource as well. Time seemed to be a major factor in classroom program implementation. Comments from teachers included: “time is always the major factor; current topics in the spring half of our curriculum do not align well with the current modules, which are easier to utilize in the fall semester,” “we have been reviewing for the End-of-Course exam and are trying to hit certain TEKS before the test, I will be able to implement more *Stars* materials next year when I will have the entire year to plan instead of just the 2<sup>nd</sup> semester.”

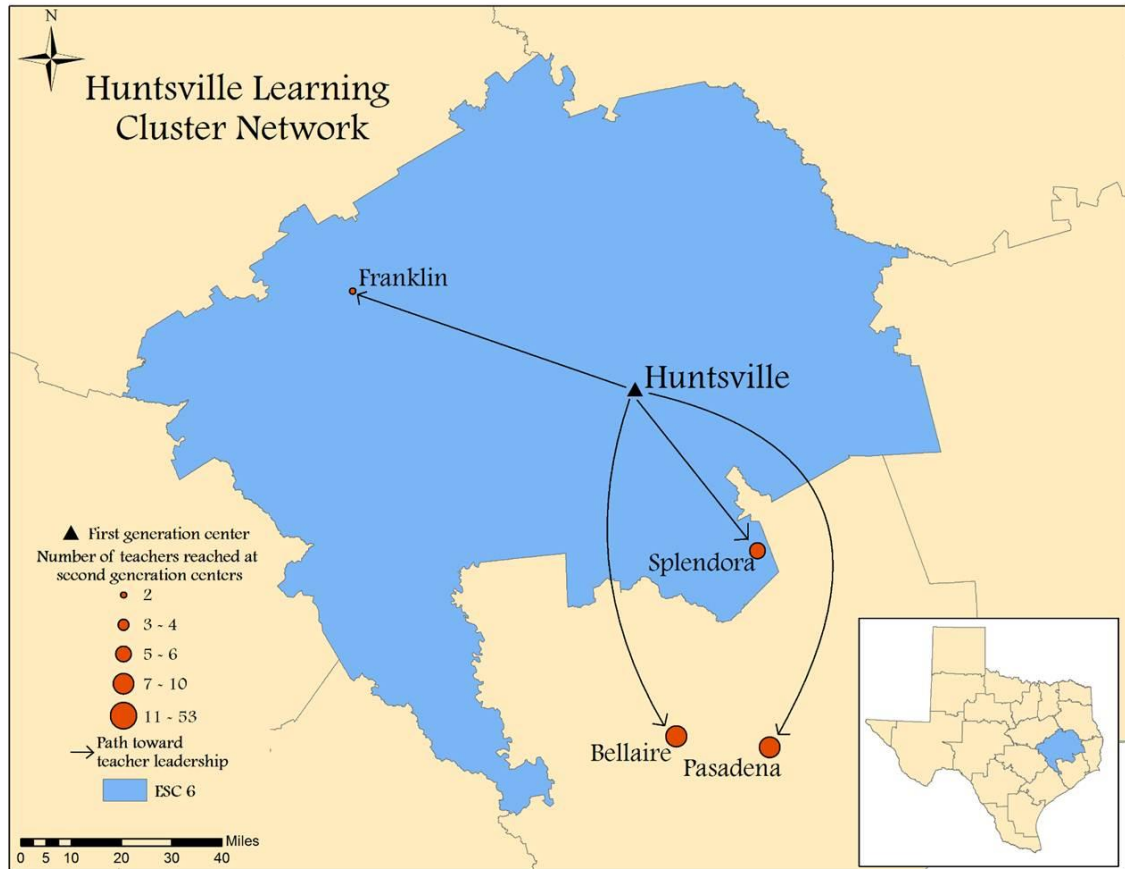
In response to how these teachers have shared the materials, implementation and dissemination strategies varied. Two teachers simply directed other teachers within their department and/or in other departments (e.g., history, science, or agriculture departments) to the *Stars* website, impacting an additional eight teachers in total. One teacher conducted a “mini-workshop” with her geography teacher colleagues, showing the website and selected videos, impacting an additional 10 teachers. Another teacher discussed the *Stars* resources during geography team meetings on campus and with geography curriculum committee members on other campuses in her school district, impacting an additional nine teachers. She also sent reminder emails with links and suggestions for utilizing the modules. Finally, this teacher developed a hybrid PD session to explain and help plan for utilizing the modules in the school district’s curriculum for the next school year and recommended the modules as part of the district’s new teacher in-service for geography teachers. The programs will also be used during summer school

activities with students who were unsuccessful on the world geography EOC. In total, 27 additional teachers were impacted through the LCM, thereby showing the potential for extending PD using this approach (Figure 6.1). None of the participants, however, tracked if any of the teachers with whom they had successfully shared *Stars* “turned around” and shared the materials with additional groups of teachers. This is a task for future research, but one that is beyond the scope of this study.

Finally, the development and enhancement of teacher leadership skills was an important component of the follow-up survey. Responses to successful development of teacher leadership skills among these participants included (Brysch and Boehm 2013): “as the unofficial social studies department head . . . [I] feel like the more leadership opportunities that present themselves, will promote that leadership role,” and “The Learning Cluster Method has given me more experience working with colleagues to improve their classroom instruction.” Taken as a whole, these results indicate the value of the LCM as a means to utilize and develop teacher leaders who are willing and able to become active agents in the PD process.

#### Further Testing of the Learning Cluster Method

Sponsored in conjunction with the Harte Research Institute at Texas A&M University in Corpus Christi, Texas, a workshop was held during June 2013. In total, 14 geography and 9 science teachers participated; 7 males and 16 females. The average age of the teachers was 44, with the youngest teacher being 26 and the oldest 62. Teaching experience among the group ranged from one year to over 25 years; the average was 12.



**Figure 6.1 Huntsville Learning Cluster Network.**

Teaching certificates ranged from social studies composite, science, and physical science; the majority of teachers taught at the high school level (18), four taught at the middle school level, and one teacher taught elementary. Courses taught included world geography, APHG, aquatic science, biology, environmental science, world history, U.S. history, and general science.

Prior to beginning the workshop, a pre-survey questionnaire was completed by each teacher (see Appendix I for pre-survey questionnaire; questions are referenced below). The goal of the survey was to determine how these teachers viewed themselves as teacher leaders and the importance of developing teacher leadership skills. Teachers were also asked why it was important to be a teacher leader and what has most equipped

them in gaining this status. The answers to the open-ended questions also provided insight to the responses given throughout the pre-survey.

### Teachers Viewing Themselves as Teacher Leaders

Overall, a little over three-fourths of the teachers (78%) viewed themselves as teacher leaders and about the same amount (73%) demonstrated this by having previously provided PD to peers in their home district, as well as having shared resources, lesson plans, and other materials with other teachers (100% of teachers). For example, one teacher exclaimed, “I am able to pass on valuable information to other teachers.” Another teacher commented, “teachers can provide effective information to other teachers.” Eighteen teachers answered “strongly agree” or “agree” to being involved in curriculum development in their school district, clearly indicating that this group of teachers was active in this area (see Table 6.7). In response to the statement, “part of my responsibility is to provide mentoring to pre-service teachers/student teachers/early career teachers,” over half of the respondents strongly agreed. A few comments pertaining to this statement included, “to help new teachers become effective and to help in the transition of new teachers to become teacher leaders,” “it is important to model for others,” and “teachers need to be led by teachers with positive attitudes, a hunger for learning, and heart for all students.” A large majority of the teachers also responded with “agree” and “strongly agree” that they encourage other teachers to become teacher leaders. They recognize the impact they may have on other teachers in the profession, whether they are early career or experienced teachers. All teachers indicated an effort to improve their own teaching effectiveness, a clear sign that these teachers want to make sure their teaching pedagogy and strategies used remain relevant in the classroom. All except one teacher

responded that they are proud to be teacher leaders. Taking all of the responses into account (Table 6.7), responses to the first open-ended question, “Why do you feel it is important to be a teacher leader?,” were telling regarding the importance of teacher leaders. Teacher responses included:

“Our profession is always changing, new ideas, new strategies, new technology. In order to keep growing and changing, and keeping with the new resources available to us, it is important to stay on top of things.”

“Being a teacher leader benefits and improves my teaching abilities and enables me to familiarize myself with the latest teaching strategies and content.”

“Once we take the leadership role we make a conscious effort to help others while developing our own professional development. We continue to encourage others as we grow in abilities and talents.”

“To motivate, inspire and connect with each other! Guiding and inspiring others gives teachers fresh ideas and a new discovery of an old topic. It allows us to broaden our ideas and create interdisciplinary learning opportunities.”

“In order to further my profession, I feel it is important to model for others. And assist when able. It makes me better when I can assist others, we both grow.”

“It is especially important for experienced teachers to share best practice lessons and strategies with new teachers.”

Responses to the question, “What do you feel has most equipped you to become a teacher leader?,” also generated some interesting findings. Major themes emerged including experience, benefits to students, openness to new ideas, remaining current with educational trends, mentorship, and administrative support. Significant responses from the teachers included:

“My experience with what does not work. Experience is the best teacher (or so I’m told). Also my access to resources.

My administration is supportive of continuing education and generally supports my efforts to attend a conference training.”

“The encouragement and leadership of veteran teachers.”

“The strongest element that has equipped me to become a teacher leader is surrounding myself with other leaders.”

“Having experience teaching multiple subjects and grade levels has allowed me to see how the Texas Essential Knowledge and Skills and standards connect across subjects and grade levels. This ‘big picture’ viewpoint helps me to see how teachers can work together to achieve common goals.”

