EFFECTIVE STRATEGIES FOR DEVELOPING AND SUSTAINING
A PARTICIPATORY CULTURE IN PROFESSIONAL
ONLINE COMMUNITIES IN EDUCATION

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ONLINE COMMUNITIES IN EDUCATION

A Dissertation

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I certify that this student has met the requirements for format contained in the University format manual, and that this dissertation is suitable for shelving in the library and credit is to be awarded for the dissertation.

Dr. Carlos Nevarez,  
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Date

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DEDICATION

I would like to dedicate this work to my parents, Jim and Ellen Knolle for their love and support, for their life-long encouragement, and for being my biggest fans.
ACKNOWLEDGEMENTS

I would like to begin by expressing my deepest appreciation to my committee members who have not only guided me through the completion of my dissertation but have provided guidance and mentorship throughout my studies at California State University, Sacramento. Thank you Dr. JoLynn Britt, for helping make sense of the crazy world of quantitative statistics. Your calm nature, ongoing encouragement, and ability to make complex data analysis seem accessible will forever be appreciated. Thank you Jose Ortega, for getting me involved in online communities and Brokers of Expertise in the first place. Thank you for sharing your passion for making a difference in education and for your incredible knowledge of complex education policy and systems. And last but not least, thank you to my Chair, Dr. Lisa William-White, for helping me simultaneously stay focused and think outside the box. You have provided guidance along this journey, offered encouragement when I needed it most, and helped me reach the finish line. I am fortunate to have worked with all of you and attribute my success to your influence.

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Finally, thanks to all of the BoE group leaders and community members who participated in this study. Thank you for sharing your experience and taking time to help me explore the drivers and barriers to online community participation. I hope you continue to find great passion to share your knowledge with one another and that the results of this study can contribute to the continued success of the BoE community.
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Abstract

of

EFFECTIVE STRATEGIES FOR DEVELOPING AND SUSTAINING A PARTICIPATORY CULTURE IN PROFESSIONAL ONLINE COMMUNITIES IN EDUCATION

by

Jonathan Wylie Knolle

The objective of this mixed methods study is to identify the drivers and barriers to participation in professional online communities in education. The results of this study will help educational leaders establish and maintain more effective online communities, increase opportunities for dialog, and facilitate the sharing of resources that may help improve education. It is believed that as participation in online communities increases, educators will benefit from greater access to resources, shared knowledge, and professional development.

This mixed methods study used an exploratory sequential design comprised of both qualitative and quantitative data. The qualitative strand focused on collecting data through 30-minute interviews with 7 participants who have served in the role of online group leaders on Brokers of Expertise. The outcome of the qualitative strand was a list of categories of factors that hinder or encourage participation in online communities. A combination of existing site usage data and quantitative survey data was used to determine which, if any, of the factors identified during the qualitative strand have
significant impact on community group participation. In addition the quantitative strand served to uncover participant characteristics that have significant impact on participation.

The researcher found that professional development, networking, knowledge sharing, interest in technology, and recognition all have positive relationships with community group participation. Conversely, lack of awareness, lack of training, and lack of leadership were found to have significant negative relationships to participation. Of the participant characteristics, length of membership on BoE, length of time in education, age range, and perceived technology efficacy were all found to be significant predictors of community group participation. The grade levels undergraduate and graduate as well as the subject(s)/topic(s) technology, foreign language, teacher education, career technical education, mathematics, English Language Arts, and professional development have greater than average levels of participation. Of the motivators to join the community, desire for belonging, networking, and sharing, were found to each have significant positive impact on community group participation.

The qualitative data from the interview responses resulted in facilitation strategies organized into the following themes: engage group members with frequent communication, establish and communicate a clear purpose/vision for your group, establish an effective group design/structure, maximize utility/value of group resources and tools, provide group members with clear instructions/guidelines for participation, be an active and engaged leader.
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Chapter 1

INTRODUCTION

Professional networks and communities in education have long served as a mechanism for supporting the growth of educators, from pre-service well into their careers (Wenger, White, & Smith, 2009). Online communication technologies are seen as providing additional opportunities to engage with professional networks and communities and to access people and conversations regardless of time and location (U.S. Department of Education Office of Educational Technology, 2011; Howard, 2010).

Recognizing the importance of networks and communities in education, the 2010 National Education Technology Plan released by the U.S. Department of Education (2010) outlines a vision for “connected teaching” and the use of technology to help facilitate the development of strong and supportive teacher networks and professional communities (p. 48). Goal 3.2 of the 2010 National Education Technology Plan provides the following recommendation:

Leverage social networking technologies and platforms to create communities of practice that provide career-long personal learning opportunities for educators within and across schools, preservice preparation and in-service educational institutions, and professional organizations. (p. xviii)

Online professional networks and communities are seen as having the potential to increase engagement and interaction, extend professional learning, and support problem solving beyond specific space and time (Hur & Brush, 2009; Luehmann & Tinelli, 2008). However, realizing this potential depends on our ability to develop and maintain effective
online communities that provide educators with both opportunity to participate and motivation to participate and contribute (Koh, Kim, Butler, & Bock, 2007). Despite the growing interest and use of professional online communities in education, there remains a lack of knowledge related to best practices for design and facilitation of online communities that promote participation.

**Implementing a Professional Online Community for California Educators**

In September 2010, the California Department of Education and the California K-12 High Speed Network launched the online community Brokers of Expertise (BoE) to support California educators. The BoE community (see Figure 1) was designed to provide educators throughout California with tools for professional networking, sharing best practices, and accessing high-quality digital resources. Describing it as “Facebook for teachers,” former California State Superintendent of Public Instruction, Jack O’Connell, announced that the site would be a place where California educators can “share and learn about strategies that improve student achievement” (California Department of Education, 2010, p. 1).

The BoE project originated out of the California Department of Education’s (2008) P-16 Council’s recommendations for closing the achievement gap. Recognizing that students of color, students from low socioeconomic backgrounds, English learners, and students with disabilities continued perform lower than their white counterparts, O’Connell directed the P-16 Council to “develop, implement, and sustain a specific, ambitious plan that holds the State of California accountable for creating the
conditions necessary for closing the achievement gap” (p. 1). Among the recommendations, the P-16 council declared, “California must develop a system in which sound educational solutions to common issues can be shared by educators in a collaborative format” (p. 9). The development, launch, and support of BoE was a collaboration between the California Department of Education, the K-12 High Speed
Network, and a number of county offices of education around the state (B. Ausland, personal communication, March 28, 2011).

The tools and resources available in BoE serve as a vehicle for teachers to share information and resources (Loeb & Ronfeldt, 2009). The community features collaborative group spaces, discussion forums, comments, private messages, and member profiles. The tools are designed to facilitate networking and encourage dialog about resources and general topics of interest to educators such as classroom management, equity, and diversity.

**Opportunities for Knowledge and Resource Sharing**

A key role of the BoE community is to support professional communication and collaboration among educators. Hobson and Lee (2012) suggest that an important dimension of collaboration in education is about sharing—sharing of information, ideas, and resources. New Web-based technologies like BoE create additional opportunities for this sharing to take place, regardless of time and location (Luehmann & Tinelli, 208). These new technologies are transforming what is shared from only official publisher-created curriculum and materials to more teacher-created, personalized, and engaging digital resources (Hobson & Lee, 2012).

Many examples on the site showcase communication and collaboration between educators. For example, Figure 2 illustrates the resource titled “Building Classroom Community Through the Exploration of Acrostic Poetry,” contributed by the Verizon Foundation’s Thinkfinity project, which highlights the exchange between teachers across the state (Brokers of Expertise, 2012a). After using the resource in her classroom, a 4-5th
grade teacher from a northern California charter school posted a comment to explain how she used the lesson in her classroom and offered tips for other teachers considering the resource. A teacher from southern California found the same resource and added to the comments by sharing strategies for adapting the lesson to better meet the needs of
English language learners in the classroom. The BoE site provided an opportunity for two teachers, who would likely never cross paths, to connect, exchange ideas, and potentially informed the teaching practice of countless other teachers.

While the BoE site provides tools to support the collaboration of all teachers, it may be of particular interest for new teachers and induction programs in place to support new teachers such as Beginning Teacher Support and Assessment (BTSA). BTSA is a new teacher induction program sponsored by the California Department of Education (CDE) and Commission on Teacher Credentialing (CCTC) and designed to provide guidance, professional development, and support to new teachers (Beginning Teacher Support & Assessment, 2008). Support for new teachers is critical as they are often placed in more difficult classroom environments, isolated in their work, and left to succeed or fail on their own (Ingersoll & Strong, 2011; Rochkind et al., 2007). These challenges contribute to high turnover among new teachers and may be reduced by the developing supportive social networks and communities for professional support (Durn, 2010; Baker-Doyle, 2011). The resources and community tools provided by BoE are intended to help minimize these challenges and provide support to all of California’s educators (California Department of Education, 2010).

In addition to new teachers, the BoE site is also utilized by communities and groups centered around specific topics such as the implementation of Common Core State Standards in California (California Department of Education, 2012d), supporting English learners, improving curriculum and instruction, and strengthening educational leadership (Brokers of Expertise, 2012b). A search of the BoE site reveals a number of
specific communities using the site to share resources and exchange ideas. Community group spaces include subject groups, school librarians, charter school leadership, English language development, and special education among other topics. Each group is designed to bring together educators from around the state and provide space for them to share best practices and collaborate (B. Ausland, personal communication, March 28, 2011).

**Opportunities for Dialog and Collaboration**

Dialog is an essential component to professional growth and education reform (Freire, 2000). The ability to reflect on one’s own teaching practice and engage in dialog around effective instruction is an essential component to teacher professional growth and development (Buczynski & Hansen, 2010). This idea was echoed by Tom Torlakson, California’s current Superintendent of Public Instruction, when he described BoE as providing “a common space for those that work closest to our children to share their skills and expertise in an open, supported, and ongoing dialogue around the practice and the passion for bettering our classrooms” (Personal communication, March 29, 2011).

It is the intention of BoE that educators connect with one another and engage in transformative discussions around improving education and meeting the needs of diverse learners (B. Ausland, personal communication, March 28, 2011). This dialog is a critical component to promoting social justice and shaping policy in education (Frerie, 2000). Examples of this can be seen in the community space created on the BoE site to support the State Superintendent of Public Instruction’s Education Technology Task Force. The task force recommendations have been posted for public review and input. Through BoE, educators have posted responses that identify specific needs of English learners, special
education students, students with disabilities that were not addressed in the initial recommendations. The dialog that is taking place on BoE is helping groups like the Education Technology Task Force ensure that the voices of educators around the state can be heard, and the needs of all stakeholders can be addressed in the final policy. Loeb and Ronfeldt (2009) confirmed this idea by suggesting that BoE is a valuable community of practice to support dialog centered on improving instruction and ensuring success for diverse students and schools.

Muijs, Ainscow, Chapman, and West (2011) argue that networking and collaboration have become increasingly popular mechanisms for the delivery of public policy over the past two decades. This is evident in the California Department of Education’s use of BoE to promote additional state task forces focused on recommending change to existing education policy in the areas of education technology; science technology, engineering, and math (STEM); and creative arts education (California Department of Education, 2012a, 2012b, 2012c). BoE serves as a platform for the task force groups to communicate and collaborate as well as engage the public for input. Using these online community tools allows the CDE to include private sector partners in the dialog, and seek input from multiple perspectives and sources (Muijs, Ainscow, Chapman, & West, 2011).

**Summary of Research**

The review of literature presented in Chapter 2 focuses on three core areas related to the study of professional online communities in education: professional social networking in education, professional communities in education, and the professional
learning in education. These three areas of research helped focus the study to determine strategies for increasing participation in professional online communities in education. A more detail discussion of each area is provided in Chapter 2, “Review of Literature.”

Professional social networks have a direct influence on the retention, professionalism, and engagement of educators (Baker-Doyle, 2011). New teachers, in particular, are challenged with the ability to form supportive social networks. One in two new teachers leaves the profession within the first five years due in part to a perceived lack of support. Those who remain will come to rely on their social networks for various forms of support throughout their careers. Not only do strong social networks increase the likelihood that educators remain in the profession, they lead to a greater sense of confidence and willingness to engage in dialog around issues of teaching and learning (Daly, 2010). Unlike social networks, an individual is not at the center of relationships in a community (Howard, 2010). Instead, the primary focus in a community is on the user’s commitment to the overall interests, values, and communication practices of the group. Within a community, an individual makes a commitment to group as a whole before other individual members.

Online social networking sites and online communities provide opportunities to extend traditional networking and community activities beyond specific space and time (Luehmann & Tinelli, 2008). Key benefits of online communities include the ability to access, create, and share knowledge; build professional identity; form and strengthen relationships; increase collaboration; and promote professional learning (U.S. Department of Education Office of Educational Technology, 2011). However, participation is
essential to the success of online communities. Online communities are unlikely to be sustained if members do not participate (Koh, Kim, Butler, & Bock, 2007).

The U.S. Department of Education Office of Educational Technology (2011) suggests that only a small percentage of online community members typically post public content. Of those who do participate, one third or more of the contributions go unaddressed in more than half of forums. The issue of participation is critical in helping to attract and retain community members, to help educators overcome disconnectedness, and gain access to the knowledge of each other. Thus, the principal research questions study aimed to uncover:

- Drivers and barriers to participation in professional online communities in education.
- Participant characteristics that impact participation in online communities of practice in education.
- Design and facilitation strategies that can encourage participation in online communities of practice in education.

**Problem Statement**

According to the National Center for Education Statistics (2011a), there were 3.7 million full-time teachers and an estimated 390,000 new teachers entering the profession in the United States in 2011. In the 2011 State of the Union Address, President Obama (2011) called for 100,000 new teachers in science, technology, engineering, and mathematics over the next 10 years. At the same time the education system continues to see resources for preparing and supporting our teachers diminish.
Online communities have been recognized as having the potential to bring educators from diverse backgrounds and locations together “virtually” and provide space to strengthen networking and collaboration (Hsu, Ju, Yen, & Chang, 2007). However, knowledge sharing and participation among them has not lived up to the expectations.

The BoE online community was developed specifically to serve the needs of the more than 300,000 educators across the State of California. The collaborative tools offered by the site create opportunities for educator groups to establish online communities to share best practices, access resources, and engage in dialog around student performance and school improvement. Other states have developed similar platforms to support educators. At the national level, the U.S. Department of Education and U.S. Department of Defense have supported these initiatives by creating the Learning Registry to help channel resources from agencies creating instructional resources around the United States into state-wide learning communities like BoE (Learning Registry, 2013). Despite the high levels of interest at local, state, and national levels and the growing use of online communities in education, there remains a lack of knowledge related effective strategies for increasing participation in these communities.

**Significance of the Study**

There continues to be an increase in the use of online communication tools for professional networking and professional development in Education. In its National Education Technology Plan, the U.S. Department of Education (2010) has called for an investment in online communities to support educators across the nation. At the state level, sites like BoE have emerged to meet the needs of teachers and education agencies
across the state. Understanding how to effectively develop and facilitate online communities is an essential step toward increasing efficiency and supporting information and resource sharing among educators (Kohl, Kim, Butler, & Bock, 2007).

There has been limited research in the area of online communities for education and professional online communities for teachers. Recent research funded by the U.S. Department of Education Office of Educational Technology (2011) has focused on the potential of online communities and generalized best practices from research into other types of online communities. Authors including Preece (2010), Bacon (2009), Howard, (2010), Shirky (2008), and Preece, Nonnecke, and Andrews (2004) have explored issues of design, socialization, and relationships in online communities. Studies by Preece and Maloney-Krichmar (2005), Li (2011), Bettoni, Andenmatten, and Mathieu (2007), and Bishop (2007) have focused on theoretical and practical design strategies for online communities as well as discussion about increasing commitment and participation.