“My prior experience, never wanting to make the same mistake twice, learning from my mistakes. Then sharing in a non-judgmental way to bring others ahead.”

“Inspiring classes and ideas to share with others is the foundation for leading others. Being a risk taker and open to learn from others, as well as sharing ideas equips us teacher leaders.”

“Branching out to learn new information, techniques, [and] technologies.”

“My ability to communicate clearly, effectively, and professionally.”

“Infused enthusiasm encourages me to become better educated and share that knowledge to help others. Teaching then does not become the culmination of what we do, but teaching others to teach does.”

The responses from this pre-survey clearly demonstrate the notion that a majority of these teachers take their role as a teacher leader seriously. A responsibility among them is apparent to encourage new teachers, as well as continue to develop their own knowledge and skills related to teaching.

<b>Table 6.7 Viewing yourself as a teacher leader.</b>					
	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly Agree</b>
I consider myself a teacher leader in my home school district.		1	4	12	6
I have provided professional development to my peers in my home school district.	1	5		12	5
I share relevant resources, lesson plans, websites, and other materials with other teachers.				8	15
I participate in school curriculum development in my home school district.			5	9	9
I have demonstrated teacher leadership by presenting at conferences and workshops.	2	5	4	6	6
Part of my responsibility as a teacher leader is to provide mentoring to pre-service teachers/student teachers/early career teachers.	1		1	7	14
I encourage other teachers to become teacher leaders.			7	8	8
I make an effort to improve my own teaching effectiveness.				1	22
I am proud to be a teacher leader.			1	8	14

### Post-Survey Questionnaire

Moving on to the post-survey questionnaire, teachers were asked to respond to statements that dealt with their experience with *Stars*, OPD, acceptance of the LCM as a means for disseminating PD on a more widespread basis and developing an online learning community, and finally, the use of the LCM to serve as a gateway to the development and enhancement of teacher leadership skills (see Table 6.8). Responses to the post-survey questionnaire indicate that: 1) teachers are willing to accept video-based professional development as a means of gaining professional experience and training



because of ease of access and flexibility of use, 2) teacher leadership skills have the potential to be enhanced as *Stars* provides a much-needed platform to develop these skills, and, 3) successful LCM implementation using *Stars* has occurred in multiple Educational Service Centers in the state of Texas alone, which highlights the impact of dissemination. Further explanation is detailed below.

### Teacher Acceptance of *Stars*

Overall, responses from the 23 participants indicate a willingness to accept *Stars* as an avenue of PD and implementation using the LCM; however, while use and participation in OPD continues to rise, many of the participants continue to feel strongly about the continued use of face-to-face PD. All 23 participants “agreed” or “strongly agreed” that the *Stars* classroom demonstrations and pedagogic enhancements were highly effective. Comments given included:

- “Being able to see how other, more experienced teachers teach helps me understand the process.”
- “I believe the classroom demonstration is the most effective part so that teachers can get the ‘big’ picture of what students will learn and how to go about doing it.”
- “As a beginning teacher, I feel I benefit the most from seeing how more experienced teachers facilitate an effective lesson.”
- I am rarely able to go and watch other teachers and found the classroom portion valuable.”
- “Seeing the student/teacher interaction and having the instructional materials are the necessary tools I need to carry out these lessons.”

Regarding the content enhancements, instructional materials, and Facilitator’s Guide, a large majority of participants “agreed” or “strongly agreed” these component parts were highly effective while a few gave a “neutral” response to these statements.

Teachers commented:

- “Having readily available free information for teachers to use is my #1 concern. I need new and improved materials.”

- “I tend to use what I have learned from workshops when the materials are classroom ready.”
- “I like having everything I need in front of me to try out the lessons and then tweak it to meet my needs.”
- “I feel instructional materials are important because I have seen lessons online before but have not been able to use them because the supplemental material is not available.”

All participants “agreed” or “strongly agreed” that *Stars* is an effective method for providing PD and all but one participant, who responded “neutral,” “agreed” or “strongly agreed” that *Stars* also has the capabilities of providing an effective platform for developing and enhancing teacher leadership skills. One teacher commented that *Stars* is a “well rounded program that incorporates all necessary components for teacher leadership development.” Other teachers commented: “I have everything I need to share the resources,” “the necessary tools/materials are provided to conduct a workshop,” “I would like to spend more time navigating the website but I feel I could present to others,” and *Stars* “provides a sense of the importance of leadership skills.”

While teachers were about evenly split in response to the statement of whether they prefer to seek OPD over traditional face-to-face approaches, a large majority of the participants agreed that the online availability of the *Stars* materials was very important. Teachers liked the idea of “24/7” access and mentioned the availability of the “classroom demonstrations and content enhancement videos ... to view at a later time” was an important advantage. Significant to this study was the notion of the ability to extend an initial face-to-face workshop into an online forum, and many teachers commented on this aspect of *Stars*. Comments included the availability of the forum for continued discussion and sharing of ideas, “ability to continue the conversation via the online forum,” and

potential to “connect teachers and ideas from all parts of the world while enhancing teaching strategies and motivating teachers.”

<b>Table 6.8 Participant views of <i>Geography: Teaching with the Stars</i> and online professional development.</b>					
Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The <i>Stars</i> <u>classroom demonstrations</u> are highly effective.				3	20
The <i>Stars</i> <u>pedagogic enhancements</u> are highly effective.				9	14
The <i>Stars</i> <u>content enhancements</u> are highly effective.			1	4	18
The <i>Stars</i> <u>instructional materials</u> (lesson plans, etc.) are highly effective.			2	4	17
The <i>Stars</i> <u>facilitator’s guide</u> is highly effective.			4	6	13
The <u>website forum</u> has potential to be highly effective as an avenue for teacher interaction and collaboration.			2	8	13
I believe that <i>Stars</i> is an effective method for providing professional development.				7	16
<i>Stars</i> provides an effective platform for developing teacher leadership skills.			1	9	13
I prefer to seek out online/video-based professional development over traditional face-to-face approaches.		4	8	5	6

<b>Table 6.9 Teacher acceptance of the Learning Cluster Method.</b>					
<b>Questions</b>	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly Agree</b>
The Learning Cluster Method provides an effective platform for developing teacher leadership skills.				13	10
With explanation, other teachers can use and accept the Learning Cluster Method.				13	10
The Learning Cluster Method for professional development is an effective method to develop teacher leaders.				11	12
The Learning Cluster Method provides an opportunity for early career teachers to develop teacher leadership skills.			1	11	11
The Learning Cluster Method encourages continued collaboration among teachers.			2	11	10
The Learning Cluster Method is an effective method to disseminate professional development.				9	14
The Learning Cluster Method should include a face-to-face option			6	8	9
The Learning Cluster Method should include an online option.			3	9	11
The Learning Cluster Method should include a hybrid option.			4	5	14
A website forum or blog must be included as an avenue for continued teacher interaction and collaboration.			6	6	11

#### Teacher Acceptance of the Learning Cluster Method

Teachers responded to statements pertaining to their acceptance of the LCM and the potential for the development and enhancement of teacher leadership skills, use in an effort to encourage continued collaboration, and whether or not various components (i.e.,

face-to-face option, online option, hybrid option, or online forum) should be included (see Table 6.9). All participants “agreed” or “strongly agreed” that the LCM provides an effective platform for developing teacher leadership skills, and that with well-planned explanation, the LCM could be used by other teachers. All but one participant either “agreed” or “strongly agreed” that the LCM provides an opportunity for early career teachers to develop teacher leadership skills. One teacher commented: “the facilitator’s guide provides step-by-step instructions. This can be very beneficial for those who have never led a workshop.” Other teachers commented on the effectiveness of the development of teacher leaders with the LCM:

- “Teachers are given the chance to take the information back to their school or district and get other teachers involved.”
- “Provides models of ‘star’ teachers.”
- “As new teachers learn the process they then become experts in the process.”
- “Builds confidence with a structured format.”
- “A vehicle for experienced teachers to share their experiences.”
- “It provides an opportunity not usually afforded by teachers.”

All teachers “agreed” or “strongly agreed” that the LCM is an effective method to disseminate PD. This can, in part, be explained by the use of the online forum that encourages continued collaboration among participants. Almost three-fourths of the teachers responded “agree” or “strongly agree” that the LCM must include an online forum. Further, comments included:

- The LCM is “an effective way to spread learning across a broader spectrum.”
- “This is the future and upcoming teachers are raised on electronic/web-based materials.”
- “It can traverse large distances and you can include more people.”
- The LCM has potential to reach “a much broader audience.”

- “It greatly widens the availability of more teachers/educators served broadening the scope of what can be learned, less time, more information.”
- “The spread of information to other schools increases the exposure thus leading to a greater conversation via the online forum.”
- “Ideas can sprout and bloom quickly with immediate feedback.”
- “It provides a platform for continuing PD.”

A majority of the participants either “agreed” or “strongly agreed” with every statement regarding the inclusion of a face-to-face, online, and/or hybrid approach when using the LCM. This is a consistent positive response and clearly identifies the potential of this new method of PD in geography education.

#### Developing Alternative Professional Development Methods

Next, teachers were asked to respond to statements concerning the development of alternative methods of PD (see Table 6.10). Responses were uniformly positive to statements concerning the reality of transitioning from face-to-face to online and/or hybrid PD. Over half of the participants had experience participating in a variety of online or hybrid PD, either in a workshop capacity for continuing PD, webinars, or online courses associated with a degree program. As teachers’ schedules become busier, 85 percent “strongly agreed” that alternative forms of PD are a reality in the rapidly changing 21<sup>st</sup> century.

All participants “agreed” or “strongly agreed” that alternative forms of PD offer flexibility, continued use, convenience, and easier accessibility. Feedback associated with the use of alternative forms of PD included:

- “I can do the work at my own pace.”
- “Online worked so much better for me because I live an hour away from the nearest university, I work long hours, and found online to be convenient and allowed me to work at my own pace.”
- “In an online webinar, you can participate at your own convenience.”

<b>Table 6.10 Teacher responses to developing alternative professional development methods.</b>					
<b>Questions</b>	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly Agree</b>
Teachers must be willing to accept alternative approaches to professional development, including online/hybrid workshops.			1	9	13
As teachers' schedules become busier, alternative forms of professional development are a reality in the rapidly changing 21 <sup>st</sup> century.				3	20
Alternative forms of professional development offer flexibility, continued use, convenience, and easier accessibility.				2	21
Alternative forms of professional development remove distance barriers and have potential to reach underserved/rural areas.				4	19
I prefer to seek out online/video-based professional development over traditional face-to-face approaches.	3	1	7	5	7

Alternative forms of PD also have the potential to remove distance and locational barriers and reach underserved areas; 17 percent “agreed” and 83 percent “strongly agreed” with this statement. Teachers added: “I come from a small campus and our charter is based in another city. I think [online professional development is] more convenient for our school” and “I’m unable to attend many regular PD because of the time frame. Online PD allows more flexibility.” Somewhat consistent throughout all responses, however, was that while teachers agree that the need for OPD methods is a reality, some are hesitant to participate and continue to favor face-to-face PD; as one participant exclaimed, “I prefer

face-to-face trainings.” Nevertheless, the general tone from teacher responses reinforces the literature regarding the increase in available alternative methods of PD and teacher acceptance of these methods. Over half of the participants “agreed” or “strongly agreed” that they prefer to seek out online/video-based PD over traditional face-to-face approaches, as evinced by the comment, “when possible I use online. However, not everything is offered online so I must still go to face-to-face, I’d prefer 100% online.”

### Development of Teacher Leaders

Teachers were also asked to respond to statements about the development of effective teacher leaders and what role they play in this development (see Table 6.11). All participants either “agreed” or “strongly agreed” that mentoring is an effective strategy in the development of teacher leadership skills. Mentoring of early career teachers is seen as a critical component in career development and has the potential to deter the problem of attrition. Teachers overwhelmingly agree that the way to achieve teacher leadership skills is to be part of a leadership team. Reaffirming the notion that the development of teacher leaders begins with teachers who are able to model effective leadership roles and therefore pass their skills on to other teachers, participants uniformly responded “agree” and “strongly agree” to statements pertaining to the implementation of PD workshops as an avenue to acquiring teacher leadership skills. Therefore, teacher leaders are essential to continuing and extending the PD process. Additional comments from teachers included: “it is important to observe positive examples,” “great leaders are those with a desire to learn and grow—then share with others,” and a teacher leadership approach “is less intimidating than administrative leadership.” Overall, participant responses indicate a strong need to enhance their own leadership skills, and “pay it forward,” recognizing



their role in the development of other teachers and colleagues, a central component in the nature of the school environment.

**Table 6.11 Developing effective teacher leaders.**

Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Mentoring is an effective strategy to develop teacher leadership skills.				10	13
Being part of a leadership team is important in developing teacher leadership skills.				6	17
Teacher leaders are essential to continuing professional development.				8	15
Offering professional development to other teachers is a way to develop leadership skills.				6	17
It is important to recognize individual teacher differences.			1	5	17
A teacher leader’s responsibilities include creating other teacher leaders.			4	7	12

Learning Cluster Method Implementation

At this workshop, a significant amount of time was dedicated to allowing this group of teachers to develop their own workshop plan to implement back in their home school district or prepare for a presentation in another avenue, such as at a conference. In order to determine the success of this LCM workshop, a follow-up survey was sent to participants during the fall of 2013. The researcher felt positive about the time-frame of the workshop because holding it in June 2013 gave a significant amount of time for participants to be able to contact district administrators and principals in order to be able to present at the beginning of the school year’s round of PD activities that are mandated by districts. Developing and implementing additional workshops back in their home school districts, or in another capacity, was a required commitment for participation in

this workshop. Eleven out of twenty-three teachers returned the follow-up survey and, so far, seven reported they had implemented a workshop. These teachers presented to other groups of teachers, including those in their social studies (geography, U.S. history, world history) and science (physical, aquatic science, biology) departments, as well as agriculture. Numbers of additional teachers reached ranged from 4-32, for a total of 66, between the 6<sup>th</sup> through 12<sup>th</sup> grade levels (Figure 6.2). An analysis of the project website shows a clear increase in the number of visits following the LCM workshops, indicating the potential of the LCM to reach a broader audience and increasing numbers of teachers (see Table 6.12). These numbers reflect the slow increase of acceptance of an innovation and then “take off.”

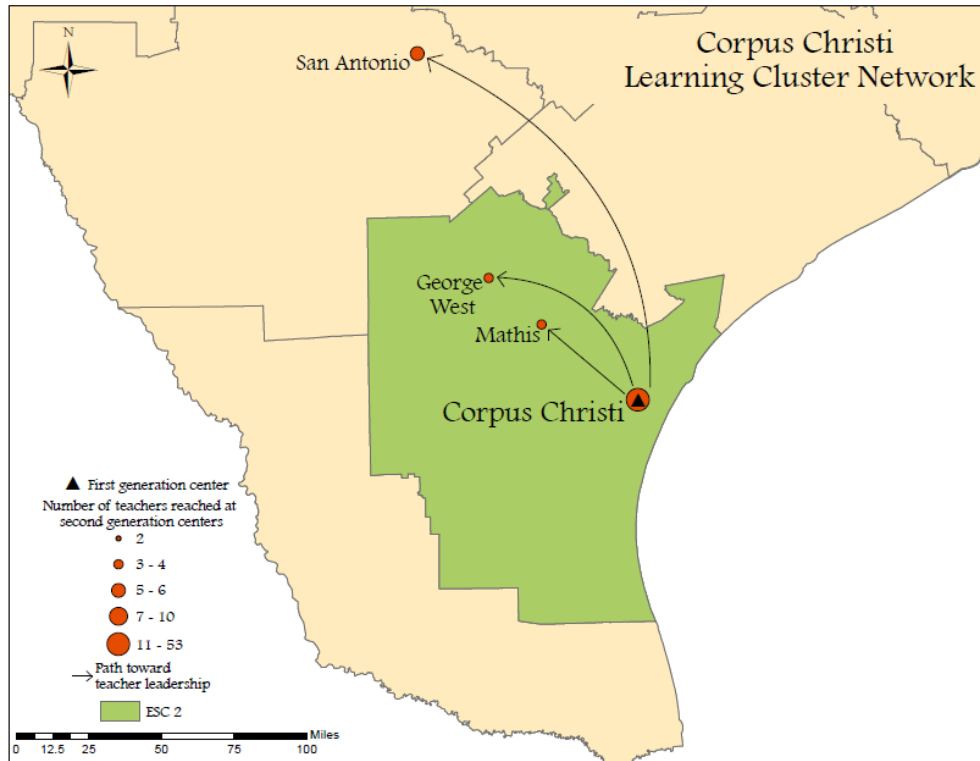
<b>Table 6.12 Website traffic history and LCM workshops.</b>	
<b>Year</b>	<b>Total Visits to Website</b>
2009 Initial Website Launch	172
2010	839
2011	957
2012	1,839
2013 (January to May) – <b>Following February Workshop</b>	<b>2,599</b>
2013 (June – December) – <b>Following June Workshop</b>	<b>3,983</b>
Total 2009-2013	<b>7,790</b>

While only seven teachers had implemented a workshop, this should not be seen as a negative, as this does not necessarily mean more teachers did not conduct a workshop or share *Stars* resources. Various reasons given by those who had not implemented a workshop included, “I was really excited while attending the workshop, but after returning to my classroom, I haven’t been able to find the time to re-visit the website” and simply, “I forgot.” Also, many of the teachers who reported they had not conducted a workshop mentioned that topics addressed in the currently available *Stars*

programs were not covered during the fall semester, and instead would be covered in the spring. Many teachers responded that they would be sharing the resources next semester. One teacher in particular commented: “LCM can be effective and I actually am taking a class where one of the requirements is to design and present a staff development workshop and this has the potential to meet this competency.” Potential exists, as demonstrated through all responses—even those who had not implemented a workshop yet—for continued use of the LCM.

The final goals of the LCM pertained to the formation of an online learning community through the use of the online forum and the development and enhancement of teacher leadership skills. Responses from teachers indicate general excitement about developing teacher leadership skills. As one teacher mentioned, “I loved that I was able to work collaboratively with other teachers and then able to teach my fellow colleagues what I had learned.” Other teachers added the following comments pertaining to the development of leadership skills:

- “I loved being able to share the program and I cannot wait to tell people how it worked in my classroom.”
- Conducting a workshop “has allowed me to share good practice/materials with other teachers so they can become better teachers.”
- Since conducting a workshop, “other teachers have now come to me asking about additional lessons and assignments I may be able to help them with.”