Previous studies have centered around the use and impact of online communities on education, teaching practice, resource sharing, and teacher development (Vescio, Ross & Adams, 2008; Nistor, Baltes, & Schustek, 2012). Gunawardena et al. (2009) have provided a theoretical framework for building online communities in education. Duncan-Howell (2010) explored the use of teacher communities to support professional development. The U.S. Department of Education Office of Educational Technology (2011) has called for additional research in the areas of online communities of practice in education to determine the types of content and interactions that will encourage participation and provide effective support for professional educators.
The objective of this mixed methods study is to identify the drivers and barriers to participation in professional online communities in education. The results of this study will provide strategies to increase participation and effectiveness of professional online communities for teachers and inform policy and practice related to online communities in education for agencies such as the U.S. Department of Education, California Department of Education, and the California K-12 High Speed Network. The results of this study will also help educational leaders establish and maintain more effective online communities, increase opportunities for dialog, and facilitate the sharing of resources that may help improve education. As participation in online communities increases, educators will benefit from greater access to resources, shared knowledge, and professional development. Understanding who teachers connect with and the activities they engage in will also help us learn more about how to provide better teacher support, increase retention, and reform education practices (Baker-Doyle, 2011).

**Research Questions**

*Research Question #1:* What are the drivers and barriers to participation in professional online communities in education?

*Research Question #2:* Which, if any, of the following factors predict greater participation in online communities of practice in education:

- age range
- length of membership in community
- number of years in current position
- number of years in education
perceived technology efficacy

school size

and which of the following factors influence participation in online communities in education:

grade level(s)

motivation to join community

subject(s)/topic(s)

Research Question #3: What design and facilitation strategies can be used to encourage participation in online communities of practice in education?

Methodology

The setting for this study was the Brokers of Expertise online community (www.myboe.org) which is comprised primarily of educators in the State of California. Participants were all members of online community groups within BoE.

This mixed methods study employed an exploratory sequential design—beginning with qualitative data collection and analysis, which informed the design of quantitative data collection and analysis, before final interpretation (Creswell & Clark, 2006). Implementation of qualitative and quantitative strands occurred in two distinct phases where the design and conduct of the quantitative strand was dependent upon the results of the qualitative strand. A more detail overview of the research methodology is provided in Chapter 3, “Methodology.”
**Summary of Theoretical Frameworks**

Professional networks and communities of practice allow educators who share concerns or passion about a topic to connect, exchange in dialog about improving education, and deepen their collective knowledge through ongoing interaction and exchange of ideas and resources (U.S. Department of Education Office of Educational Technology, 2011; Preece, 2010). Daly (2010) argues that the relationships we form within our professional networks serve to increase professionalism, engagement, and retention. Educators with strong professional networks are more likely to stay in the profession and feel a greater sense of efficacy, and engage in dialog around teaching and learning (Baker-Doyle, 2011; Daly, 2010). When examining social networks and communities it is also important to consider both formal and informal networks and relationships that impact our understanding, influence, and knowledge. To frame the analysis of social networks and online communities, this study was grounded in three theoretical frameworks: social network theory, social capital theory, and social learning theory.

**Social Network Theory**

Social network theory studies the way social networks form and the links between members of a social network (Muijs, Ainscow, Chapman, & West, 2011). A social network view includes the “web of relationships” that people form and maintain (Borgatti & Ofem, 2010, p. 18). Through these relationships we can observe similarities in location, membership and attributes; social relations such as friend, boss, student, sibling; affective and cognitive mental relations; interactions; and flows of information,
beliefs, or resources. Studying social networks and relationships helps us uncover trends in education such as retention, innovation, and leadership from the perspective of relationships that exist within both small and large-networks (Baker-Doyle, 2011).

Social network theory views a network as a set of nodes, such as people or groups, and a set of ties that connect them (Borgatti & Ofem, 2010). Nodes can refer to individuals or groups of any size—from a small team to an entire organization or industry. Ties represent relationships of any type such as friendships, alliances, exchange in information or resources, or conflict. At the core of social networking theory is the idea that a node’s structural position—its position in the network—impacts the opportunities and constraints it will face. Relationships between nodes are not equal and the exchange between nodes may be greater for some than others.

Muijs, Ainscow, Chapman, and West (2011) suggests that the construction and study of networks is complicated by the contextual definition of roles. Roles and relationships within the network are largely determined by the relationships between individuals and groups interacting with one another.

Social Capital Theory

Bourdieu (1985) defines social capital as “the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance or recognition” (p. 248). Social capital provides a theoretical frame that helps describe and account for outcomes resulting from a non-monetary exchange between individuals and how such exchanges can lead to power and influence (Coleman, 1988; Portes, 1998). Such outcomes can
facilitate or constrain the actions of individuals. From a social network standpoint, social capital can be seen as an output of interactions within a network and is made up of the benefits as well as potential benefits realized by forming relationships one forms through interactions with members of their network (Baker-Doyle, 2011).

Social capital theory also allows us to describe how resources can be combined with other resources to produce different value to the individuals or system as well as different outcomes (Coleman, 1988; Portes, 1998). A challenge to social capital theory is that social capital within a network may be difficult to identify or characterize due to the differences in needs by members of the network (Coleman, 1988). In addition, social capital may be specific to activities within a network and may have less or no value to other networks or groups.

Social Learning Theory

Much of teacher professional development is centered on a model where experienced educators provide instruction or models to their peers. Bandura (1969) provides a framework through social learning theory that helps explain how people learn within a social context and how learning is reinforced through modeling, instruction, and socialized feedback.

A more detail discussion of each theoretical framework is provided in Chapter 2, “Review of Related Literature.”

Operational Definitions

- Community of practice—Groups of individuals who share a concern, set of problems, or passion for a specific topic, and who share their knowledge and
expertise by interacting on an ongoing basis (Wenger, McDermott, & Snyder, 2002)

- Facilitator—For the purpose of this study, a facilitator is a leader of one or more community groups on the BoE site.

- Online community—A group of individuals who share a common purpose or interest, have established group norms or expectations, and use technology tools to interact socially, build relationships, and remove barriers of time and space (Preece, 2000; U.S. Department of Education Office of Educational Technology, 2011; Koh, Kim, Butler, & Bock, 2007).

- Participant—For the purpose of this study a participant is a member of one or more community groups on the BoE site.

- Participatory culture—One in which there is strong support for creating and sharing knowledge. Jenkins (2009) suggests there is an informal mentorship where experienced participants pass along knowledge to novices.

- Professional learning community (PLC)—Dufour, Dufour, and Eaker (2008) define as “educators committed to working collaboratively in ongoing processes of collective inquiry and action research to achieve better results for students they serve.”

- Social capital—An output of social networks; consists of the relationships one forms with members of their network. Social capital consists of one’s network and the relationships they have forged with members of their networks. Baker-Doyle (2011) refers to social capital as “who you know” (p. 4).
- **Social network sites**—Web sites that facilitate virtual networking and communication with online communities, help maintain connections over time and distance, and articulate existing connections (Kim, Jeong, & Lee, 2010; Pai & Arnott, 2013; boyd & Ellison, 2007).

- **Social network**—The formal and informal “web of relationships” that people form and maintain (Borgatti & Ofem, 2010, p. 18; Daly, 2010).

Dependent variables used in this study:

- **Participation**—For the purpose of this study, participation in the online community is defined as activities including sharing resources, posting in discussion forums, recommending resources to colleagues, and similar contributions to the online community (Gupta & Kim, 2007; Preece, 2001).

Independent variables used in this study

For the purpose of this study, independent variables are defined as follows:

- **Age range**—Age range of the participant.

- **Grade level(s)**—Grades taught by participant or supported through their work.

- **Length of membership in community**—The number of months the participant has been a member of the Brokers of Expertise Community

- **Length of time in education**—The number of years the participant has worked in education.

- **Length of time in position**—The number of years the participant has worked in their current position.
- **Motivation to join community**—The factors that contributed to the participant’s motivation to become a member of BoE.
- **School size**—The number of students enrolled at the participant’s school.
- **Subject(s) or topic(s)**—The subjects taught or topics of focus for the participant’s work.
- **Technical Efficacy**—Perceived efficacy using technology as indicated by their comfort level with computer technologies.

**Assumptions & Limitations**

Although BoE is promoted as a statewide teaching resource, the number of teachers participating in the online community is comparatively small. At the time of publication, the total number of educators was 8,595 and the number of individuals serving in the role of a group leader in the community was 1,140. The sample size along with the uniqueness of the BoE community may provide insight only into practices involving similar online communities. The qualitative strand of this study included 7 participants due to the scope of this study and time constraints. Surveys were distributed via email to all members of the online community in the quantitative strand of this study. In addition, data was only collected from current members of the BoE community. The perspective of educators who have not joined the community is not included in this study.

The researcher had an existing connection to BoE as he was product manager of the community from its initial development until fall 2012. The researcher also served as the primary trainer and consultant for agencies and groups using BoE. This relationship allowed the researcher first-hand knowledge of the inner workings of the community and
existing relationships that facilitated participation in the study. The researcher remained neutral while collecting and analyzing data, took steps to prevent existing relationships from impacting the study, and disclosed any biases he had to participants.

**Conclusion**

This study contains five chapters. Chapter 1 provided an overview and introduction to the study. The chapter included the problem statement, nature of the study, overview of the study’s theoretical framework, key definitions, assumptions, limitations, and the significance of the study.

Chapter 2 provides a thorough review of relevant literature focusing on three core areas related to the study of online communities of practice in education: professional networks and communities in education, professional social networking in education, and professional learning in education.

Chapter 3 details the research design of this mixed methods study, role of the researcher, research questions, and a detailed description of the setting, sample, instrumentation, materials, data collection, and analysis. Results of the study are presented in Chapter 4 along with interpretation and explanation of the data collected during the study.

Chapter 5 provides a summary of the findings as well recommendations for action and suggestions for future research.
Chapter 2

REVIEW OF RELATED LITERATURE

This review of literature focuses on three core areas related to the study of professional online communities in education. The first area of literature focuses on the development of professional social networks in education and will provide context and clarify the role of relationships in community building. The second area explored is an overview of research related to professional communities in education. This foundation will help in determining if the goals and outcomes of communities are maintained in the online environment. Previous studies have been conducted to determine drivers and barriers to social network and community participation. These studies will help inform this study of teacher participation in professional online communities in education. Finally, literature is presented that focuses on professional learning in education. These three areas of research will help focus the study to determine the drivers and barriers to teacher participation in professional online communities in education.

Professional Social Networking in Education

Educators often belong to professional associations, book clubs, and related groups that provide opportunities for professional social networking and collaboration with specific groups of other educators (U.S. Department of Education Office of Educational Technology, 2011). Through their connections with these groups, educators have access to the group’s resources and publications as well as opportunities to attend conferences and participate in a variety of group activities. The relationships developed through professional social networks have direct influence on an educator’s access to
information and resources (Bryk & Schneider, 2003), ability to participate in dialog (Coburn & Russell, 2006), access to support, and satisfaction with their profession (Baker-Doyle, 2011).

Social Network Theory

Coburn, Choi, and Mata (2010) describe social networks as an “emergent phenomenon” (p. 34). Social networks form as individuals enter into relationships with one another. Such networks are not natural or involuntary. Instead, social networks must be constructed by individuals who invest in, and anticipate potential benefits from, the relationship (Portes, 1998). Coburn, Choi, and Mata (2010) argue that the environment or organization also has an impact on relationships and social networks. Studying social networks and relationships helps us uncover trends in education such as retention, innovation, and leadership from the perspective of relationships that exist within large and small networks (Baker-Doyle, 2011).

Social network theory provides one theoretical framework for this study that helps frame the relationships educators form through participation in professional social networks and online communities in education. Social network theory examines ways in which social networks form and sees relationships as a key to understanding individual and group behavior (Muijs, Ainscow, Chapman, & West, 2011). Through these relationships we can observe similarities in location, membership and attributes; social relations such as friend, boss, student, sibling; affective and cognitive mental relations; interactions; and flows of information, beliefs, or resources.
Social network theory views a network as a set of nodes, such as people or groups, and a set of ties that connect them (Borgatti & Ofem, 2010; Muijs, Ainscow, Chapman, & West, 2011). Nodes can refer to individuals or groups of any size—from a small team to an entire organization or industry. Ties represent relationships of any type such as friendships, alliances, exchange in information or resources, or conflict. At the core of social networking theory is the idea that a node’s structural position—its position in the network—impacts the opportunities and constraints it will face. Relationships between nodes are not equal and the exchange between nodes may be greater for some than others (Daly, 2010; Muijs, Ainscow, Chapman, & West, 2011).

While social network theory provides a lens to study the relationships between individuals with a network the process is complicated by the contextual definition of roles (Muijs, Ainscow, Chapman, & West, 2011). Roles and relationships within the network are largely determined by the relationships between individuals and groups interacting with one another (Daly, 2010).

**Social Networks in Education**

Educational leaders and policy makers see professional social networks as a key to professional growth, relationship building, and support. Coburn and Russell (2008) found that policy plays a key role in influencing the development and structure of teacher social networks as well as the access to expertise and depth of interaction that occurs within networks. The U.S. Department of Education (2010) and many individual states have begun to implement policy to support the development and adoption of professional social networks to support new and experienced educators.
As we move into an era when colleges of education will be held accountable for the effectiveness of their graduates, these institutions can use personal learning networks to provide ongoing support once their graduates enter the workforce. (U.S. Department of Education Office of Educational Technology, 2011)

Understanding how individuals form relationships and exchange knowledge in social networks will help inform policy and guide educational leaders in making decisions that support the needs of educators. Understanding social networks and relationships in education will also help better understand what leads to membership and participation in professional communities (Coburn & Russell, 2006).

Once established, social networks can facilitate sharing of knowledge, increase problem solving, and lead to improved individual and organizational performance (Coburn, Choi & Mata, 2010). Professional social networks provide educators with access to information and expertise to support growth and development (Bryk & Schneider, 2003) as well as engagement in conversations around performance and improvement (Coburn & Russell, 2006). In addition, the ability to create “career-long networks” and more timely professional learning opportunities may help individuals develop stronger skills over time (U.S. Department of Education Office of Educational Technology, 2011). However, Coburn and Russell (2008) caution that creating more opportunities for teachers to connect has limited impact if multiple priorities compete for teacher time and attention.

The development of professional social networks has a direct influence on the retention, professionalism, and engagement of educators (Baker-Doyle, 2011). Coburn
and Russell (2006) found that interaction between educators increased when they had easy access to one another through physical proximity or formal structures that facilitated some form of exchange. In addition, teachers were more likely to interact with others who they perceived to have similar roles, grade levels, or environments.

Through professional networks, new teachers can gain access to one another, share resources and ideas, and other gain support needed during their first years in the profession (Baker-Doyle, 2011). However, new teachers often face the greatest challenges in forming supportive social networks. One in two new teachers leave the profession within their first five years of teaching. School environment and a lack of support are cited as reasons for teachers leaving (Ingersoll & Smith, 2004; Nieto, 2003). Those who remain will come to rely on their social networks for various forms of support throughout their careers. Not only do strong social networks increase the likelihood that educators remain in the profession, they lead to a greater sense of confidence and willingness to engage in dialog around issues of teaching and learning (Daly, 2010).

Johnson (2004) found that the ability to find and interact with experienced teachers and mentors within the network leads to increased confidence and retention. Warren Little (2003) found that teacher communities provide time and space to identify and expand on problems, explore new considerations and possibilities, reveal uncertainty, and solicit advice and comment from their peers. The study found these activities were “conducive to teacher learning and the improvement of teaching practice” (p. 938).
Relationships and Trust in Social Networks

Relationships formed through professional social networks also help facilitate communication and knowledge sharing in an organization. Relying only on formal channels of communication to spread information and knowledge may leave gaps in the organization, leading to lack of depth in conversations, and curriculum (Daly, 2010). However, social networks and informal relationships can also lead to undesirable effects such as miscommunication, misinformation, and loss of trust (Nguyen, Gangue, My, & Stephan, 2012).