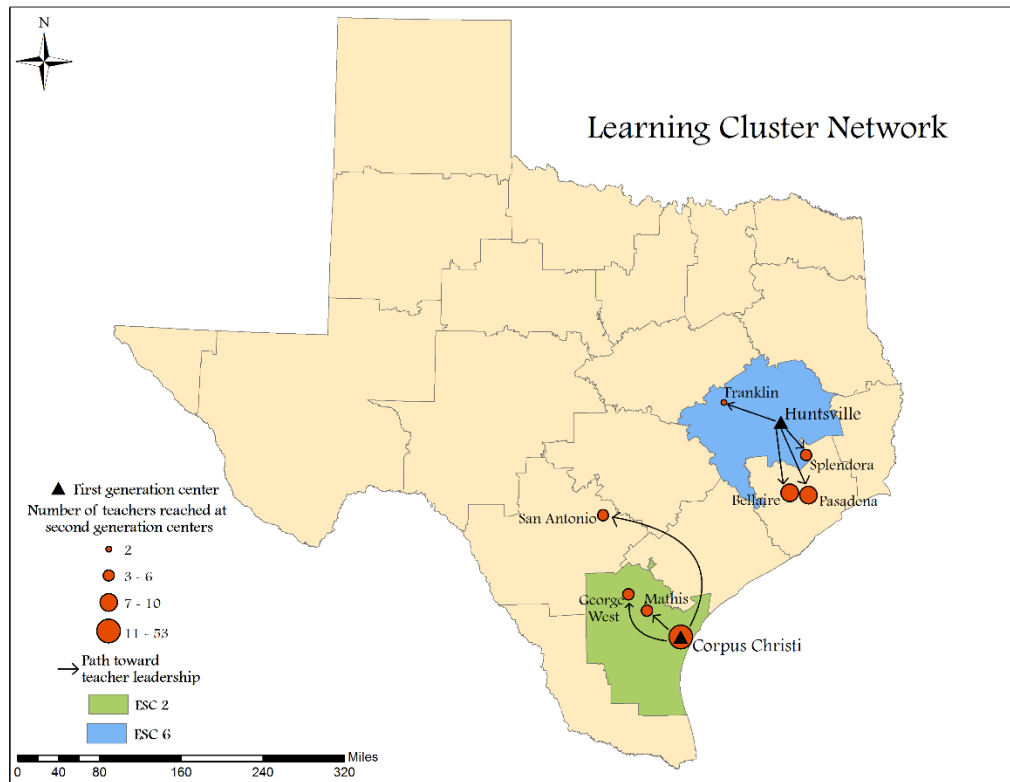


**Figure 6.2 Corpus Christi Learning Cluster Network.**

Summary

While the literature relates hybrid PD systems and the potential to develop leadership skills, it is also clear that these leadership characteristics are difficult to form and take a considerable amount of time to become mature. An attempt was also made by the researcher to stimulate activity in the online forum; however, participation remained uneven. Concurrent with research on the use of online forums in other subject areas, it was a rather difficult task to get teachers involved in this capacity. In the Corpus Christi workshop, teachers were very excited about developing teacher leadership skills and a community of learners, but the reality of getting such networks in place takes time. Looking into whether or not any additional workshops using *Stars* will be conducted and encouraging continued interaction through the use of the online forum within the next six

months, however, is beyond the scope of this dissertation, as developing an online learning community is a process that usually takes several years to accomplish. Overall, the responses to this implementation workshop indicate that teachers are willing to accept alternative methods of PD, as clearly demonstrated in the additional LCM workshops implemented by these teachers (Figure 6.3). *Stars* provides readily available materials that can be used and accessed by teachers, and the LCM is successful in helping teachers to develop and enhance their leadership skills. Early adoption suggests that implementation will continue.



**Figure 6.3 Learning Cluster Network.**

## CHAPTER VII

### Conclusions

This dissertation research reflects a remarkable process of understanding and learning about how teachers react and feel about online professional development (OPD) techniques. This study spanned three and a half years and involved five different professional development (PD) workshops. It is safe to say that much of the research was used as a formative evaluation of the original study focus, the OPD series known as *Geography: Teaching with the Stars (Stars)*. But that was just the beginning; soon, incremental learning changed the nature and extent of the research task, and new research questions emerged. It seems appropriate to direct your attention to the “Synergistic Findings” section of this conclusion for a complete survey of how cumulative understanding extended and enriched this research process. In the meantime, answers to the four main research questions of this dissertation follow:

#### Research Question One

The literature in math, science, and language arts education is filled with studies in which teachers have accepted and adapted to OPD. It was fortuitous that in 2009, the Grosvenor Center for Geographic Education was involved in the production of *Stars*. This multi-program series offered the opportunity for research on how geography and environmental science teachers would accept OPD.

A two-day comparative analysis workshop in the summer of 2010 was used to test Research Question One of this dissertation research: *To what extent are teachers willing to accept an OPD approach in lieu of the traditional face-to-face method, which has dominated pedagogical and methods courses for the past several decades?* Essentially,

18 teachers participated in a workshop using the *Globalization* program in which both face-to-face and online methods were used. All aspects of the online *Stars* program were replicated as closely as possible before the teachers were asked to render honest opinions of the comparative value of the traditional form of PD versus the more modern web-based approach in terms of each of the component parts. Clearly, teachers find OPD equal or better than the traditional face-to-face method. They appear ready to accept and adapt to OPD, with some teachers still interested in the benefits of face-to-face training.

It is safe to interpret teacher comparisons as being positive about a shift in geography education to OPD. Great interest still exists in participating in the professional interaction a face-to-face workshop offers, but the ease of continued access to PD materials provided by an online delivery system holds great appeal. This is, no doubt, a partial reflection of how important modern information technology and other avenues of acquiring resources through electronic transmissions have become in shaping changes in teacher practice and the subsequent impact on student learning.

### Research Question Two

The 2010 workshop clearly indicated that teachers wanted to retain some of the positive aspects of face-to-face training when transitioning to online methods. The following statement sums up teacher responses after the 2010 workshop:

“While face-to-face workshops should in no way be replaced by online professional development, it is clear that all of the surveyed groups are ready to accept the video-based professional development series, *Geography: Teaching with the Stars*, as an alternative transmission strategy and, as a supplement to face-to-face professional development in summer workshops and institutes” (Boehm et al. 2012, 50).

This clear statement guided the research protocol in order to answer Research Question Two: *To what extent are teachers willing to adapt to a hybrid approach to PD that combines online with face-to-face training?*, two workshops—one in Iowa and one in Texas—were organized to answer this question. If teachers were still interested in the qualities of both approaches to PD, what guidance would be drawn from this analysis?

Teachers clearly wanted to keep their footing in face-to-face methods but wanted to weave in OPD to broaden dissemination and reach underserved teachers. They also believed that a hybrid approach would work well within the existing Network of Alliances for Geographic Education, partially supported by the National Geographic Society. What emerged from these two workshops was a teacher-generated hybrid model of PD that began with face-to-face methods and was substantially extended with qualities provided by online delivery systems.

### Research Question Three

As a response to the results from the Iowa and Texas workshops, and the clear interest in a hybrid PD approach by teachers, the Learning Cluster Method (LCM) was developed (Brysch and Boehm 2013). The LCM, a hybrid PD technique, provides an avenue for a “best of both worlds” approach. The Grosvenor Center publication advertises that the main attributes of the LCM are to encourage:

- the use of a hybrid approach to PD;
- the development and enhancement of teacher leadership skills;
- widespread dissemination of the PD message to a greater number of participants and additional cohorts;
- the development of an online learning community to continue and sustain interaction and collaboration among participants following an initial face-to-face workshop; and
- teachers to become active agents in extending the PD process.



These attributes and the method itself were tested in two workshops—one at an Education Service Center (ESC) in Huntsville and a second at the Harte Research Institute at Texas A&M University in Corpus Christi—in order to answer Research Question Three: *Are teachers willing to accept and operationalize a new method of professional development called the Learning Cluster Method (LCM), as an extension of online and hybrid training that will be able to reach large numbers of teachers?*

Teacher responses were uniformly positive about the LCM. The method was seen by teachers as offering the best aspects of both face-to-face and OPD. They found the LCM to be an excellent vehicle for developing second-generation teachers and led PD workshops back in their home school districts. Teachers saw the LCM as a dynamic way to spread the PD message to other teachers. By using the LCM, teachers were able to become active agents of change in the overall system of teaching and learning.

#### Research Question Four

In the Huntsville and Corpus Christi workshops, teachers were challenged to use the LCM as a means of developing and enhancing teacher leadership skills. The first part of Research Question Four, *How effective is teacher use of the Learning Cluster Method as a means of developing and enhancing teacher leadership skills?*, was addressed when teachers were given the task of developing their own implementation plan; that is, their own PD workshop strategy for when they returned to their home school districts. While follow-up response to this type of teacher leadership experience has shown that only about half of the teachers conducted their implementation plans, this should not be seen as a negative, as many teachers indicated they were planning to conduct a workshop during the second semester of the school year (spring 2014). It was apparent, however,

that teachers who had implemented *Stars* saw themselves transition into leadership positions that not only benefited themselves, but other teachers and the wider school community. A second part of this research question involved the creation of an online learning community through the use of the online forum; however, participation in the forum has remained low and past studies have shown that formation of these online learning communities takes a significant amount of time because the creation and maintenance of such a forum is a multi-year task. Research on the effectiveness of such a forum is beyond the scope of this dissertation.

Consistent with recommendations provided by the Geography Education Research Committee of the Road Map Project (Bednarz, Heffron, and Huynh 2013), this study provided a first step in a longitudinal analysis of the OPD series, *Geography: Teaching with the Stars*. Research should continue using the methods and research design presented here and be applied to large-scale sample populations. Only then, will research on effective and meaningful PD be furthered so that teachers may have access to high-quality PD that meets their needs.

### Synergistic Findings

As is often the case in a major research project, new information and new findings emerge, often in an unexpected manner. This research began in 2010 as an attempt to gauge how willing teachers were to accept OPD in geography and environmental science. It was an outgrowth of the Grosvenor Center for Geographic Education's development of the OPD series, *Geography: Teaching with the Stars*. While the literature yielded studies in math, science, and language arts as having to do with teacher acceptance and use of OPD, little was being done in the world of geography education. Thus, this dissertation

research began with a single research question: *To what extent are teachers willing to accept an online professional development approach in lieu of the traditional face-to-face method, which has dominated pedagogy and methods courses, workshops, and summer institutes for the past several decades?*

This question has been addressed and answered in this study (see Experimental Situation One in the Analysis Chapter), but in the course of investigation, discoveries were made dealing with the nature of PD, teacher attitudes, and new methods of delivery, all of which have made the results of this research broader and more useful for the sub-discipline of geography education.

### Incremental Learning

Five workshops were organized to carry out the research in this study. They were not identical. As each workshop was completed and as teachers were surveyed, incremental learning took place. In the first workshop, called Experimental Situation One, it was clear that teachers were prepared to accept OPD, but it was also clear that they did not wish to give up the advantages of the traditional face-to-face approach. Thus, when Experimental Situation Two was organized, it was arranged to address the second research question: *To what extent are teachers willing to adapt to a hybrid approach to professional development that combines online with face-to-face training?* This research question, and the workshop that was organized to address it, was designed based on the findings in the 2010 workshop. In other words, incremental learning pushed this research into new areas and in so doing has made the findings more robust, even opening up new policy considerations for the nature of PD in geography education in the future. Thus,

incremental learning has served almost as a formative dynamic in the research design for this dissertation.

### Hybrid Approach

The incremental learning process from Experimental Situation One informed the organization of subsequent workshops and data collection procedures. By 2012, results from the workshops held in Iowa and Texas made it clear that teachers were interested in some type of hybrid approach that combined the best features of OPD with the more attractive aspects of face-to-face training. Teachers were then charged with transferring their interest in hybrid PD to the development of their own PD workshops and reach out to other teachers back in their home school districts. Data collected in these two workshops cemented the thinking about how teachers were attracted to a hybrid approach and what some of the advantages were when compared to a strictly online approach to PD.

### The Learning Cluster Method (LCM)

Incremental learning from and within these two workshops led inexorably to the creation and refinement of the Learning Cluster Method (LCM) as a sophisticated answer to teachers' requests for a functional hybrid method of PD in geography, social studies, and Earth/environmental science.

The LCM combines online and face-to-face training methods, using a variety of online resources. This hybrid approach is a flexible process that advances and extends teaching and learning at all grade levels. Specifically, the LCM is structured around the use of an online forum(s) within a PD workshop or institute. The LCM was not even a part of the original research design for this study, but it became an obvious extension of

the research and the incremental learning that took place while carrying out data collection procedures, beginning with the formation of the idea following Experimental Situation Two, and resulted in the development of the third research question: *To what extent are teachers willing to accept and operationalize a new method of professional development called the Learning Cluster Method (LCM), as an extension of online and hybrid training that will be able to reach large numbers of teachers?*

### Teacher Leadership

The workshops that took place during 2012 elevated participating teachers into a leadership role. They assumed this leadership role by asking for a PD model that was hybrid, and flexible, and that had the capability to reach large numbers of teachers. They also suggested a more active leadership role for teachers that would be involved in this type of PD at the next level which would take place at the home school district or at state, regional, or national professional conferences. These teachers played a leadership role by encouraging, through their comments, the fourth research question for this study: *How effective is teacher use of the Learning Cluster Method as a means of developing and enhancing teacher leadership skills?*

### Teachers as Active Agents in the PD Process

A final comment about some of the extension from this research has to do with “teachers as active agents of change.” Traditionally, teachers’ involvement with PD is a one-way affair. They attend a workshop at a service center or they engage in a half-day or one-day workshop at their schools. Most often, the leader of these workshops is an administrator or an “expert” provided by the school district or the education agency.

Frequently, the content focus of the workshop may not even be in the teacher's subject area.

Once teachers get involved in the Learning Cluster Method (LCM), they immediately become "active agents of change." They are a part of a learning community that involves their content areas and their professional assignment. Beyond that, they have agreed to help other teachers, thus enhancing their leadership skills. As "active agents," a teacher involved in the LCM network can share curriculum, can demonstrate effective pedagogy, and can engage in a continuing learning community that will strengthen the geography education network in an active manner.

## APPENDIX SECTION

### APPENDIX A

#### Consent Form for Survey Questionnaire Participation 6-12-13

Teacher satisfaction surveys, focus groups, and interviews are quantitative and qualitative data gathering techniques. These particular techniques are part of an ongoing mixed methods (quantitative and qualitative) research project we are undertaking to evaluate teacher satisfaction and the effectiveness of the professional development series, *Geography: Teaching with the Stars*, developed by the Grosvenor Center for Geographic Education. Our notes and any type of information collected through this survey will be used only for the purpose of writing the reports(s) for this project. Reports generated based on this data will be submitted for publication in various academic journals.

By signing this form, you acknowledge that your participation in this project is voluntary. You are free to withdraw your authorization and discontinue participating in this study at any time. There will be no consequences for you.

You understand that you are free to answer all or none of the questions posed to you, and provide only the information that you feel is appropriate or relevant to this project. Your real name will not be disclosed in any reports or transcriptions of the interviews. Responses given will remain anonymous, and a pseudonym will be used in the reports.

If you have any questions about any aspect of this project, please contact Carmen Brysch, [cb1404@txstate.edu](mailto:cb1404@txstate.edu).

Remember, your responses will remain confidential. This research has been approved by Texas State's Institutional Review Board: EXP2013N4896.

Please sign this form and keep a copy for your records. Thank you for your participation.

\_\_\_\_\_  
Signature of participant giving consent

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature of researcher(s) asking for consent

\_\_\_\_\_  
Date

APPENDIX B

**Regional Affiliates Training – Texas State University-San Marcos  
Geography: Teaching with the Stars  
July 22, 2010**

This survey is designed to solicit your opinions about the effectiveness of *Geography: Teaching with the Stars* as an instrument of professional development, and particularly how well it compares to face-to-face training. This survey is not designed to measure content learning; rather, we are looking at the efficacy of the *Stars* approach to professional development. Please compare the effectiveness of the following components in both professional development formats.

Components	Face-to-Face Approach			Stars Approach	
<p><b>Classroom Demonstration</b> – Shagufta Ellam’s classroom demonstration of best practice strategies and lesson plans.</p>	Much Better	Somewhat Better	Equal	Somewhat Better	Much Better
	Comments: _____				
<p><b>Pedagogic Enhancement</b> – Mentor teacher’s comments on the best practice strategies used by Shagufta Ellam.</p>	Much Better	Somewhat Better	Equal	Somewhat Better	Much Better
	Comments: _____				
<p><b>Content Enhancement</b> – Bridgestone/Firestone case study.</p>	Much Better	Somewhat Better	Equal	Somewhat Better	Much Better
	Comments: _____				
<p><b>Instructional Materials</b> – Lesson plans used by Shagufta Ellam on globalization.</p>	Much Better	Somewhat Better	Equal	Somewhat Better	Much Better
	Comments: _____				
<p><b>Facilitator’s Guide</b> – Instruction on how to implement a professional development workshop.</p>	Much Better	Somewhat Better	Equal	Somewhat Better	Much Better
	Comments: _____				
<p><b>Online Interactive Forum</b> – Forum for teachers to share ideas, promising resources, and ask questions.</p>	Much Better	Somewhat Better	Equal	Somewhat Better	Much Better
	Comments: _____				



## APPENDIX C

### Focus Group Questions Summer 2012

1. What is the perceived value of the *Stars* professional development program?
2. Please describe differences and similarities you have observed between online and face-to-face professional development delivery methods.
3. Describe the perceived value of the *Stars* instructional materials, including all print materials, such as the lesson plans, activity sheets, the Facilitator's Guide, and the web-based forum.
4. In what ways would you incorporate the videos and/or supplemental materials into a workshop?
5. How useful do you feel *Stars* would be in reaching underserved/remote areas?

## APPENDIX D

### ***Geography: Teaching with the Stars* Consent and Demographic Survey-Iowa**

**August 2012**

I would like to thank you for your participation in the focus group held at UNI this past June. I was able to collect invaluable information as part of an ongoing research project to determine the efficacy of *Geography: Teaching with the Stars*. Your focus group responses may be used for research purposes only and will be kept confidential. The research has been approved by Texas State's IRB: 2012W2133 and poses no risk to participants. By clicking "agree" below you indicate your participation in this ongoing research effort. You will also be directed to fill out some information pertaining to your teaching background. This should take 3-5 minutes or less to complete. Thank you for your time.