Social network research also suggests that social networks influence how well and how quickly an organization’s change efforts take hold, diffuse, and sustain (Daly, 2010). Coburn (2001) found that social relationships among stakeholders play an important role in education reform and can encourage or thwart reform efforts. Teachers are more likely to trust members of their social network with whom they have had previous professional relationships (Coburn & Russell 2008). Kim and Ahmad (2013) support this statement by arguing that the concepts of trust and distrust are subjective opinions formed based on prior experience.

Coburn, Choi, and Mata (2010) suggest that social and organizational context can have an impact on an individual’s reasons for developing professional relationships and ties to social networks. The organization may promote relationships through established norms, structures, policies, or practices and may influence an educator’s perceptions of others. As a result, groups with shared goals, values, collaboration, focus, trust, and responsibility are more likely to embrace change (Coburn, 2001). Studies have found that
networking and community activities are more successful when organizational leaders encourage or require active membership and participation in the community (Wang & Chen, 2010; Coburn & Russell, 2006).

**Online Social Networking Tools**

Social network sites (SNSs) are Web sites that facilitate virtual networking and communication with online communities and help maintain connections over time and distance (Kim, Jeong, & Lee, 2010; Pai & Arnott, 2013). Sites like Facebook, MySpace, and Google+ allow individuals to connect, and maintain connections, with established networks through technology. Other tools including Ning, Edmodo, SocialGO, and Spruz make it possible to create your own social networking site and have greater control over content and access. Regardless of the platform, common functions of social networking sites allow individuals to “present themselves, articulate their social networks, and establish or maintain connections with others” (Ellison, Steinfield, & Lamp, 2007, p. 2).

**Participation in Social Networking Sites.** With most social networking sites, users begin by creating a personal profile, adding pictures, sharing personal information, and listing interests (Pai & Arnott, 2003). Duggan and Brenner (2013) found that young adults are more likely to participate in social networking sites. In their study, individuals between the ages of 19 and 29 were determined to be most likely to use social networking sites of any kind. Individuals living in urban settings were found to be significantly more likely to participate in social networking sites than those in rural areas. Foulger, Ewbank, Kay, Popp, and Carter (2009) found that social networking sites like Facebook are considered to be normal parts of social life for new teachers.
Pai and Arnott (2013) found the following significant forms of participation to emerge in a study of users of social networking sites: viewing profiles of other members, instant messages, uploading pictures, engaging in interactive online games, and customization of profile pages. Such forms of participation in social networks have been found to fulfill one’s social-emotional needs to connect and develop relationships with others (Rau, Gao, & Ding, 2008). Pai and Arnott (2013) also found that feelings of belonging, hedonism, self-esteem, and reciprocity emerged as gratifications among community participants. In addition, Fatemeh, Seyed Mohammad Reza, and Akbar Kary Dolta (2012) found that sense of community, individual inspiration, and shared knowledge lead to greater participation and success within social networking sites.

In addition to individual gratification one receives from participation in social networking sites, there are key benefits to providers of the technology. Through the use of social networking sites, an individual’s profile information and activity provide valuable information for further development, marketing, and policy. Foulger, Ewbank, Kay, Popp, and Carter (2009) state that common social networking sites like Facebook and MySpace are owned and operated by private entities. “Participants give up their rights to the information they post by agreeing to be a part of this online community” (p. 16).

Goal 3.2 of the U.S. Department of Education’s (2010) National Education Technology Plan addresses the potential benefits of social networking sites in education and leverages policy to promote networking and relationship building in education:
Leverage social networking technologies and platforms to create communities of practice that provide career-long personal learning opportunities for educators within and across schools, pre-service preparation and in-service educational institutions, and professional organizations. (p. xviii)

Such policy can have an influence on the development and adoption of social networks through official structure and direction that encourages the creation of relationships (Coburn, Choi, & Mata, 2010). Education leaders and policy makers can influence the use of social networking sites by providing tools and opportunities for teachers to engage and in return may have increased access to valuable data for decision making (Pai & Arnott, 2013).

**Challenges to Social Networking Sites in Education.** Foulger, Ewbank, Kay, Popp, and Carter (2009) present a series of ethical concerns related to social networking in education. The authors argue that social networking sites are an “uncharted landscape where legal systems have not yet established a precedent about how educational institutions should deal with the idea of social networking” (p. 2). Due to the perceived risks and lack of control over content and interactions on social networking sites, many schools have limited in-school access to social networking sites and social media. Blazer (2012) suggests that the restrictions are in place due to fears that students will be “exposed to inappropriate content, unwanted adult interactions, and bullying from peers” (p. 2.). Wang, Hsu, and Green (2013) argue that saying “no” to social media is not a solution to the problem. Recent PEW Internet & American Life Project reports show
significant use by youth and young adults. 93% of teens age 12-17 have a computer and access to the Internet at home and 74% have access to the Internet on a cell phone or other mobile device (Madden, Lenhart, & Duggan, 2013). 55% of teens and 83% of people between the ages of 18-29 use social networking sites (Duggan & Brenner, 2013; Lenhart, & Madden, 2007).

Wang, Hsu, and Green (2013) suggest that social networking sites can be valuable educational tools to teach social media etiquette and safety, digital citizenship, and media literacy. “It is essential to examine whether the platform addresses these concerns effectively and provides maximum control for teachers to monitor students’ online interaction” (p. 76). New teachers entering the profession are likely to embrace these ideas because they have more experience and comfort with the use of social media than their seasoned counterparts. However, Foulger, Ewbank, Kay, Popp, and Carter (2009) found a lack of consistent understanding among new teachers regarding professional ethics when it comes to social networking. There is a need for more instruction regarding professional ethics when it comes to the use of social networking technologies for students and educators alike.

Professional Communities in Education

Professional communities in education begin as early as pre-service training where socialization and collaboration between teachers is typically planned and compulsory. However, when teachers enter the field, this socialization and collaboration diminishes (Severage, 2009). Teachers find themselves working in isolation, independently managing their curriculum and classroom. Educators often reach out to
communities of practice, book clubs, professional associations, and other groups for networking opportunities and professional support (Daly, 2010; Baker-Doyle, 2011; Severage, 2009).

Grossman, Wineburg, and Woolworth (2001) suggest that most research conducted around communities tends to focus on existing groups and makes little distinction between a “community of teachers” and a “group of teachers” (p. 943). Recent literature has begun to differentiate communities from groups by defining key elements of a community as having shared values, purpose, or interest; social interaction and social ties; and agreed upon norms or expectations (Gaston-Breton, Duque, & Lado, 2009; Preece, 2010).

**Social Network vs. Community**

The underlying purpose of social networks is centered around people, social-emotional support, and relationships while communities tend to have a content or interest-driven orientation that centers around the exchange of content and information (Pai & Arnott, 2013; Rau, Gao & Dig 2008; Howard, 2010; Mayfield, 2005). See Table 1 for a comparison of characteristics of communities vs. social networks. A social network view places the individual at the center of relationships (Mujis, Ainscow, Chapman, & West, 2011). In a community, an individual’s relationship to others is secondary to his or her commitments to the interests, values, and communication practices of the community (Howard, 2010). From a community perspective, an individual makes a commitment to the group first and then individual members.
Interaction and exchange in a community will vary depending on the purpose of the group, leadership or facilitation, membership, and other factors. Shirky (2008) identifies the following three categories of activities are typical of community groups:

1. **Sharing**—the exchange of knowledge and information. Sharing requires the least amount of facilitation and organizational complexity. Howard (2010) describes sharing as the easiest activity and one that is ideal for social networks.

2. **Cooperation**—different individuals or small teams working toward a common goal. Howard (2010) adds that cooperation is a higher level task that requires stronger communication channels which are found in community groups rather than social networks.

### Table 1

*Characteristics of Communities vs. Social Networks Emerging in Literature*

<table>
<thead>
<tr>
<th></th>
<th>Communities</th>
<th>Social Networks</th>
<th>Source(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary focus</td>
<td>Group</td>
<td>Individual</td>
<td>Muijs, Ainscow, Chapman, &amp; West (2011)</td>
</tr>
<tr>
<td>Orientation</td>
<td>Content/information</td>
<td>Connections/relationships</td>
<td>Mayfield (2005)</td>
</tr>
<tr>
<td>Drivers</td>
<td>Topic/interest</td>
<td>People</td>
<td>Staples (2009)</td>
</tr>
<tr>
<td>Primary goal(s)</td>
<td>Information sharing; collaboration; action</td>
<td>Socio-emotional support</td>
<td>Rau, Gao, and Ding (2008); Howard (2010)</td>
</tr>
<tr>
<td>Typical exchanges</td>
<td>Strangers/unknown</td>
<td>Friends/acquaintances</td>
<td>Rau, Gao, and Ding (2008)</td>
</tr>
<tr>
<td>Commitment</td>
<td>Group</td>
<td>Individuals</td>
<td>Howard, (2010)</td>
</tr>
</tbody>
</table>
3. **Collective action**—large organizational structures such as unions, government agencies, corporations, and professional orgs setting policies or making agreements as a part of collective action. Higher level of complexity due to politics and emotional issues.

**Social Capital in Communities and Networks**

Social capital theory can serve as a foundation to understanding interactions in both social networks online communities (Daly, 2010). Bourdieu (1985) defines social capital as “the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance or recognition” (p. 248). Bacon (2009) lists terms such as “kudos,” respect, goodwill, trust, celebrity, influence, supremacy, greatness, and leverage as possible representations of social capital (p. 6). Moody and Paxton (2009) suggest examinations of social capital cannot occur without social networks as social capital is a result of the relationships, feelings, and interactions of social networks.

Social capital has become a common lens in social sciences to describe the benefits and potential benefits realized from the relationships one forms with members of their network and communities—also referred to as outputs of a social network or community (Baker-Doyle, 2011). Through this lens, we can describe and account for outcomes resulting from a non-monetary exchange between individuals and how such exchanges can lead to power and influence within communities (Coleman, 1988; Portes, 1998). Such outcomes can facilitate or constrain the actions of individuals and impact the community. From a social network standpoint, social capital can be seen as an output of
interactions within a network and is made up of the benefits as well as potential benefits realized by forming relationships one forms through interactions with members of their network (Baker-Doyle, 2011).

Coleman (1988) describes the concept of social capital through the analogy of “credit slips” which are exchanged through the interactions of individuals in a system (p. S102). In this analogy, an individual receives a “credit slip” when they do something positive for another individual or for the group. Accumulating more credit slips gives the individual a large amount of credit that they can use within the community or network as needed.

Looking at interactions through the lenses of social capital theory allows us to understand how resources—such as knowledge and information—are exchanged through professional network and community activities. The relationships a person has with other individuals or communities groups may support or restrict opportunities for resources to be shared (Daly, 2010). Social capital is created as individuals interact and share knowledge and resources (Bacon, 2009). Positive interactions can help build social capital and negative interactions can reduce social capital.

Bacon (2009) suggests that a community is fundamentally a social economy. Participants build social capital through their contributions and interactions with others in the community. Not all community members need to contribute for social capital to exist. However, Jenkins (2009) argues that all members must believe that they can contribute and that the community will value what they contribute.
Trust is an essential component for social capital to exist within networks and communities (Bacon, 2009). Community leaders and facilitators must gain the trust, support, and confidence of members in order for social interaction to increase. Members must also be aware of the possibilities for social interaction and of the knowledge and resources available within a community in order to realize any benefits (Portes, 2000).

**Types of Communities**

A number of types of communities are often the subject of research and discourse in education. Common community types identified in literature include *communities of practice, communities of inquiry, professional learning communities, and informal communities* (Grossman, Wineburg, & Woolworth, 2001; Lave & Wenger, 1991; Jones & Preece, 2006; Eckert, 2006; Servage, 2008; Dufour, 2004; Ackerman, Pipe, & Wulf, 2003).

**Community of Practice vs. Community of Inquiry.** The term *communities of practice* was introduced by Lave and Wenger (1991) to describe any group of people who engage around a common goal or activity on an ongoing basis. Such communities often emerge as a response to a “common interest or position” and are shaped by the participation of members (Eckert, 2006, p. 1). Jones and Preece (2006) differentiate between a *community of practice*, which they argue should be reserved for “those communities that typically exist in relation to companies or professional organizations” and have formal goals and structure, and a *community of inquiry* which they suggest “develop[s] organically,” are informal in structure, and typically open to members with similar interests (pp. 113-114).
Professional Learning Communities. *Professional learning communities*

(PLCs) are a specific type of community designed to provide opportunities for teachers to come together on a regular basis to collaborate and plan changes in curriculum, instruction, and evaluation (Servage, 2008). Ideally teachers in PLCs engage in conversations that focus on student learning and exploration of strategies to help struggling students (Elbousty & Bratt, 2010).

Dufour (2004), a strong advocate of PLCs, argues that educators working together in collaborative learning communities have greater impact on student learning than those who do not. Despite this argument in favor of PLCs, educators do not always embrace them. Some educators are enthusiastic about opportunities to collaborate with their peers while others consider them to be more work and have little effect on student learning (Elbousty & Bratt, 2010). For this reason, at many schools, teachers continue to work in isolation (Dufour, 2004).

Developing a strong sense of community is one way to overcome the challenges in establishing a PLC and encouraging teacher collaboration (Servage, 2008). Educators who are excited to work with others can champion engagement and help develop a community. Dufour (2004) argues that “a group of staff members who are determined to work together will find a way” and that others may be enticed to follow (p. 4).

Informal Communities. It is also important to note that communities can exist as unsanctioned or *informal communities* but have many of the same attributes and impacts of formal communities (Ackerman, Pipe, & Wulf, 2003).
Participation in Communities

Communities facilitate sharing of knowledge and information among individuals (Howard, 2010). The process of knowledge exchange involves members contributing knowledge to the community and seeking knowledge from the community for their own use (Hung, Lim, Chen, & Koh, 2008). Members participate in knowledge sharing in a community by asking and answering questions, making contributions, and responding to the contributions of others. Coburn and Russell (2008) found that interactions could vary greatly in the degree of depth from “swapping materials and activities to having substantive conversations about mathematical content or the nature of student learning” (p. 225).

While there a number of benefits to joining and participating in a community not all communities offer the same benefits to members (Shirky, 2008). Outcomes or benefits of belonging to a community are impacted by a number of factors including, group design, group leadership and facilitation, and member commitment and participation (Howard, 2010; Roberts, 2006; Eckert, 2006). Merely providing an opportunity to work together does not necessarily result in meaningful collaboration.

Online Communities

The use of online communication technology provides additional opportunities to engage with professional networks and communities (U.S. Department of Education Office of Educational Technology, 2011). Howard (2010) argues that people participating in online communities obtain access to conversations that no longer require geographical boundaries. Online communities are of particular interest in education due to their
potential for increased teacher engagement and interaction (Hur & Brush, 2009) and the potential to extend professional learning opportunities and dialog beyond specific space and time (Luehmann & Tinelli, 2008). Online communities can also intersect with and extend many traditional professional networks and professional learning opportunities (U.S. Department of Education Office of Education Technology, 2011).

Online communities, like any community, involve a group of people who gather based on shared values, social interaction, and social ties (Gaston-Breton, Duque & Lado, 2009). Preece (2010) defines online communities as groups of individuals who share a common purpose or interest, have established group norms or expectations, and use technology tools to interact socially. Howard (2010) argues that Preece’s definition does not capture the concept of organizational complexity and types of actions such as sharing, cooperation, and cooperative action that take place in online communities.

Unlike traditional communities, a key characteristic of online communities is the use of a computer-mediated common space (Preece, 2010). Professional associations, political organizations, and numerous other groups have formed online communities in response to the growth in popularity of online communication and collaboration tools (Serverage, 2009). In education, the development of online communities is often the focus e-learning initiatives focused on the use of online communities to support student learning.