1. Please list your academic degree(s) (institution, degree, major, minor, year).
2. Please list your current teaching position (subject(s) taught) (teacher, supervisor, etc.).
3. Please list your years of teaching experience.
4. Please list all classes you have taught in the past.
5. Please indicate your age range:
  - 21-25
  - 26-30
  - 31-35
  - 36-40
  - 41-45
  - 46-50
  - 51-55
  - 56-60
  - 60+

## APPENDIX E

### **Professional Development in Geography: An Online and Face to Face Approach February 2013**

The Grosvenor Center for Geographic Education, in conjunction with the Educational Service Center Region VI Geography Conference, will be hosting a half-day professional development workshop focusing on a video-based, online professional development series, *Geography: Teaching with the Stars (Stars)* ([www.geoteach.org](http://www.geoteach.org)). This workshop will focus on modeling best practice teaching strategies and conceptualizing these practices related to geography content, while developing teacher leaders who are able to train other teachers on using *Stars* in their home districts (Learning Cluster Method approach). Therefore, workshop facilitators, Dr. Richard G. Boehm and Carmen Brysch of Texas State University, are seeking highly qualified and experienced 9<sup>th</sup> grade world geography teachers. Familiarity and interest in the potential of online professional development should be a qualification for participation in this workshop.

An important component of this workshop will be to evaluate this type of professional development approach. Participants will be asked to fill out a post-survey questionnaire. All information obtained will be kept anonymous and a consent form will need to be signed and returned prior to participation in the workshop.

#### Outline of workshop:

8:30-9am - Introduction, background on 1) face-to-face professional development in geography, 2) an online alternative, and 3) a hybrid approach.

9-9:45am - Review *Globalization* program

9:45-10:30am - Review *Water and Agriculture* program

10:30-11am – Test and discuss the use of the online forum

11-11:45am – Develop implementation plans, discuss operation of the “Learning Cluster Method”

11:45-12pm – Post-Survey Questionnaire

If you are interested in this workshop, please contact Carmen Brysch:

[cb1404@txstate.edu](mailto:cb1404@txstate.edu) or 512-245-1823.

APPENDIX F

**Learning Cluster Workshop in Geographic Education  
Education Service Center VI  
Huntsville - February 8, 2013**

1. Create teacher leaders, acceptance of Learning Cluster Method

Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
I am proud to be designated as a teacher leader.					
Teacher leaders are essential to continuing professional development.					
Part of my responsibility as a teacher leader is to offer professional development to other teachers.					
Part of my responsibility as a teacher leader is to create other teacher leaders.					
The Learning Cluster Method for professional development is an effective method to develop teacher leaders.					

2. Encourage teachers using Learning Cluster Method to use video-based professional development.

Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
The Learning Cluster Method must include video/web-based professional development.					
The 'Stars' classroom demonstrations are highly effective.					
The 'Stars' pedagogic enhancements are highly effective.					
The 'Stars' content enhancements are highly effective.					
The 'Stars' instructional materials (lesson plans, etc.) are highly effective.					
The 'Stars' facilitator's guide is					

highly effective.					
The website forum can be highly effective as an avenue for teacher interaction and collaboration.					

3. Developing alternative video based models: face-to-face, online, hybrid.

Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
The Learning Cluster Method should include face-to-face option.					
The Learning Cluster Method should include an online option.					
The Learning Cluster Method should include hybrid option.					

4. Please write any comments or observations you may have on this Learning Cluster workshop.

5. Have you previously viewed or been involved with the production of an online or video-based professional development program? (please circle)

Yes No

6. If yes, how does “Geography: Teaching with the Stars” compare?

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7. “Geography: Teaching with the Stars” is a multi-program series. Would you be willing to participate in another “Stars” professional development session for CPE credit? (please circle)

Yes No

Contact information: -

---

Undecided

Please explain:

---

Degrees(s) earned (circle all that apply):

BS    BA    MS    MA    PhD

Major: \_\_\_\_\_

Minor: \_\_\_\_\_

Please list all subjects you are certified to teach.

---

---

What grade level(s) do you currently teach?

---

What courses do you currently teach?

---

---

How long have you been teaching?

< 2 years

2-4 years

5-11 years

12-25 years

25+ years

Gender:

Male

Female

Please circle your age range:

21-25

26-30

31-35

36-40

41-45

46-50

51-55

56-60

60+

School district information:

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## APPENDIX G

### Huntsville Follow-Up LCM Implementation Survey June 2013

Dear Teacher Leaders,

You are receiving this email because you attended our session introducing the “Learning Cluster Model” concept at the Huntsville ESC VI Geography Conference held on 2-8-13. A major requirement for participation in this workshop was to continue the Learning Cluster Method and implement *Geography: Teaching with the Stars* back in your home district or in another capacity by June 2013. I am writing to ask you to fill out the questionnaire below regarding implementation and the development of teacher leadership skills and reply directly to this email. This survey should take no more than 10 minutes to complete. Please answer honestly; even if you have not been able to implement *Stars* in any way so far, it is beneficial to know barriers that impede continued implementation. **Please answer all questions and sub-questions and return to me, at [cb1404@txstate.edu](mailto:cb1404@txstate.edu), by Tuesday, June 15, 2013. If you have any questions, do not hesitate to contact me.**

The first and second questions are in reference to **how you, yourself, have used any of the *Geography: Teaching with the Stars* materials ([www.geoteach.org](http://www.geoteach.org)) in your own classroom.**

1. Have you visited the *Stars* website since the 2-8-13 workshop? (please answer yes or no): \_\_\_\_\_
  - a. What was your reason(s) for visiting the website?
  - b. Please list main reason(s) for not visiting the website.
  - c. Did you download any materials (lesson plans, etc.)? yes or no; please list materials you downloaded (please be program-specific).
  - d. Please list main reason(s) for not downloading materials.
  - e. Did you download or view any of the videos? Yes or no; please list which videos you downloaded (please be program-specific).
  - f. Please list main reason(s) for not downloading videos.
  
2. Have you used *Stars* in your classroom? (please answer yes or no): \_\_\_\_\_
  - a. How did you use *Stars* in your classroom? (for example (please be program-specific): taught a *Stars* lesson, showed content enhancement, used print materials (lesson plans, graphic organizers, etc.))
  - b. Please list main reason(s) for not using *Stars* in your classroom.

The third question is in reference to **how you have shared *Geography: Teaching with the Stars* with other teachers at your school for professional development or in any other capacity.**



3. Have you directed any other teachers to the *Stars* website, [www.geoteach.org](http://www.geoteach.org)? (please answer yes or no): \_\_\_\_\_
- Why did you direct teachers to visit the *Stars* website?
  - How many teachers did you direct to the *Stars* website?
  - What subjects and grade levels do these teachers teach?
  - To your knowledge, have these teachers directed any other teachers to the *Stars* website?
  - In what capacity were you able to direct teachers to the *Stars* website? (for example: discussed *Stars* resources during a “common planning period”)
  - Along with the website, did you discuss the component parts of the *Stars* programs?
  - If so, which component parts did you share with other teachers? (for example: classroom demonstration video, pedagogic enhancement video, content enhancement videos, instructional print materials)
  - Have you shared the *Stars* resources in any other capacity? If yes, how so?
  - Please list main reason(s) for not directing other teachers to visit the *Stars* website.

The fourth and fifth questions are in reference to **the Learning Cluster Method concept as a way to enhance and encourage teacher leadership skills.**

- How has this particular approach using the Learning Cluster Method **enhanced your** teacher leadership skills?
- How has this particular approach **encouraged and enhanced teacher leadership skills among your colleagues**?

**Finally, please discuss any other information you would like to share about the implementation and continued development of the Learning Cluster Method concept.**

## APPENDIX H

### **Professional Development in Geography: An Online and Face-to-Face Approach to Develop Teacher Leaders June 12, 2013, 9am-3pm**

The Grosvenor Center for Geographic Education located at Texas State University-San Marcos, in conjunction with the Harte Research Institute at Texas A&M Corpus Christi, will be hosting a one-day professional development workshop focusing on a video-based, online professional development series, *Geography: Teaching with the Stars (Stars)* ([www.geoteach.org](http://www.geoteach.org)) on **June 12, 2013 (9am-3pm) at the Harte Research Institute at Texas A&M Corpus Christi**. This workshop will focus on modeling best practice teaching strategies and conceptualizing these practices related to geography and Earth/environmental/aquatic science content, while **developing teacher leaders who are able to train other teachers on using Stars in their home districts**. Workshop facilitators, Dr. Richard G. Boehm and Carmen Brysch of Texas State University, are seeking qualified and experienced **world geography teachers**. Familiarity and interest in the potential of online professional development are strongly encouraged for participation in this workshop. There are spots still available for anyone who is interested in participating. If more requests are received, teachers will be put on a wait list and informed of open spots as soon as/when they become available. An important component of this workshop will be to evaluate this type of professional development approach in the development of teacher leaders. Participants will be asked to fill out a post-survey questionnaire and a focus group will be held at the end of the session. All information obtained will be kept anonymous.

#### **Tentative outline of workshop:**

8-9am – Breakfast – provided by workshop facilitators

9-10am – Introduction and welcome

- *Geography: Teaching with the Stars*, rationale, introduction, component parts
- Background on 1) face-to-face professional development in geography, 2) an online alternative, and 3) a hybrid approach
- Developing teacher leaders – implementation and dissemination

11am – *Geography: Teaching with the Stars - Tidewaters*

- Review *Tidewaters* program
- Activities, lesson plans, video

12-1pm – Lunch – provided by workshop facilitators

1-2:30pm – Online Community

- Facilitator's Guide
- Discuss use of online forum
- Develop implementation plan for dissemination

2:30-3pm – Survey questionnaire/Focus group

- Evaluating this professional development approach and the establishment of teacher leaders.

If you are interested in this workshop or have any additional questions, please contact: Carmen Brysch, [cb1404@txstate.edu](mailto:cb1404@txstate.edu), 512-245-182,3 by **Tuesday, May 28, 2013**.

APPENDIX I


**Learning Cluster Teacher Leadership Workshop in Geographic Education  
Harte Research Institute – Texas A&M Corpus Christi  
Leadership Pre-Questionnaire - June 12, 2013**

**Viewing yourself as a teacher leader:**

Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I consider myself a teacher leader in my home school district.					
I have provided professional development to my peers in my home school district.					
I share relevant resources, lesson plans, websites, and other materials with other teachers.					
I participate in school curriculum development in my home school district.					
I have demonstrated teacher leadership by presenting at conferences and workshops.					
Part of my responsibility as a teacher leader is to provide mentoring to pre-service teachers/student teachers/early career teachers.					
I encourage other teachers to become teacher leaders.					
I make an effort to improve my own teaching effectiveness.					
I am proud to be a teacher leader.					
Why do you feel it is important to be a teacher leader?					
What do you feel has most equipped you to become a teacher leader?					

## APPENDIX J

### Corpus Christi Teacher Leadership PowerPoint Presentation



Geography  
Teaching with the Stars

Learning Cluster Workshop  
Harte Research Institute  
June 12, 2013

Carmen Brysch  
Dr. Richard G. Boehm  
Governor Center for Geographic Education

J.R. Jones  
Shafene Walker  
Teacher Facilitator

### Learning Cluster Method

Governor Center for Geographic Education

- Uses online professional development capabilities.
- Hybrid approach combining face-to-face and online methods.
- Opportunities for the development of teacher leadership skills.
- Reaches many more teachers and is self-sustaining.

Developed by: Carmen Brysch and Richard G. Boehm

### The Idea

- Geography: Teaching with the Stars (GTS) is a "best practice" professional development series in geography that is web-based and relatively self-contained.
  - can be used in schools without too much preparation and supervision
- The purpose is to share teaching and learning experiences in geography with teachers who would like to upgrade their knowledge of geography and how to teach it.
- Aimed at the 6-9 grade level, addresses very important societal issues from a geographical point of view.

## Programs

- **Currently Available**
  - Globalization
  - Watershed Management
  - Agriculture and Water
  - Tidewater

## Component Parts

- **Classroom Demonstration**
- **Pedagogic Enhancement**
- **Content Enhancement - Case Study**
- **Instructional Materials**
  - Lesson Plans
  - Resources
- **Facilitator's Guide**
- **Website Forum**

## Project Website: [www.geoteach.org](http://www.geoteach.org)

- **Programs available for download**

- **Forum**



## Where has Stars been used?

- Since 2010, Stars has been featured and presented at various workshops.
- Local
- Regional
- State
- National
- International

## How has Stars been used?

- Range from 1 hour to whole day presentations
- Face-to-face
  - Teachers view programs
  - Develop lessons, teach students
- Online self guided, remote
  - Materials for verification
- Hybrid
  - Combination, use of online forum
- Pre-service
- Development of implementation plans

## Professional Development

- |  |   |
|--|---|
| <ul style="list-style-type: none"><li>• <b>Traditional</b></li><li>• <b>Need</b> (Dobbs et al., 2009; Dornan &amp; Coghlan, 2006)</li><li>• <b>Traditional</b> (de Menezes et al., 2010; Devine et al., 2009)</li><li>• <b>Participant interaction</b><ul style="list-style-type: none"><li>○ Community building (Degeer et al., 2008; Gillies et al., 2012)</li></ul></li><li>• <b>Barriers</b><ul style="list-style-type: none"><li>○ Cost (Jung, 2009; Miller et al., 2002)</li><li>○ Teacher schedules</li><li>○ Relevant to teacher needs (Truel, 2008)</li><li>○ Access in rural areas (Mawjuka et al., 2010; Devine et al., 2009)</li></ul></li></ul> | <ul style="list-style-type: none"><li>• <b>Online/Hybrid</b></li><li>• <b>Perceptions/Satisfaction</b> (Karns &amp; Calgstay, 2006)</li><li>• <b>Flexibility</b><ul style="list-style-type: none"><li>○ "anytime, anywhere" flexibility (de Menezes et al., 2010; Borko et al., 2009; Cady &amp; Rardon, 2009)</li><li>○ Removes geographic barriers (Karns &amp; Calgstay, 2006)</li><li>○ Individual choice</li><li>○ Cost (Barclay, 2004; Jung, 2009)</li><li>○ Provide teachers with ongoing support</li><li>○ Connecting theory to practice (Wang &amp; Stanley, 2005)</li></ul></li></ul> |
|--|---|

## Research Findings

Table 2. Early career teacher responses to Geography Teaching with the Sun (N=18)

	Low (1)	(2)	Medium (3)	(4)	High (5)	X
1. How useful did you find the program or globalization?				5	5	4.5
2. How useful did you find the pedagogy/enhancement?	1	2	4	3		3.8
3. How useful did you find the content/enhancement?		3	1	6		4.3
4. Please rate the potential of this program (Globalzoner) 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 (Globalzoner) and others like it to lead an in-service workshop in your home school district.			2	2	6	4.4
6. Please rate the low cost, Web-based professional development approach as a means of improving teacher effectiveness across the state.				1	9	4.8
7. Please rate this professional development approach 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 preservice educator program?	1	1	1	7		4.4

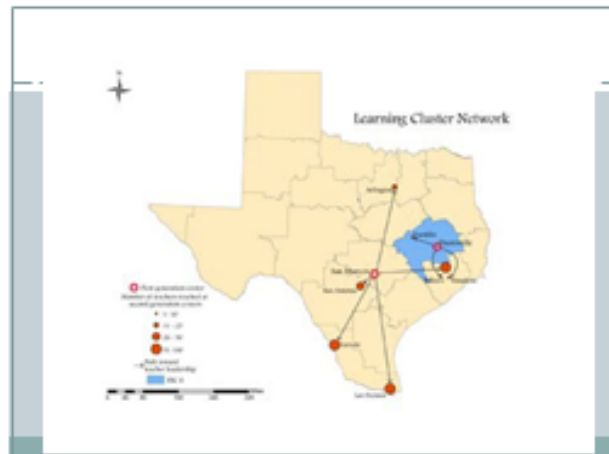
Source: Roehm et al. 2012

## What are teachers saying?

- **Observation without losing class time**
  - Effective modeling
- **Use of quality curriculum combined with best practices**
- **Students in real classrooms**
- **Ability to reach underserved and remote areas**
- **Anytime access**
- **Cost**
- **Teacher interaction**
- **Connection to standards, Tx**

## Learning Cluster Method

- **Establishment of effectiveness**
- **Dissemination strategy**
- **Teacher leadership online community (Bryan and Gutierrez 2010)**



## Teacher Responses

- "I am kind of the "unofficial" social studies department head, at least at the high school! but I do feel like the more leadership opportunities that present themselves, will promote that leadership role that I have kind of taken on!"
- "The Learning Cluster Model has given me more experience working with colleagues to improve their classroom instruction and lesson development. Several of the modules address content areas that teachers identify as weaknesses in our curriculum units and I am working with teachers on our high school campuses to plan implementation of module components into our curriculum units for next school year."

## Teacher Leadership

- 1) Teacher as leader in the classroom
- 2) Lead beyond the classroom
- Turnaround training sessions (Kantor-Thornes et al. 2002)
- Something that teachers do - Teachers leaders:
  - Seek lifelong learning
  - Facilitation and presentation skills
  - Engage others in shared vision and meaning, encourage change
  - Develop and maintain relationships
  - Have sense of integrity
  - Plan and organize
  - Maintain a focus on student learning

Argyle & Carter 2011



## Teacher Leadership

- Improve teacher quality – impact on student learning
- Retention and recruitment of teachers, avenue for motivation and recognition
- Opportunities for ongoing professional growth
- Increase sense of professionalism among teachers
- Teachers need:
  - Expectations
  - Models/examples of teacher leadership
  - Exposure to variety of leadership opportunities

(Zeicher – 2012, Portnoy – et al.)

## Online Community

- Potential of online PD forum to build community
- Unite communication tools and social activities
- Break time and space boundaries – meet any time; any place
- “Collection of individuals sharing mutually defined practices, beliefs, and understandings over an extended time frame in pursuit of a shared enterprise.”<sup>37</sup> (Davis & Duffy, 2002)

Li, 2012

## Online Community -> Teacher Leadership

- “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 future educators that are within their reach.”<sup>38</sup> -Kate (Quinn and Ryan, 2002)



WWW.GEOTEACH.ORG



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## APPENDIX K

### *Geography: Teaching with the Stars* **Implementation Plan Guidelines** **June 12, 2013**

**Please use these guidelines and the Facilitator’s Guide as you prepare your implementation plan.**

#### **a. General**

- i. Familiarize yourself with the program(s).
- ii. Generate potential contacts for *Stars* implementation
  1. Administrative clearance?
  2. Who is your target audience and number of teachers?
- iii. How will you advertise?
- iv. Where can you implement *Stars*?
  1. Workshops – local, ESC, district
  2. State, national conferences, etc.
  3. Other (common planning periods, etc.)
- v. Make connection to Standards (TEKS, college and career readiness, etc.)

#### **b. *Stars* Implementation**

##### **i. Develop 3-5 sentence abstract/proposal.**

##### **ii. Develop step-by-step instructions for implementation process.**

1. List goals/objectives
2. Develop Approach:
  - a. Face-to-face
  - b. Online, self-guided
  - c. Hybrid
3. Think About:
  - a. Teacher Leadership**
    - i. Implementing a workshop with a goal of how it will enhance/develop **your** teacher leadership skills.
    - ii. Implementing a workshop with a goal of how it will enhance/develop **your colleagues’** leadership skills.
  - b. Learning Cluster Method in Action**
    - i. How effective is the implementation of the Learning Cluster Method?