Typical activities in online communities include sharing news and information, posting announcements, problem solving, and routine communication (Koh, Kim, Butler, & Bock, 2007). Online communities provide educators with opportunities for more
personalized, relevant, and timely professional communication and knowledge sharing and enable collaboration between educators and experts to improve student learning (U.S. Department of Education Office of Educational Technology, 2011; U.S. Department of Education, 2010). However, like any community, people join and remain members only when they find clear benefits for doing so (Howard, 2010).

Online communities provide to their members is anytime, anywhere collaboration, exchange of information, feedback. (Gupta & Kim, 2007). However, as with any type of community, these benefits can only be realized when members are committed to and participate in the community. An online community may use the right tools, have a well-designed platform, and focus, but if members do not participate, the community will not succeed (Bishop, 2007). Encouraging participation of members is one of the biggest challenges of an online community.

**Participation in Online Communities.** Engaging in communication, sharing ideas, and helping others are common forms of participation in online communities (Gupta & Kim, 2007). Jenkins (2009) states that participation in online communities provides a number of benefits including increased opportunities for peer-to-peer learning, change in attitude toward intellectual property, diverse cultural expression, development of 21st century skills, and a greater sense of belonging. Preece (2001) suggests that the number of messages posted by members of a community reflects the engagement of members and effectiveness of the community tools provided. However, Preece, Nonnecke, and Andrews (2004) recognize that a small number of the members are responsible for the majority of contributions to a community.
Bishop (2007) defines four typical types of participation in online communities:

1. **Lurkers**: Those who are members of a community but do not take participatory action.

2. **Novices**: New members of a community who participate.

3. **Regulars**: Individuals who participate in the community with a desire to be social and creative.

4. **Leaders**: Individuals who participate in the community and regularly share knowledge, facilitate conversation, and focus communication.

Gaston-Breton, Duque, and Lado (2009) identify motivation to participate in an online community as a result of either individual- or group-level needs. In their study, Gaston-Breton, Duque, and Lado proved that the following six reasons for participation, previously identified by Blanchard and Markus (2004), had a significant positive impact on an individual’s satisfaction with the virtual community:

1. **Recognition** of the other community members.

2. **Support** through the exchange of information and ideas of community members.

3. **Identification** with other community members.

4. **Attachment** that the individual feels toward the community.

5. **Relationship** through the “friendship” developed between community members.

6. **Obligation** felt by the member to maintain their participation.

Gaston-Breton, Duque, and Lado (2009) further argue that satisfaction leads to loyalty, retention, and commitment to a community. Dissatisfaction leads to exit or negative feelings about a community.
The six reasons to participate can be categorized into informational/functional goals and social goals. Gupta & Kim (2007) describe the primary reasons to participate as informational or functional goals, which include the ability to gather information, share knowledge, or share interests. Secondary reasons for participation are social oriented goals including the approval, recognition and respect that an individual receives from the community.

When considering the relationship between an individual’s satisfaction and commitment to a community, other factors must also be considered. Bateman (2008) suggest that the duration of membership in a community impacts an individual’s commitment. An effective way to get new members to participate is for “elder” members to nurture and encourage them (Bishop, 2007). In addition to duration of membership, De Valck, Langerak, Verhoef, and Verlegh (2007) suggests that an individual’s satisfaction with a community directly relates to their satisfaction with the interactions that take place in the community. These interactions can be categorized as member-to-member, member-to-organizer, and organizer-to-community. An increase in satisfaction with interaction has been shown to lead to an increase in frequency of visit, which in turn leads to an increase in duration of membership.

Jenkins (2009) suggests that communities with “participatory culture” have the following characteristics:

- Low barriers for participation, expression, and engagement
- Support for sharing with others
Informal mentorship; knowledge is passed from experienced members to novice members

- Members believe that contributions matter
- Feeling of social connection between members

An overarching theme found in participatory culture is a shift from the focus on individual expression to community involvement.

**Barriers to Participation in Online Communities.** Like other communities, members of online communities often will not participate due to fear of “looking foolish” to other members of the community or damage their reputation or professional status (Howard, 2010, Ch. 4, Section 7). Members are more likely to contribute if they believe their contribution will be received positively and will not open them up to critique.

Lurkers typically take a passive role in an online community and can be viewed as consumers rather than contributors to the group (Bishop, 2007). Preece, Nonnecke, and Andrews. (2004) found the following reasons for group members to be lurkers rather than active contributors: they can get what they want without needing to contribute, lack of encouragement to post, lack of incentives to post, they did not see value in their contributions, desire to get to know group first, technical issues, lack of knowledge, usability of community software, lack of fit with group, desire to remain anonymous. Lurkers may not be a concern for communities unless there are few contributions being made in the community.

An additional challenge with online communities is that they are typically designed from an English-speaking world’s point of view (Hannon & D’Netto, 2007).
For this reason, we tend to see less participation from members of different cultural or language groups. The lack of face-to-face communication poses problems to intercultural communication (Chase, Macfadyen, Reeder, & Roche, 2002). For these reasons, people whose primary language is not English have more negative perceptions of online communication (Hannon & D’Netto, 2007).

These factors may be contributing to a lack of diversity of users in Brokers of Expertise. While attempts have been made to recruit teachers from across the state, and actual demographics are not yet available, BOE membership may not reflect the racial and ethnic diversity of the education community in California (J. Ortega, personal communication, March 28, 2011). Ogbu and Simmons’ (1998) Cultural-Ecological Theory of Minority School Performance explains that barriers often lead minority groups to feel mistreated in education which leads to negative perceptions of the system. If we are unable to recruit, support, and represent diverse educators in such a high profile project, we may face similar perceptions from minority educators.

**Effective Practices for Facilitating Online Communities.** A number of previous studies have focused on identifying characteristics of effective online communities (U.S. Department of Education, 2011; Koh, Kim, Butler, & Bock, 2007; Bourhis, Dubé, & Jacob, 2005; Jones & Preece, 2006; Booth, 2011; Lazar & Preece, 2002; Gupta & Kim, 2007; Hung, Lim, Chen, & Koh, 2008; Bishop, 2007). Many of the studies focused on general online communities or online communities in other sectors such as business or technology. In its report *Connect and Inspire: Online Communities of Practice in Education*, the U.S. Department of Education Office of Educational Technology (2011)
generalized a series of recommendations for educational communities. The recommendations made by the studies of online communities as well as those made by the U.S. Department of Education generally fall into the following categories:

**Design.** Online communities need to have a clear purpose and identity that suits the needs of the defined target audience and the short-, intermediate-, or long-term goals of the community (U.S. Department of Education, 2011; Koh, Kim, Butler, & Bock, 2007). In addition, online communities need to provide a clear definition of member roles and expectations. Online community design should accommodate natural growth by starting simple and increasing in use and features over time. The U.S. Department of Education Office of Educational Technology (2011) describes this approach as essential to avoid “overbuilding” which may overwhelm participants (p. 30).

**Leadership and Moderation.** Characteristics of effective online community leaders include passion, content expertise, communication skills, experience moderating online groups, and the ability to build alliances (Bourhis, Dubé, & Jacob, 2005; Jones & Preece, 2006; Booth, 2011). The U.S. Department of Education Office of Educational Technology (2011) adds that “effective leadership is active leadership” (p. 14). Online community moderators who start and “seed” discussions and model desired participation are a critical success factor for the success of an online community (Lazar & Preece, 2002; Koh, Kim, Butler, and Bock, 2007). Additional roles performed by leaders are networking, “evangelizing,” and recruiting members through the use of multiple outreach and communication approaches (U.S. Department of Education Office of Educational Technology, 2011, p. 20).
Participation. Gupta and Kim (2007) characterize participation in an online as communication, sharing knowledge, sharing ideas, and responding to others. An online community may use the right tools, have a well-designed platform, and focus, but if members do not participate, the community will not succeed. (Bishop, 2007).

Encouraging participation of members is one of the biggest challenges of an online community. Trust is a key factor influencing participation in an online community (Hung, Lim, Chen, & Koh, 2008). Trust implies a degree of belief in good intentions, competence, and reliability of community members.

Utility. Online communities must provide benefits that surpass the costs of membership (Butler, 2001). When community members perceive a community and its content to be more useful to them, they tend to access and explore material more often. Increasing utility and commitment to an online community is one strategy for strengthening participation. The U.S. Department of Education Office of Educational Technology (2011) suggests that integration within a larger professional environment such as partnerships with existing organizations or groups or connecting with key initiatives or events increases utility of the community and has a positive effect on participation.

Technology Infrastructure and Usability. Appropriate technology infrastructure is at the foundation of an effective online community. Inadequate technology tools and features will serve to constrain communication activities and stifle online community activity (Koh, Kim, Butler, & Bock, 2007). Technology needs to be appropriate, accessible, and useable. Jones & Preece (2006) define usability the ability for members to
“interact successfully with technology across the human–computer interface” (p. 118).

Usability needs across various types of communities tend to be similar: ease of navigation, the ability to find information, consistent layout, communication and collaboration tools, and a safe environment (Jones & Preece, 2006).

**Professional Learning in Education**

No Child Left Behind and subsequent legislation called for an increased focus on highly qualified teachers (Goldschmidt & Phelps, 2007; NCLB, 2002). Teacher professional development continues to be a common approach to improving teacher quality with a proven relationship between teacher learning, instructional improvement and student learning (Buczynski & Hansen, 2010). Despite this knowledge, Goldschmidt & Phelps (2007) find that the application of teacher professional development continues to be varied and often ineffective in providing lasting change in teacher quality.

Teacher professional development opportunities typically come in the form of induction programs for new teachers and on-going professional development focused on topics including instructional strategies, curriculum, evaluation, classroom management, and subject matter expertise (Buczynski & Hansen, 2010). This final section of the literature review focuses on the concept of social learning which provides a lens by which we can explain many approaches to professional development as well an overview of three common forms of professional development that exist within our education system today.
Social Learning Theory

Much of teacher professional development is centered on a model where experienced educators provide instruction or models to their peers. Bandura (1969) provides a framework by which we can explain how people learn within a social context that is facilitated by providing models and observation. In his social learning theory, Bandura (1977) argues the following:

Most human behavior is learned observationally through modeling: from observing others one forms an idea of how new behaviors are performed, and on later occasions this coded information serves as a guide for action. (p. 22)

Under social learning theory, people respond to models that demonstrate behavior as well as instruction or guidelines on how to engage in the behavior (1969). Individual behavior is reinforced through feedback including internal and self-reinforcement. Lankshear & Knobel (2011) draw parallels between social learning theory and Friere’s (2000) ‘conscientization’ pedagogy as both involve collective reflection and dialog in response to behavior. Under both perspectives, when people match the desired behavior then the social learning process reinforces the behavior through socialized feedback. This model applies to both face-to-face and online environments.

Bandura’s (1969) suggestion that providing social models is a valuable way to for individuals to learn has been expanded by recent authors to focus more on the social context of learning that involves learning from each other “in ways that benefit wider social-ecological systems” (Reed et al., 2010 p 2). This perspective draws from other
learning theories including Kolb’s (1984) experiential learning theory and Lewin’s (1939) concepts about social psychology.

Reed et al. (2010) suggests that in considering social learning environments it is important to distinguish the concept of social learning from the tools through which social learning is facilitated. Communication technologies such as social networking sites and online communities have the potential to foster new and innovative social learning environments. However, without substantive interaction and content, any efforts to foster social learning will fail.

**New Teacher Induction Programs**

Research demonstrates that support for new teachers is critical as they are often placed in more difficult classroom environments, isolated in their work, and left to succeed or fail on their own (Ingersoll & Strong, 2011; Rochkind et al., 2007). These challenges contribute to high turnover among new teachers and may be reduced by the developing supportive social networks and communities for professional support (Durn, 2010; Baker-Doyle, 2011). The increasing number of new teachers over the past two decades has lead to a high need for support and an increase in demand for new teacher induction programs (Ingersoll, 2012).

Nasser-Abu Alhija and Fresko (2010) state that teacher induction programs are designed to address these difficulties by supporting teacher socialization. These programs aim to provide guidance as new teachers transition to the classroom and to facilitate the development of social networks (Ingersol, 2007; Ingersoll & Smith, 2004). In many induction programs, teachers are matched with mentors with whom they work over a
course of time. How teachers are matched with mentors and the level of engagement varies by program. Nasser-Abu Alhija and Fresko (2010) found that 54% of new teachers in their study were left to find their own mentors and 40% initiated mentoring sessions on their own. However, the authors reported that participants had a moderately high level of satisfaction with the induction experience.

Bartlett and Johnson (2009) found that teacher induction policy and funding varies from state to state. The mandate for induction in Illinois is stalled until funding can be allocated. Induction is tied to credentialing in Wisconsin but no funding is provided to support the mandate. Ohio mandates induction and provides funding to support requirements. The authors argue that a lack of state funding and instability of induction programs from state to state may lead to a lack of preparation for new teachers greater inequities between high and low poverty schools.

Beginning Teacher Support and Assessment (BTSA) is a new teacher induction program sponsored by the California Department of Education (CDE) and Commission on Teacher Credentialing (CCTC) and designed to provide guidance, professional development and support to new teachers in California (Beginning Teacher Support & Assessment, 2008). The BTSA model engages new teachers in “job-embedded” professional development that fulfills the requirements for a clear teaching credential in the State of California (p. 1). In during the 2009-2010 school year, BTSA supported 17,991 participating new teachers with 8,020 support providers (mentors) (Beginning Teacher Support & Assessment, 2010). 94% of the support providers involved in BTSA during that year had taught 6 or more years.
Instructor-led Professional Learning

Hardy (2012) suggests that state-sanctioned, short-term professional development activities are a primary mode of professional development due to the “business of teachers’ work” (p 105). Educators often attend workshops lead by other educators or consultants to learn new instructional strategies, or new curriculum, evaluation strategies, and approaches classroom management (Buczynski & Hansen, 2010). Much of this training is just-in-time as a response to changes in curriculum and policy. Recent changes that have lead to increased need and opportunities for professional development include the introduction of Common Core Standards and new standards for English Language Development (Porter, McMaken, Hwang, & Yang, 2011; Maxwell, 2012).

One strategy for increasing the effectiveness of teacher professional development is to encourage teachers to reflect on their own teaching practice (Buczynski & Hansen, 2010). However, this reflection is often overlooked due to a teacher’s workload, lack of time, and the isolation in which teachers typically work.

A downfall of typical professional development opportunities is that the knowledge gained is does not last long after the experience. Goldschmidt & Phelps (2007) found that teachers tend to forget what they learn and that traditional classroom experience and professional development follow-ups do not help in retaining the knowledge gained. In order for these opportunities to be effective, teachers must be able to put their experience into practice in the classroom (Buczynski & Hansen, 2010).
Professional Learning Communities

Professional learning communities (PLCs) in education provide teachers with access to ideas and resources as well as networks of others with whom they may engage (Cooper & Stewart, 2009). PLCs are a specific type of community designed to provide opportunities for teachers to come together on a regular basis to collaborate and plan changes in curriculum, instruction, and evaluation (Servage, 2008). Ideally teachers in PLCs engage in conversations that focus on student learning and exploration of strategies to help struggling students (Elbousty & Bratt, 2010). The common interest of a PLC is to develop strategies that enhance student learning.

Durn (2010) argues that creating professional learning communities for teachers is the first step for creating classroom communities and fostering an effective learning environment. Additionally, teacher communities help reduce isolation and improve the first year experience. Dufour (2004), a strong advocate of PLCs, argues that educators working together in collaborative learning communities have greater impact on student learning than those who don’t. Despite this argument in favor of PLCs, they are not always embraced by educators. Some educators are enthusiastic about opportunities to collaborate with their peers while others consider them to be more work and have little effect on student learning (Elbousty & Bratt, 2010). For this reason, at many schools, teachers continue to work in isolation (Dufour, 2004).