##### **c. What are potential barriers to implementation?**

##### **d. Email plan to Carmen: [cb1404@txstate.edu](mailto:cb1404@txstate.edu)**

APPENDIX L

**Learning Cluster Teacher Leadership Workshop in Geographic Education  
Harte Research Institute – Texas A&M Corpus Christi  
Survey Questionnaire - June 12, 2013**

**A. Geography: Teaching with the Stars (Stars), online/video-based professional development:**

Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. The <i>Stars</i> <u>classroom demonstrations</u> are highly effective. (Demonstration of best practice strategies and lesson plans.)					
2. The <i>Stars</i> <u>pedagogic enhancements</u> are highly effective. (Mentor teacher’s comments on the best practice strategies used.)					
3. The <i>Stars</i> <u>content enhancements</u> are highly effective. (Case study on program topic.)					
4. The <i>Stars</i> <u>instructional materials</u> (lesson plans, etc.) are highly effective.					
5. The <i>Stars</i> <u>Facilitator’s Guide</u> is highly effective. (Instructions on how to implement a professional development workshop.)					
6. The <u>website forum</u> has potential to be highly effective as an avenue for teacher interaction and collaboration.					
7. I believe that <i>Stars</i> is an effective method for providing professional development.					
8. I will revisit the <i>Stars</i> website after this workshop.					
9. <i>Stars</i> provides an effective platform for developing teacher leadership skills.					
10. I prefer to seek out online/video-based professional development over traditional face-to-face approaches.					

**11. Rearrange the following list of component parts in order from most important (1) to least important (6) in terms of developing teacher leadership skills.**

Classroom demonstration \_\_\_\_\_

Pedagogic enhancement \_\_\_\_\_

Content enhancement \_\_\_\_\_

Facilitator's Guide \_\_\_\_\_

Instructional materials \_\_\_\_\_

Website forum \_\_\_\_\_

**Please explain:**

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**12. How has *Stars* provided an effective platform for developing teacher leadership skills?**

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**13. Have you previously participated in online, video-based, or other (alternative) forms of professional development?**

(please circle)      Yes      No

**14. If yes, please list program name and/or type (webinar, etc.) and content areas.**

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**15. If yes, please list major reasons for participating in online or alternative forms of professional development.**

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**16. If yes, about what percentage of your professional development activities are completed in alternative forms (rather than strictly face-to-face)? (Please circle)**

<25%   about 25%   about 50%   about 75%   > 75%

Please explain:

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**17. If yes, how does *Geography: Teaching with the Stars* compare?**

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**18. Please list the major strengths of *Geography: Teaching with the Stars*.**

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**19. Do you have any reservations about using *Stars* as a form of professional development?**

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**20. Please include any additional comments or observations you may have about *Geography: Teaching with the Stars*.**

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**B. Acceptance of the Learning Cluster Method:**

Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
21. The Learning Cluster Method provides an effective platform for developing teacher leadership skills.					
22. With explanation, other teachers can use and accept the Learning Cluster Method.					
23. The Learning Cluster Method for professional development is an effective method to develop teacher leaders.					
24. The Learning Cluster Method provides an opportunity for early career teachers to develop teacher leadership skills.					
25. The Learning Cluster Method encourages continued collaboration among teachers.					
26. The Learning Cluster Method is an effective method to disseminate professional development.					
27. The Learning Cluster Method should include a face-to-face option					
28. The Learning Cluster Method should include an online option.					
29. The Learning Cluster Method should include a hybrid option.					
30. A website forum or blog must be included as an avenue for continued teacher interaction and collaboration.					

**31. What are the main strengths of the Learning Cluster Method for:**

- a. Increasing the dissemination potential of professional development?

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b. Developing teacher leaders?

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Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
32. Use of online/video based professional development with the Learning Cluster Method is highly effective.					
33. Using the Learning Cluster Method in an online/video-based approach is most effective.					
34. A website forum or blog must be included as an avenue for continued teacher interaction and collaboration.					

**35. Please include any additional comments or observations you may have on this Learning Cluster workshop.**

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**Developing alternative models for professional development: face-to-face, online, hybrid.**

Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
36. Teachers must be willing to accept alternative approaches to professional development including online/hybrid workshops.					
37. As teachers' schedules become busier, alternative forms of professional development are a					



reality in the rapidly changing 21 <sup>st</sup> century.					
38. Alternative forms of professional development offer flexibility, continued use, convenience, and easier accessibility.					
39. Alternative forms of professional development remove distance barriers and have potential to reach underserved/rural areas.					
40. I prefer to seek out online/video-based professional development over traditional face-to-face approaches.					

**C. Developing effective teacher leaders:**

Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
41. Mentoring is an effective strategy to develop teacher leadership skills.					
42. Being part of a leadership team is important in developing teacher leadership skills.					
43. Teacher leaders are essential to continuing professional development.					
44. Offering professional development to other teachers is a way to develop leadership skills.					
45. It is important to recognize individual teacher differences.					
46. A teacher leader's responsibilities include creating other teacher leaders.					

**47. Please list five characteristics of strong teacher leaders.**

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**48. Please include any additional comments or observations you may have on the development of teacher leadership skills.**

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**49. Please list your age: \_\_\_\_\_**

**50. Please list your teaching assignment(s) and grade level(s)?**

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APPENDIX M

**Corpus Christi Follow-Up LCM Implementation Survey  
December 2013**

Dear Teacher Leaders,

You are receiving this email because you attended our “Learning Cluster Model” workshop held at Harte Research Institute, Texas A&M University this past summer June, 2013. At this workshop you were charged with and offered financial compensation for developing and implementing additional workshop(s) back in your home district or presenting at a local, regional, or state conference. We have also submitted a proposal to reconvene this group during the summer of 2014.

I am writing to ask you to fill out the questionnaire below and reply directly to this email or fill out the attached document and send back to me. This survey should take no more than 12-15 minutes to complete. Please answer honestly; even if you have not been able to implement Stars in any way (there is still time to do so!), it is beneficial to know barriers that impede continued *Stars* implementation. **Please answer all questions and sub questions and return to me, cb1404@txstate.edu, by Tuesday, December 17th. If you have any questions, do not hesitate to contact me.**

The first and second questions are in reference to **how you, yourself, have used any of the Geography: Teaching with the Stars materials (www.geoteach.org) in your own classroom.**

1. Have you visited the Stars’ website since the June 12, 2013 workshop? (please answer yes or no): \_\_\_\_\_
  - a. What was your reason(s) for visiting the website?
  - b. Please list main reason(s) for not visiting the website.
  - c. Did you download any materials (lesson plans etc.)? yes or no; please list materials you downloaded (please be program specific).
  - d. Please list main reason(s) for not downloading materials.
  - e. Did you download or view any of the videos? Yes or no; please list which videos you downloaded (please be program specific).
  - f. Please list main reason(s) for not downloading videos.
  
2. Have you used Stars in your classroom? (please answer yes or no): \_\_\_\_\_
  - a. How did you use Stars in your classroom? (for example (please be program specific): taught a Stars lesson, showed content enhancement, used print materials (lesson plans, graphic organizers, etc.))
  - b. Please list main reason(s) for not using Stars in your classroom.

The third question is in reference to **how you have shared Geography: Teaching with the Stars with other teachers at your school for professional development or in any other capacity.**

3. Have you directed any other teachers to the Stars website, www.geoteach.org? (please answer yes or no): \_\_\_\_\_
  - a. Why did you direct teachers to visit the Stars website?
  - b. How many teachers did you direct to the Stars website?
  - c. What subjects and grade levels do these teachers teach?
  - d. To your knowledge, have these teachers directed any other teachers to the Stars website?
  - e. In what capacity were you able to direct teachers to the Stars website? (for example: discussed Stars resources during a 'common planning period')
  - f. Along with the website, did you discuss the component parts of the Stars programs?
  - g. If so, which component parts did you share with other teachers? (for example: classroom demonstration video, pedagogic enhancement video, content enhancement videos, instructional print materials)
  - h. Have you shared the Stars resources in any other capacity? If yes, how so?
  - i. Please list main reason(s) for not directing other teachers to visit the Stars website.

The fourth, fifth, and sixth questions are in reference to **the Learning Cluster concept as a way to enhance and encourage teacher leadership skills and develop a strong community of learners.**

4. How has this particular approach using the Learning Cluster Model **enhanced your** teacher leadership skills?
5. How has this particular approach **encouraged and enhanced teacher leadership skills among your colleagues** who you made additional presentations about *Stars* to?
6. Do you feel participation in the LCM **allowed for the development of a community of learners**?
  - a. At or during the workshop? (please circle: yes or no)
  - b. After the workshop through continued interaction and collaboration? (please circle: yes or no)  
Through the use of the online forum? (please circle: yes or no)
  - c. Have you been in contact with any members of the workshop group from this past summer? (please circle: yes or no)
    - i. If yes, in what ways have you communicated with other June 2013 workshop participants? (Please circle or indicate all that apply)
      1. Phone
      2. Email
      3. Online forum
      4. Other (please explain):  
\_\_\_\_\_

**For the seventh and final question, please discuss any other information you would like to share about the implementation and continued development of the Learning Cluster concept.**

7. Please discuss any final comments about the Learning Cluster concept or about *Geography: Teaching with the Stars* here:

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