Developing a strong sense of community is one way to overcome the challenges in establishing a PLC and encouraging teacher collaboration (Servage, 2008). Educators who are excited to work with others can champion engagement and help develop a
community. Dufour (2004) argues that “a group of staff members who are determined to work together will find a way” (p. 4) and that others may be enticed to follow.

**Online Professional Learning & Development**

Another strategy for increasing the effectiveness of teacher professional development is to utilize online professional development or hybrid approach that blends face-to-face meetings and online activities (Brooks, 2010). While this approach has not gained significant traction in K-12 education, it has become common in higher education faculty development. Online professional development activities that include educator collaboration appeal to those who need assistance, want to build knowledge and skills beyond normal teaching hours, and provide a space for those who are hesitant or unable to make social connections in the face-to-face environment.

Online learning utilizes computer-mediated communication tools in a shared space (Pentina, Prybutok, & Zhang, 2008). Unlike traditional learning environments, online instruction allows members to enjoy anytime, anywhere learning, collaboration, exchange of information, feedback (Gupta & Kim, 2007). However, online learning requires participants to be familiar with technology and often require greater commitment on behalf of participants. Brooks (2010) suggests that online learning communities can benefit from a hybrid approach that supplements, rather than replaces, face-to-face meetings.

**Conclusion**

Socialization and collaboration are strong components of pre-service training and teacher preparation. However the reality is that this socialization and collaboration
diminishes when teachers enter the field. Teachers often find themselves working in isolation, independently managing their classroom and curriculum and neglecting opportunities for reflection due to workload and lack of time.

Research shows that social networks and socialization have a direct impact on the professionalism, engagement, and retention of educators. Online social networking sites and online communities have the potential to strengthen overcome traditional challenges of isolation, workload, and time by providing new and more flexible opportunities for networking and professional development activities.

Chapter 3 provides an overview of the methodology by which this mixed methods study will examine trends in professional online community use among educators and uncover drivers and barriers to participation as well as strategies for increasing participation.
Chapter 3

METHODOLOGY

This chapter describes the research design, role of the researcher, research questions, and a detailed description of the setting, sample, instrumentation, materials, data collection, and analysis. The purpose of this mixed-methods study was to identify the drivers and barriers to participation in professional online communities in education. Subsequently, the results of this study provide strategies designed to increase educator participation in online communities. Specifically, this study will attempt to answer the following questions:

Research Question #1: What are the drivers and barriers to participation in professional online communities in education?

Research Question #2: Which, if any, of the following factors predict greater participation in online communities of practice in education:

- age range
- length of membership in community
- number of years in current position
- number of years in education
- perceived technology efficacy
- school size

and which of the following factors influence participation in online communities in education:

- grade level(s)
motivation to join community

subject(s)/topic(s)

Research Question #3: What design and facilitation strategies can be used to encourage participation in professional online communities in education?

Research Design

By employing an exploratory sequential design, this mixed-methods study began with qualitative data collection and analysis that then informed the design of quantitative data collection and analysis before final interpretation (Creswell & Clark, 2006). Implementation of qualitative and quantitative strands occurred over two distinct phases where the design and conduct of the quantitative strand depended on the results of the qualitative strand. The quantitative strand was designed to test and generalize the initial findings from the qualitative strand and interpret how the quantitative results build on the initial responses.

As discussed in Chapter 2, studies by Preece & Maloney-Krichmar (2005), Li (2011), Bettoni, Andenmatten, and Mathieu (2007), and Bishop (2007) have focused on theoretical and practical design strategies for online communities as well as discussion about increasing commitment and participation in online communities. The study expands on previous work through a mixed-methods exploratory sequential research design that strengthens findings by incorporating multiple perspectives (Creswell & Clark, 2006). Input from both groups not only confirmed drivers and barriers to participation but also identified other factors that can predict group participation as well as strategies group facilitators can use to maximize participation.
Bryman (2006) argues that employing both qualitative and quantitative approaches serves to increase the integrity of findings by providing a more comprehensive analysis where findings may be triangulated so that they may be “mutually corroborated” (p. 106). In addition, the strengths of each research method may serve to offset weaknesses of the other.

Research Question #1 and #3 are of a qualitative nature and sought input from group facilitators to identify additional variables to be evaluated. Research Question #2 required a quantitative multivariate analysis using multiple linear regression as well as correlation analysis to determine which variables, if any, impact participation in professional online communities in education (Muijs, 2004). Multiple linear regression helps discover the relationship between the dependent variable participation and the following independent variables: length of membership on BoE, school size, length of time in position, length of time in education, age range, and perceived technology efficacy (p. 160). Regression analysis will determine if independent variables alone or together can predict the dependent variable. Because the variables grade level, subject/topic, and motivation to participate were bivariate, a Pearson correlation analysis was conducted to determine the relationship between each grade level or subject/topic and the dependent variable participation. Correlation analysis determines strength and direction of the relationship between variables.

**Role of the Researcher**

The researcher was the primary person collecting and analyzing data for this study. In addition, the researcher also served as the primary project manager for the
Brokers of Expertise online community until fall 2012. In such role, he had direct access to site usage reports and existing data collected about the online community. This relationship also facilitated increased interest and participation in the study. The researcher remained neutral while collecting and analyzing data, took steps to prevent existing relationships from impacting the study including providing for anonymous participation, and disclosed any biases he had to participants.

Setting & Sample

The setting for this study was the BoE online community (www.myboe.org) which is comprised of educators in the state of California. Participants were educators who lead or participated in online community groups within the BoE community. The population of this study included all 8,595 members of the Brokers of Expertise community. Members of the community may indicate multiple grades and/or subjects in their profile. Figure 3 provides a breakdown of BOE members by subject and Figure 4 provides members by grade level.

The qualitative strand focused on collecting data through interviews with seven participants who served in the role of group facilitator for one or more online community groups in BoE. Interview participants were purposefully sampled based on their experience as an online group leader or facilitator. Each participant had a minimum of two years experience in a group leader role. The quantitative strand involved the distribution of an online survey to all members of the BoE community. Random probability sampling was used to select members to include in the study. Participation in both the qualitative and quantitative strands was completely voluntary.
Figure 3. Number of BoE Members by Subject/Topic. This figure illustrates the number of BoE community participants for each subject/topic area.

Figure 4. Number of BoE Members by Grade Level. This figure illustrates the number of BoE community participants for each grade level.
Instrumentation & Materials

The qualitative strand focused on collecting data through thirty-minute interviews with 7 participants who have served in the role of online group facilitators. Interviews took place in-person and by phone and were recorded using an iPad with eFUSION Co.’s Voice Recorder HD application for subsequent transcription and analysis. Interview questions were based on drivers and barriers to online community participation and facilitation strategies as identified in the literature. Reliability of the instrumentation used during the qualitative strand was increased through careful peer-review of interview transcripts, cross-checking data with codes during review, and member checking.

The quantitative strand focused on collecting data by using an online survey instrument that was developed by the researcher as well as gathering existing site usage data. The questions included on the online survey were based on the data collected during the qualitative strand. Surveys were distributed via e-mail to all members of the BoE community. Reliability of the instrumentation used during the quantitative strand was increased through construct validity as the questions directly correspond with variables of the study. Existing Web site tracking and usage data was obtained from the site network administrators. The tracking and use data information provided additional data on participant demographics, tools access and use, and activity within groups.

Data Collection & Analysis

Interviews of group leaders was transcribed and coded to uncover themes that resulted in the identification of additional independent variables, which informed the design of surveys for group participants. Analysis of the qualitative data involved
identifying segments in the data that are responsive to the research questions and organizing them into themes through a process called “open coding” (Merriam, 2009, p. 178). The goal of open coding was to generate categories of information from the data from the qualitative strand to answer Research Question #1: What are the drivers and barriers to participation in professional online communities in education? and Research Question #3: What design and facilitation strategies can be used to encourage participation in online communities of practice in education?

Data collected during the quantitative strand was entered into the Statistical Package for the Social Sciences (SPSS) software. For scale variables, a multiple regression analysis was conducted in order to determine whether or not there are significant relationships among variables, as well as whether or not one or more variables may be a significant predictor(s) of participation in online communities. Pearson correlation analysis was conducted to determine the relationship between bivariate variables and the dependent variable participation. The qualitative analysis was used to answer Research Question #2: Which, if any, of the following factors predict participation in online communities of practice in education: school size, length of time in education, length of time in current position, age range, or perceived technology efficacy? And which of the following factors impact participation in online communities: grade level(s), motivation to join community, or subject(s)/topic(s)?

Protection of Participants

The design of this study, including data collection procedures, survey instruments, consent forms, and interview questions were approved by the dissertation chair, Brokers
of Expertise administrative agency, and Sacramento State Human Subjects Committee before any data was be collected. Participation in this study was completely voluntary and the names of all participants were not collected or identified through interviews or surveys. All forms and data collected as a result of this study will be destroyed twelve months after the submission of this study to the university.
Chapter 4

ANALYSIS OF THE DATA

Chapter 4 presents the results of this study’s qualitative interview data and quantitative survey and site usage data collection and analysis. The first part of this chapter provides an overview of the mixed methods design used to analyze data. Part two presents qualitative and quantitative data that address Research Question #1: What are the drivers and barriers to participation in professional online communities in education? Part three presents quantitative data to address Research Question #2: Which, if any, of the following factors predict participation in online communities of practice in education: school size, length of time in education, length of time in current position, age range, or perceived technology efficacy? And which of the following factors impact participation in online communities: grade level(s), motivation to join community, or subject(s)/topic(s)? The fourth part presents quantitative data that addresses Research Question #3: What design and facilitation strategies can be used to encourage participation in online communities of practice in education? This chapter concludes with a summary of each research question.

The purpose of this study was to identify factors influencing participation in professional online communities in education and uncover strategies for increasing participation. This study centered on Brokers of Expertise, an online community for educators developed by the California K-12 High Speed Network and California Department of Education. Recommendations are made in order to examine factors that influence participation and identify facilitation strategies to increase participation.
Research Question #1:

To address Research Question #1: What are the drivers and barriers to participation in professional online communities in education? both qualitative and quantitative data were collected through an exploratory sequential design—beginning with qualitative data collection and analysis, which informed the design of quantitative data collection and analysis, before final interpretation (Creswell & Clark, 2006). Implementation of qualitative and quantitative strands occurred in two distinct phases where the design and conduct of the quantitative strand was dependent upon the results of the qualitative strand.

Qualitative Strand

The qualitative strand focused on collecting data through 30-minute interviews with 7 participants who have served in the role of online group facilitators. Table 2 provides a brief profile of each participant.

Table 2

<table>
<thead>
<tr>
<th>Participant</th>
<th># of Groups Lead</th>
<th>Length of Time as Leader</th>
<th>Intended goals for online group(s) lead by participant</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Resource Sharing</td>
</tr>
<tr>
<td>1</td>
<td>33</td>
<td>2.5 years</td>
<td>X</td>
</tr>
<tr>
<td>2</td>
<td>24</td>
<td>2.5 years</td>
<td>X</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>2.5 years</td>
<td>X</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>2 years</td>
<td>X</td>
</tr>
<tr>
<td>5</td>
<td>2</td>
<td>2 years</td>
<td>X</td>
</tr>
<tr>
<td>6</td>
<td>7</td>
<td>3 years</td>
<td>X</td>
</tr>
<tr>
<td>7</td>
<td>14</td>
<td>3 years</td>
<td>X</td>
</tr>
</tbody>
</table>
Interviews with the 7 group leaders took place in-person and by phone and were recorded using an Apple iPad with eFUSION Co.’s Voice Recorder HD application for subsequent transcription and analysis. The transcripts were subsequently coded to uncover themes that resulted in the identification themes that became additional independent variables that were included in the design of surveys for group participants. Analysis of the qualitative data involved identifying segments in the data that were responsive to the research questions and organizing them into themes through a process called “open coding” (Merriam, 2009, p. 178). Themes identified from each interview were collated and sent back to interview participants by email for member-checking to ensure reliability of the instrumentation used.

The outcome of the qualitative strand was a list of categories of factors that hinder participation in online communities (barriers) and those that encourage participation in online communities (drivers). The following tables 3 and 4 list the themes that emerged from interviews as well as evidence in the form of statements made during interviews. Table 3 lists the barriers to participation in online community groups. Table 4 lists the drivers of participation in online community groups.
### Table 3

**Barriers to Participation in Online Community Groups: Themes Emerging from Qualitative Interviews in Response to Research Question #1.**

<table>
<thead>
<tr>
<th>Theme</th>
<th>Evidence from qualitative interviews</th>
<th>Number of participants</th>
</tr>
</thead>
</table>
| Lack of community activity: I do not see others sharing resources on the site. | • Discussions are not active or engaging  
• Primary interest was accessing resources not sharing or networking | 4 and 3                |
| Lack of training: I do not know how to share ideas or resources with the community. | • Do not know how to share  
• Did not know they could share | 3 and 2               |
| Lack of awareness: I was not aware that I could share my own ideas or resources with my community group. | • Did not see sharing to be their role (saw it as a leader's role)  
• Easy to forget that it's even there | 2 and 1              |
| Fear of criticism: I do not want my ideas or resources to be criticized by others in the community. | • Fear of criticism, being judged | 2                     |
| Technology issues: The site/technology is too difficult to use. | • Infrequent use leads people to forget how to complete tasks—it is not a "habit" like email or social media tools  
• Process for sharing resources is too cumbersome  
• Site navigation is cumbersome/not intuitive  
• Communication tools are too cumbersome/confusing  
• Lack of comfort with technology  
• Site registration/login is too cumbersome  
• Lack of access to technology/internet in the classroom  
• Lack of an App | 6 and 5, 4, 3, 2, 2, 1, 1 |
| Lack of leadership: I do not know what is expected for my participation in the community. | • Lack of group identity / lack of cohesion in group  
• Lack of leadership | 3 and 1              |
| Time: I do not have time to share my ideas or resources with others on the site. | • Time  
• Competing priorities | 6 and 3              |

*(Table 13 Continues)*
(Table 3 Continued)

**Barriers to Participation in Online Community Groups: Themes Emerging from Qualitative Interviews in Response to Research Question #1.**

<table>
<thead>
<tr>
<th>Theme</th>
<th>Evidence from qualitative interviews</th>
<th>Number of participants</th>
</tr>
</thead>
</table>
| Lack of trust: I do not know or trust other members of the community enough to share my ideas. | - Communication from the site is not personalized (email comes from webmaster not a familiar person); lacks identity  
  - Reluctance to interact/communicate with incomplete or blank profiles  
  - Lack of trust in the community                                                                 | 3                      |
| Lack of value: I do not see the value in sharing my ideas or resources with others on the site. | - May not see the value in ideas or participation  
  - Primary interest was accessing resources not sharing or networking  
  - Lack of incentives                                                                 | 5                      |
Table 4

**Drivers of Participation in Online Community Groups: Themes Emerging from Qualitative Interviews in Response to Research Question #1.**

<table>
<thead>
<tr>
<th>Theme</th>
<th>Evidence from qualitative interviews</th>
<th>Number of participants</th>
</tr>
</thead>
</table>
| Networking: I want to network and exchange ideas with other educators who have similar interests. | • Desire to network/connect with other teachers  
• Being a member of multiple groups  
• Strong affiliation with group/members | 3  
1  
1 |
| Recognition: I want to be recognized by the community as someone who shares ideas and resources. | • Recognition from the community for sharing ideas/resources  
• Recognition by your administration as someone who is active in your field  
• Recognition through a certificate of completion or badge | 4  
1  
1 |
| Professional development: I am interested in the subject matter, content, and activities of the group. | • Interest in the subject/content of group  
• Desire to for professional development/growth | 3  
2 |
| Strong leadership: I am encouraged by leaders of the community to share my ideas and resources. | • Encouragement from other members or leaders on the site  
• Strong direction and identity of group  
• Providing one central place for the group's communication and resources | 1  
1  
1 |
| Requirement: I was required to participate by my program or project. | • The need to complete assignments/tasks  
• Program requirement to participate | 2  
1 |
| Knowledge Sharing: I want to help my colleagues by sharing my own ideas and resources. | • Nature of education is sharing  
• Wanting input/voice to be heard | 4  
1 |
| Interest in technology: I am interested in trying new technology and exploring new resources. | • Received prior instruction on using site  
• Interest in learning new technology  
• Previous experience using online tools | 3  
2  
1 |

Final themes emerging from the qualitative strand were included in a survey (Appendix B) that was distributed to all members of the BoE community. Table 5 lists the themes that subsequently became additional variables for this study and were included on the survey used for the quantitative strand.
Table 5

Variables Used in the Analysis.

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Independent Variables Reported to Hinder Participation (Barriers)</th>
<th>Independent Variables Reported to Encourage Participation (Drivers)</th>
</tr>
</thead>
</table>
| Participation in online community. | 1. Time: I do not have time to share my ideas or resources with others on the site. *  
2. Technology issues: The site/technology is too difficult to use. *  
3. Lack of trust: I do not know or trust other members of the community enough to share my ideas. *  
4. Lack of value: I do not see the value in sharing my ideas or resources with others on the site. *  
5. Lack of awareness: I was not aware that I could share my own ideas or resources with my community group.  
6. Fear of criticism: I do not want my ideas or resources to be criticized by others in the community. *  
7. Lack of training: I do not know how to share ideas or resources with the community.  
8. Lack of community activity: I do not see others sharing resources on the site.  
9. Lack of leadership: I do not know what is expected for my participation in the community. | 1. Networking: I want to network and exchange ideas with other educators who have similar interests.  
2. Recognition: I want to be recognition by the community as someone who shares ideas and resources.  
3. Professional development: I am interested learning by engaging in the subject matter, content, and activities of the group.  
4. Requirement: I was required to participate by my program or project. *  
5. Knowledge Sharing: I want to help my colleagues by sharing my own ideas and resources.  
6. Interest in technology: I am interested in trying new technology and exploring new resources. |

*No significant correlations found with this variable

Quantitative Strand

Data collected during the quantitative strand of this study was entered into the Statistical Package for the Social Sciences (SPSS) software. A Pearson Correlation analysis was conducted in order to determine whether or not there are significant relationships between the dependent variable participation and the independent variables listed in the Table 5.
Questions 14 of the survey asked participants to indicate which of the themes reported as barriers prevented their participation in community group activity on BoE.

Table 6 displays significant correlations found between the dependent variable participation and the independent variables reported to hinder participation (barriers) in online community groups.

Table 6

Significant Correlations Between Barriers and Online Community Participation

<table>
<thead>
<tr>
<th>Variables with significant correlations</th>
<th>$r$</th>
<th>$p$</th>
<th>Effect Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Lack of awareness: I was not aware that I could share my own ideas or resources with my community group.</td>
<td>-.184</td>
<td>$p &lt; .01$</td>
<td>Low</td>
</tr>
<tr>
<td>2. Lack of training: I do not know how to share ideas or resources with the community.</td>
<td>-.137</td>
<td>$p &lt; .01$</td>
<td>Low</td>
</tr>
<tr>
<td>3. Lack of community activity: I do not see others sharing resources on the site.</td>
<td>.104</td>
<td>$p &lt; .05$</td>
<td>Low</td>
</tr>
<tr>
<td>4. Lack of leadership: I do not know what is expected for my participation in the community.</td>
<td>-.113</td>
<td>$p &lt; .05$</td>
<td>Low</td>
</tr>
</tbody>
</table>

N=403

The positive correlation between the variables participation and lack of community activity was significant, $r(403) = .104, p < .05$.

The negative correlation between the variables participation and lack of awareness was significant, $r(403) = -.184, p < .01$. The negative correlation between the variables participation and lack of training was significant, $r(403) = -.137, p < .01$. The negative correlation between the variables participation and lack of leadership was significant, $r(403) = -.113, p < .05$.

In addition to selecting from the predetermined variables, participants responded an open-ended survey questions to identify additional barriers to participation. Although
no new themes emerged, Table 7 shows sample written responses to this question as they align to the previously identified themes.

Table 7

*Sample Written Responses to Survey Question 15: What Other Factors Prevent you from Participating in Community Group Activity on BoE?*

<table>
<thead>
<tr>
<th>Theme</th>
<th>Evidence from survey</th>
</tr>
</thead>
</table>
| Lack of community activity: I do not see others sharing resources on the site. | • "The group does not appear to be very active, especially in areas that interest me."
  |                                                                       | • "Others in my group do not participate."                                           |
| Lack of training: I do not know how to share ideas or resources with the community. | • "I am not proficient at social networking. I like the idea of communities of practice and social networks just for educators, but it is not a natural thing for me."
| Lack of awareness: I was not aware that I could share my own ideas or resources with my community group. | • "I am not aware of the depth of the BOE or how it may be a resource for myself and others."
  |                                                                       | • "I am not sure that I have anything to share that others would be interested in receiving."
  |                                                                       | • "Did not know I was a member."                                                    |
| Fear of criticism: I do not want my ideas or resources to be criticized by others in the community. | • "I'm still gaining confidence working with new curriculum. Much of my work is developing." |
| Technology issues: The site/technology is too difficult to use.        | • "The site rarely works for me. I cannot log in most days."
  |                                                                       | • "I think BoE is in desperate need of a redesign. While the purpose of the site makes absolute sense, the site itself functions very poorly."
  |                                                                       | • "I do not find the structure of BoE easy to use."                                |
| Lack of leadership: I do not know what is expected for my participation in the community. | • "I am not expected to participate."
  |                                                                       | • "Employer may not support."                                                      |
| Time: I do not have time to share my ideas or resources with others on the site. | • "Mostly is lack of time. Many resources available at BOE are very useful, including the connections with people that I know."
  |                                                                       | • "I spend all day online and do not have a prep or other school designated time to be participating."
| Lack of trust: I do not know or trust other members of the community enough to share my ideas. | • "Not knowing personally the members of other groups I am member of prevents me from participating in conversation."
| Lack of value: I do not see the value in sharing my ideas or resources with others on the site. | • "This is just another site. Why build something that exists by the thousands for teachers." |
Questions 16 of the survey asked participants to indicate which of the themes reported as drivers encouraged their participation in community group activity on BoE.

Table 8 displays significant correlations found between the dependent variable participation and the independent variables reported to encourage participation (drivers) in online community groups.

Table 8

<table>
<thead>
<tr>
<th>Variables with significant correlations</th>
<th>$r$</th>
<th>$p$</th>
<th>Effect Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Networking: I want to network and exchange ideas with other educators who have similar interests.</td>
<td>.139</td>
<td>$p &lt; .01$</td>
<td>Low</td>
</tr>
<tr>
<td>2. Recognition: I want to be recognition by the community as someone who shares ideas and resources.</td>
<td>.098</td>
<td>$p &lt; .05$</td>
<td>Low</td>
</tr>
<tr>
<td>3. Professional development: I am interested learning by engaging in the subject matter, content, and activities of the group.</td>
<td>.148</td>
<td>$p &lt; .01$</td>
<td>Low</td>
</tr>
<tr>
<td>4. Knowledge Sharing: I want to help my colleagues by sharing my own ideas and resources.</td>
<td>.125</td>
<td>$p &lt; .05$</td>
<td>Low</td>
</tr>
<tr>
<td>5. Interest in technology: I am interested in trying new technology and exploring new resources.</td>
<td>.116</td>
<td>$p &lt; .05$</td>
<td>Low</td>
</tr>
</tbody>
</table>

N=403

The correlation between the variables participation and networking was significant, $r(403) = .139, p < .01$. The correlation between the variables participation and recognition was significant, $r(403) = .98, p < .05$. The correlation between the variables participation and professional development was significant, $r(403) = .148, p < .01$. The correlation between the variables participation and knowledge sharing was significant, $r(403) = .125, p < .05$. The correlation between the variables participation and interest in technology was significant, $r(403) = .116, p < .05$. 
In addition to selecting from the predetermined variables, participants responded an open-ended survey questions to identify additional drivers of participation. Although no new themes emerged, Table 9 shows sample written responses to this question as they align to the previously identified themes.

Table 9

*Sample Written Responses to Survey Question 17: What Other Factors Encourage you to Participate in Community Group Activity on BoE?*

<table>
<thead>
<tr>
<th>Theme</th>
<th>Evidence from qualitative interviews</th>
</tr>
</thead>
</table>
| Networking: I want to network and exchange ideas with other educators  | ● “Need to see what others are doing.”  
● “BOE has allowed me to connect with other agencies in After School Programming.” |
| who have similar interests.                                            |                                                                                                     |
| Recognition: I want to be recognition by the community as someone who  | ● N/A                                                                                               |
| shares ideas and resources.                                            |                                                                                                     |
| Professional development: I am interested in the subject matter,       | ● “Learning about the new Common Core and the Modules.”  
● “I strive to grow as an educator.”  
● “To learn from others- people have great ideas- and since common core standards are upon us, I want to learn as much as I can about them and share that knowledge with my staff.” |
| content, and activities of the group.                                 |                                                                                                     |
| Strong leadership: I am encouraged by leaders of the community to share | ● “My BTSA Cluster Leaders also encourage us to check out the resources within our community.”  
● “Our admin has created a group for our county administrators to share.” |
| my ideas and resources.                                                |                                                                                                     |
| Requirement: I was required to participate by my program or project.  | ● “I want my credits, so I'll participate as much as required.”                                      |
| Knowledge Sharing: I want to help my colleagues by sharing my own      | ● “Teachers need to collaborate more often and more freely, so the ability to share with individuals and groups is a wonderful mechanism to spread quality resources out to the community.”  
● “I do believe I have great knowledge in lesson planning and have a lot I can offer other program leaders.” |
| ideas and resources.                                                  |                                                                                                     |
| Interest in technology: I am interested in trying new technology and   | ● N/A                                                                                               |
| exploring new resources.                                               |                                                                                                     |
Summary of Data to Support Research Question #1

From the qualitative strand of this study emerged 9 themes that represent barriers to participation in online communities and 6 themes that represent drivers to participation in online communities. An online survey was administered to the BoE community that asked participants to identify their level of participation in the online community as well as which of the barriers hindered their participation and which of the drivers encouraged their participation. A Pearson Correlation analysis was used to determine the relationship of each barrier or driver to the independent variable participation as determined by the survey. The following barriers have significant negative correlations with participation in online community groups:

- Lack of awareness
- Lack of training
- Lack of leadership

Lack of community activity is shown to have a positive correlation with participation in online community groups.

There were no significant correlations reporting the following variables as a barriers to participation in the online community:

- Lack of Time
- Technology issues
- Lack of trust
- Lack of value
- Fear of criticism
The following drivers have significant positive correlations with participation in online community groups:

- Networking
- Recognition
- Professional development
- Knowledge Sharing
- Interest in technology

There were no significant correlations reporting the variable Requirement to be a driver of participation in the online community.

**Research Question #2**

A combination of usage data from the BoE community and quantitative survey data was used to address Research Question #2: Which, if any, of the following factors predict participation in online communities of practice in education: school size, length of time in education, length of time in current position, age range, or perceived technology efficacy? And which of the following factors impact participation in online communities: grade level(s), motivation to join community, or subject(s)/topic(s)? The following section discusses significant relationships that were discovered between independent variables and the dependent variable participation.

**Results for Variables Subject/Topic and Grade**

Existing anonymous site tracking data obtained by the K-12 High Speed Network provided usage data for 7715 community users and included demographic information of subjects/topics and grade level as well as activity information for each participant
including the number of comments made in discussion forums, the number of comments made on resources, the number of resources shared, and the number of recommendations made. Since subjects/topics and grade level information is an optional selection in BoE user profiles, participants lacking either subject/topic or grade levels were omitted from the correlation, resulting in a total 4408 users included in the analysis. The values for each activity were combined to form a total participation score, which, along with data for subjects/topics and grades for the 4408 users was entered into the Statistical Package for the Social Sciences (SPSS) software. A Pearson Correlation analysis was conducted in order to determine whether or not there are significant relationships between the dependent variable participation and the independent variables listed in the Table 10.

Table 10

Grade Level and Subject/Topic Independent Variables Used in the Analysis.

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Independent Variables for Subject/Topic</th>
<th>Independent Variables for Grade Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participation in online community</td>
<td>1. Career &amp; Technical Ed</td>
<td>1. Pre-K</td>
</tr>
<tr>
<td></td>
<td>2. English Language Development *</td>
<td>2. K</td>
</tr>
<tr>
<td></td>
<td>3. English-Language Arts</td>
<td>3. Grade 1</td>
</tr>
<tr>
<td></td>
<td>4. Foreign Languages</td>
<td>4. Grade 2</td>
</tr>
<tr>
<td></td>
<td>5. Health &amp; Physical Education</td>
<td>5. Grade 3</td>
</tr>
<tr>
<td></td>
<td>6. History-Social Science</td>
<td>6. Grade 4</td>
</tr>
<tr>
<td></td>
<td>7. Library Sciences</td>
<td>7. Grade 5</td>
</tr>
<tr>
<td></td>
<td>8. Mathematics</td>
<td>8. Grade 6 *</td>
</tr>
<tr>
<td></td>
<td>9. Professional Development *</td>
<td>9. Grade 7 *</td>
</tr>
<tr>
<td></td>
<td>10. School Administration / Leadership</td>
<td>10. Grade 8</td>
</tr>
<tr>
<td></td>
<td>11. Science</td>
<td>11. Grade 9</td>
</tr>
<tr>
<td></td>
<td>12. Special Education</td>
<td>12. Grade 10</td>
</tr>
<tr>
<td></td>
<td>13. Teacher Education</td>
<td>13. Grade 11</td>
</tr>
<tr>
<td></td>
<td>15. Visual Arts &amp; Performing Arts</td>
<td>15. Adult Education</td>
</tr>
<tr>
<td></td>
<td></td>
<td>16. Community College</td>
</tr>
<tr>
<td></td>
<td></td>
<td>17. Undergraduate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>18. Graduate</td>
</tr>
</tbody>
</table>

* Significant correlations with dependent variable
Table 11 displays significant correlations found between the dependent variable online community *participation* and the independent variables for the category subject/topic.

Table 11

**Significant Correlations Between Subject/Topic and Online Community Participation.**

<table>
<thead>
<tr>
<th>Variables with significant correlations</th>
<th>$r$</th>
<th>$p$</th>
<th>Effect Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. English Language Development</td>
<td>-.034</td>
<td>$p = .05$</td>
<td>Low</td>
</tr>
</tbody>
</table>

N=4394

The negative correlation between the variables *participation* and *English Language Development* was significant, $r(4394) = -.039$, $p < .05$. Table 12 displays significant correlations found between the independent variable online community *participation* and the independent dependent variable *grade level*.

Table 12

**Significant Correlations Between Grade Level and Online Community Participation**

<table>
<thead>
<tr>
<th>Variables with significant correlations</th>
<th>$r$</th>
<th>$p$</th>
<th>Effect Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Undergraduate</td>
<td>.51</td>
<td>$p &lt; .01$</td>
<td>Medium</td>
</tr>
<tr>
<td>2. Grade 8</td>
<td>.40</td>
<td>$p &lt; .01$</td>
<td>Medium</td>
</tr>
</tbody>
</table>

N=4394

The correlation between the variables *participation* and *undergraduate* was significant, $r(4394) = .051$, $p < .01$. The correlation between the variables *participation* and *graduate* was significant, $r(4394) = .040$, $p < .01$. 
Tables 13 and 14 present an overview of all data indicating participation by subject/topic and grade level respectively. Participation is determined by the contributions made by community members in the form of comments in discussion forums, comments on resource pages, shared resources, and recommended resources. Each table breaks down the number of participants who have designated the subject/topic or grade level in their BoE community profile as well as the total number of contributions made, average contributions per person, and number of individuals with zero, one to five, and greater than five contributions to the community.
Table 13

BoE Community Participation by Subject/Topic.

<table>
<thead>
<tr>
<th>Subject</th>
<th>Number of Educators with Subject in Profile</th>
<th>Total Number of Contributions</th>
<th>Average Contribution per Member</th>
<th>Number of Contributions to Community (Total Contributions = 5840)</th>
<th>Members with 0 Contributions</th>
<th>Members with 1-4 Contributions</th>
<th>Members with &gt;5 Contributions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Career Technical Education</td>
<td>589</td>
<td>492 (8.4%)</td>
<td>0.84 *</td>
<td>483 (82.0%)</td>
<td>81 (13.8%)</td>
<td>25 (4.2%)</td>
<td></td>
</tr>
<tr>
<td>English Language Development</td>
<td>1337</td>
<td>716 (12.3%)</td>
<td>0.54</td>
<td>1154 (86.3%)</td>
<td>145 (10.8%)</td>
<td>38 (2.8%)</td>
<td></td>
</tr>
<tr>
<td>English-Language Arts</td>
<td>2134</td>
<td>1610 (27.6%)</td>
<td>0.75 *</td>
<td>1771 (83.0%)</td>
<td>296 (13.9%)</td>
<td>67 (3.1%)</td>
<td></td>
</tr>
<tr>
<td>Foreign Language</td>
<td>361</td>
<td>321 (5.5%)</td>
<td>0.89 *</td>
<td>306 (84.8%)</td>
<td>42 (11.6%)</td>
<td>13 (3.6%)</td>
<td></td>
</tr>
<tr>
<td>Health &amp; Physical Education</td>
<td>860</td>
<td>553 (9.5%)</td>
<td>0.64</td>
<td>713 (82.9%)</td>
<td>122 (14.2%)</td>
<td>25 (2.9%)</td>
<td></td>
</tr>
<tr>
<td>History-Social Science</td>
<td>1503</td>
<td>999 (17.1%)</td>
<td>0.67</td>
<td>1243 (82.7%)</td>
<td>214 (14.2%)</td>
<td>46 (3.1%)</td>
<td></td>
</tr>
<tr>
<td>Library Studies</td>
<td>252</td>
<td>84 (1.4%)</td>
<td>0.33</td>
<td>221 (87.7%)</td>
<td>28 (11.1%)</td>
<td>3 (1.2%)</td>
<td></td>
</tr>
<tr>
<td>Mathematics</td>
<td>1984</td>
<td>1530 (26.2%)</td>
<td>0.77 *</td>
<td>1623 (81.8%)</td>
<td>291 (14.7%)</td>
<td>70 (3.5%)</td>
<td></td>
</tr>
<tr>
<td>Professional Development</td>
<td>1118</td>
<td>823 (14.1%)</td>
<td>0.74 *</td>
<td>922 (82.5%)</td>
<td>162 (14.5%)</td>
<td>34 (3%)</td>
<td></td>
</tr>
<tr>
<td>School Admin./Leadership</td>
<td>802</td>
<td>386 (6.6%)</td>
<td>0.48</td>
<td>721 (89.9%)</td>
<td>72 (9%)</td>
<td>9 (1.1%)</td>
<td></td>
</tr>
<tr>
<td>Science</td>
<td>1710</td>
<td>1089 (18.7%)</td>
<td>0.64</td>
<td>1430 (83.6%)</td>
<td>229 (13.4%)</td>
<td>51 (3%)</td>
<td></td>
</tr>
<tr>
<td>Special Education</td>
<td>805</td>
<td>434 (7.4%)</td>
<td>0.54</td>
<td>686 (85.2%)</td>
<td>99 (12.3%)</td>
<td>20 (2.5%)</td>
<td></td>
</tr>
<tr>
<td>Teacher Education</td>
<td>764</td>
<td>665 (11.4%)</td>
<td>0.87 *</td>
<td>647 (84.7%)</td>
<td>93 (12.2%)</td>
<td>24 (3.1%)</td>
<td></td>
</tr>
<tr>
<td>Technology</td>
<td>1223</td>
<td>1311 (22.5%)</td>
<td>1.07 *</td>
<td>986 (80.6%)</td>
<td>175 (14.3%)</td>
<td>62 (5.1%)</td>
<td></td>
</tr>
<tr>
<td>Visual &amp; Performing Arts</td>
<td>884</td>
<td>604 (10.34%)</td>
<td>0.68</td>
<td>748 (84.6%)</td>
<td>103 (11.7%)</td>
<td>33 (3.7%)</td>
<td></td>
</tr>
<tr>
<td>No Subject Specified</td>
<td>3306</td>
<td>1744 (29.9%)</td>
<td>0.53</td>
<td>2919 (88.3%)</td>
<td>328 (9.9%)</td>
<td>59 (1.8%)</td>
<td></td>
</tr>
<tr>
<td>Averages</td>
<td>-</td>
<td>-</td>
<td>0.686</td>
<td>84.4%</td>
<td>12.6%</td>
<td>2.9%</td>
<td></td>
</tr>
</tbody>
</table>

N = 7714; * = Greater than average value
Table 14

*BoE Community Participation by Grade Level.*

<table>
<thead>
<tr>
<th>Grade Level</th>
<th>Number of Educators with Subject in Profile</th>
<th>Number of Contributions to Community (Total Contributions = 5840)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total Number of Contributions</td>
<td>Average Contribution per Member</td>
</tr>
<tr>
<td>Pre-K</td>
<td>686</td>
<td>552 (9.5%)</td>
</tr>
<tr>
<td>K</td>
<td>1520</td>
<td>1299 (22.2%)</td>
</tr>
<tr>
<td>Grade 1</td>
<td>1585</td>
<td>1314 (22.5%)</td>
</tr>
<tr>
<td>Grade 2</td>
<td>1593</td>
<td>1317 (22.6%)</td>
</tr>
<tr>
<td>Grade 3</td>
<td>1655</td>
<td>1372 (23.5%)</td>
</tr>
<tr>
<td>Grade 4</td>
<td>1687</td>
<td>1467 (25.1%)</td>
</tr>
<tr>
<td>Grade 5</td>
<td>1710</td>
<td>1378 (23.6%)</td>
</tr>
<tr>
<td>Grade 6</td>
<td>1798</td>
<td>1507 (25.8%)</td>
</tr>
<tr>
<td>Grade 7</td>
<td>1828</td>
<td>1704 (29.2%)</td>
</tr>
<tr>
<td>Grade 8</td>
<td>1855</td>
<td>1775 (30.4%)</td>
</tr>
<tr>
<td>Grade 9</td>
<td>1842</td>
<td>1555 (26.6%)</td>
</tr>
<tr>
<td>Grade 10</td>
<td>1889</td>
<td>1669 (28.6%)</td>
</tr>
<tr>
<td>Grade 11</td>
<td>1896</td>
<td>1647 (28.2%)</td>
</tr>
<tr>
<td>Grade 12</td>
<td>1888</td>
<td>1714 (29.3%)</td>
</tr>
<tr>
<td>Adult Education</td>
<td>508</td>
<td>417 (7.1%)</td>
</tr>
<tr>
<td>Community College</td>
<td>162</td>
<td>201 (3.4%)</td>
</tr>
<tr>
<td>Undergraduate</td>
<td>150</td>
<td>350 (60%)</td>
</tr>
<tr>
<td>Graduate</td>
<td>199</td>
<td>373 (6.4%)</td>
</tr>
<tr>
<td>No Grade Specified</td>
<td>2995</td>
<td>1658 (28.4%)</td>
</tr>
<tr>
<td>Averages</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

N = 7714; * = Greater than average value
Results for Variables Length of Membership on BoE, School Size, Length of Time in Position, Length of Time in Education, Age Range, and Perceived Technology Efficacy

Surveys distributed to members of the BoE community solicited responses to questions that addressed the variables length of membership on BoE, school size, length of time in position, length of time in education, age range, and perceived technology efficacy. Of the 558 surveys submitted, 154 were incomplete and excluded from analysis resulting in an N of 403. The value for perceived technology efficacy was achieved through a series of questions asking participants to indicate their comfort with specific technologies including email, word processing, presentation software, smart boards, and social media. Scores for the technology options were combined to achieve a total perceived technology efficacy score that was included in the analysis and, along with data for the other variables for each of the 404 users, was entered into the Statistical Package for the Social Sciences (SPSS) software. A multiple regression analysis was conducted to evaluate how well the variables predicted the level of participation in online community. The linear combination of the six variables was significantly related to participation, F(6, 397) = 5.175, p < .01. The sample multiple correlation coefficient was 0.59, indicating that approximately 6% of the variance in participation in the sample can be accounted for by the linear combination of the six variables.

Table 15 presents indices to indicate the relative strength of the individual predictors. The square root of the Adjusted R Square .059 = .24, which indicates an effect size between low-medium. In looking at the model summary where all six variables were
tested, the results show that four out of the six variables, when combined together, were statistically significant to predict the dependent variable.

Table 15

The Bivariate and Partial Correlations of the Predictors with Participation

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Correlation between each predictor and participation</th>
<th>Effect Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Length of membership on BoE</td>
<td>.143 **</td>
<td>Low</td>
</tr>
<tr>
<td>2. School Size</td>
<td>-.080</td>
<td>Low</td>
</tr>
<tr>
<td>3. Length of time in position</td>
<td>-.046</td>
<td>Low</td>
</tr>
<tr>
<td>4. Length of time in education</td>
<td>.123 **</td>
<td>Low</td>
</tr>
<tr>
<td>5. Age Range</td>
<td>.121 **</td>
<td>Low</td>
</tr>
<tr>
<td>6. Perceived technology efficacy</td>
<td>.113 *</td>
<td>Low</td>
</tr>
</tbody>
</table>

* p < .05, ** p < .01, N=403

Results for Variables Related Motivation to Join Community

Question 12 of the survey asked participants to indicate which of seven possible reasons (required by administration, required by program, desire to belong to community, desire to network, desire to find resources, desire to learn, desire to share) contributed to their initial decision to join the BoE community. A Pearson Correlation analysis was conducted in order to determine whether or not there are significant relationships between the dependent variable participation and each of the seven independent variables. Significant correlations between motivation to join community and participation are listed in the Table 16.
Table 16

*Significant Correlations Between Motivation to Join Community and Participation*

<table>
<thead>
<tr>
<th>Variables with significant correlations</th>
<th>r</th>
<th>p</th>
<th>Effect Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Belonging: I want to connect with a professional education community.</td>
<td>.251</td>
<td>( p &lt; .01 )</td>
<td>Low</td>
</tr>
<tr>
<td>2. Networking: I wanted to connect with my colleagues.</td>
<td>.156</td>
<td>( p &lt; .01 )</td>
<td>Low</td>
</tr>
<tr>
<td>3. Sharing: I wanted to connect with my colleagues.</td>
<td>.170</td>
<td>( p &lt; .01 )</td>
<td>Low</td>
</tr>
</tbody>
</table>

N=403

The correlation between the independent variable *belonging* and *participation* was significant, \( r(403) = .251, p < .01 \). The correlation between the independent variable *networking* and *participation* was significant, \( r(403) = .156, p < .01 \). The correlation between the independent variable *sharing* and *participation* was significant, \( r(403) = .170, p < .01 \).

**Summary of Data to Support Research Question #2**

From the quantitative strand of this study data was collected through an online survey of community members and existing site tracking data to determine which, if any, of independent variables subject(s)/topic(s), grade level(s), school size, length of time in education, length of time in current position, age range, perceived technology efficacy, motivation to join community impacted the dependent variable *participation* in online community.

The relationship between the independent variables subject/topic and grade levels taught and the dependent variable participation were analyzed using a Pearson Correlation analysis of anonymous site tracking data obtained by the K-12 High Speed
Network for 4408 community users (n=4408). The following list summarizes significant findings:

Subjects taught or areas of focus—English Language Development has significant negative correlations with community group participation. There were no significant correlations reporting the following variables as having an impact on participation in the online community: Career & Technical Ed, English-Language Arts, Foreign Languages, Health & Physical Education, History-Social Science, Library, Sciences, Mathematics, School Administration / Leadership, Science, Special Education, Teacher Education, Technology, Professional Development, and Visual Arts & Performing Arts.

Grade level taught—Grade undergraduate and graduate have significant positive correlations with community group participation. There were no significant correlations reporting the following variables as having an impact on participation in the online community: Grades Pre-K, K, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, adult, and community college.

The relationship between the independent variables school size, experience of educator, age, and perceived technology efficacy and the dependent variable participation were analyzed using data resulting from the survey administered to all members of the community (N=403). A multiple linear regression was performed on the data to determine which, if any, of the independent variables predict the dependent variable participation. The following list summarizes significant findings:
Length of membership on BoE—There is a significant positive correlation between length of membership and participation in the community.

School Size—There is no significant positive correlation between school size and participation in the community.

Length of time in position—There is no significant positive correlation between length of time in position and participation in the community.

Length of time in education—There is a significant positive correlation between length of time in education and participation in the community.

Age Range—There is a significant positive correlation between age range and participation in the community.

Perceived technology efficacy—There is a significant positive correlation between perceived technology efficacy and participation in the community.

The relationship between the independent variables indicating motivation to join community and the dependent variable participation were analyzed using a Pearson Correlation analysis of data resulting from the survey administered to all members of the community (n=404). The following list summarizes significant findings:

Required by administrator: It was required by my agency or administrator—There is no significant correlation between the required by administrator and participation in the community.

Required by program: I’m part of a program or project that required me to join—There is no significant correlation between the required by program and participation in the community.
Desire to belong: I wanted to connect with a professional education community—There is a significant positive correlation between the desire to connect and participation in the community.

Desire to network: I wanted to connect with my colleagues—There is a significant positive correlation between the desire to network and participation in the community.

Desire to find resources: I wanted to find classroom resources—There is no significant correlation between the desire to find resources and participation in the community.

Desire to learn: I wanted to learn more about the site—There is no significant correlation between the desire to learn and participation in the community.

Desire to share: I wanted to share my own resources—There is a significant positive correlation between the desire to share and participation in the community.

Research Question #3:

In addition to addressing Research Question #1: What are the drivers and barriers to participation in professional online communities in education?, the qualitative survey served to address Research Question #3: What design and facilitation strategies can be used to encourage participation in online communities of practice in education?

During the same 30-minute interviews mentioned earlier in this chapter participants were asked to identify strategies that they have used to encourage participation in online community groups. The transcripts were subsequently coded to uncover themes to address Research Question #3. Analysis of the qualitative data involved identifying segments in the data that were responsive to the research question
and organizing them into themes that had previously emerged from the literature (See Chapter 2) through a process called “open coding” (Merriam, 2009, p. 178). Themes identified from each interview were collated and sent back to interview participants by email for member checking to ensure reliability of the instrumentation used.

The outcome of the qualitative strand was a list of effective design and facilitation strategies that may encourage participation in online communities. The following Table 17 lists the strategies that emerged from interviews.

Table 17

**Effective Online Community Group Facilitation Strategies: Themes Emerging From Qualitative Interviews in Response to Research Question #3.**

<table>
<thead>
<tr>
<th>Theme</th>
<th>Evidence from qualitative interviews</th>
<th>Number of participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communicate relevant information with group members</td>
<td>• Email summaries of group activities, resources, and events to group members as a reminder of group activities.</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>• Include links to site in messages.</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>• Keep your communication with the group short and relevant.</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>• Personalize communication with the group.</td>
<td>1</td>
</tr>
<tr>
<td>Engage group members with frequent communication</td>
<td>• Post regularly and often for members to see value (key leadership/ facilitation traits are consistency and frequency) (2)</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>• Send out an email update at least twice a month with reminders (1)</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>• Send out regular messages through the group (1)</td>
<td>1</td>
</tr>
<tr>
<td>Establish and communicate a clear purpose/vision for your group</td>
<td>• Make sure the purpose of the group is clearly stated for group members.</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>• Communicate expectations for participation to the group.</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>• Create a community identity; Reference the identity when communicating with the group.</td>
<td>1</td>
</tr>
</tbody>
</table>

(Table 17 Continues)
(Table 17 Continued)

Effective Online Community Group Facilitation Strategies: Themes Emerging from Qualitative Interviews in Response to Research Question #3.

<table>
<thead>
<tr>
<th>Theme</th>
<th>Evidence from qualitative interviews</th>
<th>Number of participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establish an effective group design/structure</td>
<td>• Organize resources into folders; keep group resources organized.</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>• Once you setup the group dashboard keep it consistent.</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>• Use a clear, easily identifiable name for the BOE group.</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>• Post information about the group at the top of the group profile page.</td>
<td>1</td>
</tr>
<tr>
<td>Maximize utility/value of group resources and tools</td>
<td>• Upload resources that are timely, relevant, and have value to group members.</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>• Use other, complimentary technologies (like Webinars or social media) to communicate and extend your community activities.</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>• Link to other site content (outside the group) like resources, PD content, and discussions that are relevant to members.</td>
<td>1</td>
</tr>
<tr>
<td>Provide group members with clear instructions/guidelines for participation</td>
<td>• Demonstrate access and use of the technology during face-to-face meetings.</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>• Provide a quick reference with instructions for sign-up, sharing, and other group tasks.</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>• Remind group members to set notification preferences so that they receive notifications at least weekly.</td>
<td>1</td>
</tr>
<tr>
<td>Be an active and engaged leader</td>
<td>• Provide strong leadership and direction for the group.</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>• Recognize and respond to the needs of group members.</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>• Recruit active members from within the greater community to participate your group.</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>• Stay engaged as a leader—prod the group, ask open-ended questions.</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>• Be careful not to be too controlling.</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>• Stay positive, frame it as a learning experience.</td>
<td>1</td>
</tr>
</tbody>
</table>
Summary of Data to Support Research Question #3

Research Question #3 asked how participants to identify effective leadership and facilitation strategies for online community groups. The qualitative data from the interview responses showed specific strategies for each of the following themes: Communicate important information with group members, engage group members with frequent communication, establish and communicate a clear purpose/vision for your group, establish an effective group design/structure, maximize utility/value of group resources and tools, provide group members with clear instructions/guidelines for participation, be an active and engaged leader.

Conclusion

This mixed methods study used both qualitative and quantitative data to address three research questions. Qualitative data from one-on-one interviews with community group leaders along with written survey results was used to address Research Question #1: Quantitative data from survey results as well as existing site use tracking data were used to address Research Question #2. Qualitative data from interviews was used to address Research Question #3.

Qualitative data from one-on-one interviews with community group leaders were used to uncover themes in response to Research Question #1: What are the drivers and barriers to participation in professional online communities in education? Data were coded and the following themes emerged:
Barriers: Time, technology issues, lack of trust, lack of value, lack of awareness, fear of criticism, lack of training, lack of community group activity, and lack of leadership.

Drivers: Networking, recognition, professional development, requirement, knowledge sharing, and interest in technology.

A Pearson correlation analysis was used to significance in how each of the drivers and barriers listed impact participation in the online community. Of the barriers listed, lack of awareness, lack of training, and lack of leadership were each found to have a significant negative impact with online community participation. Lack of activity was found to have a significant positive impact on online community participation. Time, technology issues, lack of trust, lack of value, and fear of criticism were each found not to have significant impact on participation.

Of the drivers listed, networking, recognition, professional development, knowledge sharing, and interest in technology were each found to have significant positive correlations with online community group participation. The driver requirement had no significant correlation with participation.

From the quantitative strand of this study data was collected through an online survey of community members and existing site tracking data to determine which, if any, of independent variables subject(s)/topic(s), grade level(s), school size, length of time in education, length of time in current position, age range, perceived technology efficacy, motivation to join community impacted the dependent variable participation in online community.
The relationship between the independent variables subject/topic and grade levels taught and the dependent variable participation were analyzed using a Pearson Correlation analysis of anonymous site tracking data obtained by the K-12 High Speed Network for 4395 community users (N=4394) was used to relationship between the independent variables subject/topic and grade levels taught and the dependent variable participation. The subject English Language Development was shown to have significant negative correlations with community group participation. There were no significant correlations reporting the following variables as having an impact on participation in the online community: Career & Technical Ed, English-Language Arts, Foreign Languages, Health & Physical Education, History-Social Science, Library, Sciences, Mathematics, School Administration/Leadership, Science, Special Education, Teacher Education, Professional Development, Technology, Visual Arts & Performing Arts.

Grade undergraduate and graduate have significant positive correlations with community group participation. They are also shown to have higher than average participation levels. There were no significant correlations reporting the following variables as having an impact on participation in the online community: Grades Pre-K, K, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, adult, and community college.

The relationship between the independent variables school size, experience of educator, age, and perceived technology efficacy and the dependent variable participation were analyzed using data resulting from the survey administered to all members of the community (N=403). A multiple linear regression was performed on the data to determine which, if any, of the independent variables predict the dependent variable
participation. There is a significant positive correlation between the dependent variable participation and each of the following independent variables: length of membership, length of time in education, age range, perceived technology. Neither the independent variable school size nor length of time in position had a significant correlation with participation.

The relationship between the independent variables indicating motivation to join community and the dependent variable participation were analyzed using a Pearson Correlation analysis of data resulting from the survey administered to all members of the community (N=403). The following motivators had a significant correlation with participation: desire to belong, desire to network, and desire to share knowledge. Requirement by administrator, requirement by program, desire to find resources, and desire to learn had no correlation with participation.

Research Question #3 asked how participants to identify effective leadership and facilitation strategies for online community groups. The qualitative data from the interview responses showed specific strategies for each of the following themes:

Communicate important information with group members, engage group members with frequent communication, establish and communicate a clear purpose/vision for your group, establish an effective group design/structure, maximize utility/value of group resources and tools, provide group members with clear instructions/guidelines for participation, be an active and engaged leader.
The following chapter provides a review of findings, conclusions and discussion, findings in context of this study’s theoretical frameworks, policy and leadership implications, recommendations, and suggestions for further research.
Chapter 5

SUMMARY AND CONCLUSIONS

This study was conceived as a result of the researcher’s first-hand experience as a member of the team responsible for developing and leading the Brokers of Expertise online community for the State of California. As the product manager, primary consultant, and lead trainer, the researcher worked with numerous groups around the state over a period of three years to design online community spaces to support teacher communication and collaboration. The diversity of groups and participants on the BoE community lead to mixed results in terms of participation, and questions about best practices for design and facilitation of online community groups for professional educators.

This final chapter of this study begins with a review of its purpose and research questions followed by a summary of the findings; review of significant findings; discussion of findings in context of the study’s theoretical frameworks; implications for data-based decision making, leadership, and policy; recommendations; and suggestions for future research.

The purpose of this mixed-methods study was to identify the drivers and barriers to participation in professional online communities in education. Subsequently, the results of this study provide design and facilitation strategies to increase educator participation in online communities.
Research Questions

Research Question #1: What are the drivers and barriers to participation in professional online communities in education?

Research Question #2: Which, if any, of the following factors predict greater participation in online communities of practice in education:

- age range
- length of membership in community
- number of years in current position
- number of years in education
- perceived technology efficacy
- school size

and which of the following factors influence participation in online communities in education:

- grade level(s)
- motivation to join community
- subject(s)/topic(s)

Research Question #3: What design and facilitation strategies can be used to encourage participation in professional online communities in education?

Summary of the Findings

Research Question #1

An exploratory sequential design comprised of both qualitative and quantitative data was used to address Research Question #1: What are the drivers and barriers to
participation in professional online communities in education? The qualitative strand focused on collecting data through 30-minute interviews with 7 participants who have served in the role of online group leaders on BoE. The outcome of the qualitative strand was a list of categories of factors that hinder participation in online communities (barriers) and those that encourage participation in online communities (drivers). Final themes emerging from the qualitative strand provided independent variables that were included in a survey (Appendix B) distributed to all members of the BoE community. A Pearson Correlation analysis was conducted in order to determine whether or not there are significant relationships between independent variables and the dependent variable participation. Figure 4 ranks the significant independent variables in relation to the dependent variable participation.

Of the barriers identified, lack of awareness, lack of training, and lack of leadership have significant negative relationships to participation in the BoE community.

Figure 5. Significant Factors (Barriers and Drivers) Influencing Participation in the BoE Community.
Lack of community activity has a positive relationship to participation. These findings were supported arguments that attachment, relationship, support are drivers of participation in community groups (Gaston-Breton, Duque & Lado, 2009; Blanchard & Markus, 2004). Additionally, Jenkins (2009) suggested that mentorship and support are characteristics of participatory communities. Only one factor, lack of community activity having a positive relationship to participation, seems to contradict findings in the literature. It may be explained by Blanchard and Markus’ (2004) belief that obligation felt by members to maintain their participation is a reason for participation. In the absence of activity, members may feel obligated to post resources to support their peers.

Of the drivers identified, professional development, networking, knowledge sharing, interest in technology, and recognition all have positive relationships with participation. These finding support Gupta and Kim’s (2007) assertion that primary reasons to participate are informational or functional goals relating to sharing knowledge and shared interests as well as Blanchard and Markus’ (2004) suggestion that recognition is a typical driver of community group participation.

The independent variables time, technology issues, lack of trust, lack of value, fear of criticism, and requirement did not significantly impact participation. Although literature suggests that trust, value, technology issues, and criticism have significant impacts on community group participation it is likely that participants identified factors that had greater significance (Gaston-Breton, Duque, & Lado, 2009; Gupta & Kim, 2007; Bishop, 2007). Other research supports the prioritization of needs of community members (Howard, 2010; Shirky, 2008; Roberts, 2006; Eckert, 2006).
Research Question #2

A combination of site usage data and quantitative survey data was used to address Research Question #2: Which, if any, of the following factors predict participation in online communities of practice in education: school size, length of time in education, length of time in current position, age range, or perceived technology efficacy? And which of the following factors impact participation in online communities: grade level(s), motivation to join community, or subject(s)/topic(s)?

Existing anonymous site tracking data obtained by the K-12 High Speed Network provided usage data for 7715 community users and included demographic information of subject/topic and grade level as well as activity information for each participant including the number of comments made in discussion forums, the number of comments made on resources, the number of resources shared, and the number of recommendations.

Subject/topic and grade information is an optional selection in BoE user profiles. Correlation analysis was conducted using data from the 4408 participants that had indicated subject/topic and grade information participants in their profile. Participation was determined by the total contributions made by participants in the form of comments in discussion forums, comments on resource pages, shared resources, and recommended resources. This analysis was particularly desirable since previous research has not explored the relationship between subject/topic or grade level and participation.

Of the subjects/topics included, only English Language Development was found to have significance—having a negative correlation with participation. One explanation may be that site users may select any subject/topic regardless of their actual role. This
leads many classroom teachers, for example, to include topics, such as English Language Development, that are of interest, regardless of active participation in those topics.

A positive correlation was found between grade undergraduate and graduate and participation. No significant correlations were found between any other grade levels and participation. To further examine the relationship between grade level or subjects/topics and participation, participation totals were averaged for each grade level and subjects/topics and the number of participants with zero, one to five, and greater than five contributions to the community were identified. Figure 5 shows the average participation

Figure 6. Average Contribution by Members of the Community Based on Subjects Identified in Each Member’s BoE Community Profile.
for each subjects/topics and highlights areas where greater than average participation (0.86 contributions/member) are observed.

Figure 6 shows the average participation for each grade level and highlights grade levels where greater than average participation (0.99 contributions/member) are observed.

Qualitative data from the online survey of community members is used to analyze the variables school size, length of time in education, length of time in current position,
age range, perceived technology efficacy, motivation to join community and their impact on the dependent variable participation. A multiple linear regression was performed on the data to determine which, if any, of the independent variables predict the dependent variable participation. In looking at the model summary where all six variables were tested, the results showed that four out of the six variables, when combined together, were statistically significant to predict the dependent variable: length of membership on BoE, length of time in education, age range, and perceived technology efficacy. These findings are consistent with previous findings that suggest that the duration of membership in a community impacts an individual’s commitment (Bateman, 2008), experienced members of a community provide a nurturing role (Jenkins, 2009; Bishop, 2007), and that participation requires familiarity with technology (Brooks, 2010; Gupta & Kim, 2007).

The final independent variables analyzed in response to Research Question #2 were tied to motivation to join community. Of the variables tested, there was significant correlation between the dependent variable participation and the independent variables belonging, networking, and sharing. The independent variables requirement by administrator, requirement by program, desire to find resources, and desire to learn had no significant impact on participation.

**Research Question #3**

Research Question #3 asked how participants to identify effective leadership and facilitation strategies for online community groups. The qualitative data from the interview responses showed specific strategies for each of the following themes:
Communicate important information with group members, engage group members with frequent communication, establish and communicate a clear purpose/vision for your group, establish an effective group design/structure, maximize utility/value of group resources and tools, provide group members with clear instructions/guidelines for participation, be an active and engaged leader.

**Significant Findings of this Study**

1. The following drivers have significant positive impact on participation in the BoE online community:
   
a. Professional development  
b. Networking  
c. Knowledge sharing  
d. Interest in Technology  
e. Recognition  

2. The following barriers have significant negative impact on participation in the online community:
   
a. Lack of awareness  
b. Lack of training  
c. Lack of leadership  

3. Lack of community activity had a significant positive impact on participation in the online community.

4. Members of the community from the following subjects/topics had higher than average participation in the online community:
a. Technology
b. Foreign language
c. Teacher education
d. Career Technical Education
e. Mathematics
f. English-Language Arts
g. Professional Development

5. Members of the community from the following grade levels had higher than average participation in the online community:
a. Graduate
b. Undergraduate
c. Community College

6. The following educator characteristics have significant positive impact on participation in the online community:
a. Length of membership in community
b. Age range
c. Length of time in education
d. Perceived technology efficacy

7. The following design and facilitation strategies may be used to increase participation in online community groups:
a. Communicate relevant information with group members
b. Engage group members with frequent communication
c. Establish and communicate a clear purpose/vision for your group

d. Establish an effective and consistent group design/structure

e. Maximize utility/value of group resources and tools

f. Provide group members with clear instructions/guidelines for participation

g. Be an active and engaged leader

**Findings in the Context of the Theoretical Frameworks**

This study was grounded in three theoretical frameworks: Social networking theory, social capital theory, and social learning theory. The three frameworks help when examining social networks and communities due to the existence of both formal and informal networks and relationships and the impact they have on our understanding, influence of others, and knowledge. Social network theory focuses on individuals and the relationships they maintain. Through these relationships we look for similarities between individuals. Identifying similarities while analyzing data leads to conclusions about specific attributes of the community. Common characteristics were identified among participants of this study who reported high levels of participation. Participants who teach at the community college, undergraduate, or graduate level share similarities in participation levels that are greater than other members. Social capital theory can also help explain differences observed in participation levels among segments of the community due to their structural position within the overall network. Exchanges for some segments were identified to be greater than others. Participants from higher education who were identified to have higher levels of participation in the community
tend to be teacher educators or mentors. These individuals, by their very nature, share resources and have a role in encouraging the development of newer teachers.

Social capital theory helps explain activities such as knowledge sharing. From a social network standpoint, social capital helps explain the why individuals choose to contribute to the community. Exchanges of resources, information, and ideas within the community have the potential to lead to the accumulation of recognition, power, and influence within the community. It also accounts for differences in participation because social capital has differing value to different networks and groups. Two of the seven interview participants in this study used BOE with the goals of sharing resources and disseminating information but not communicating with members or encouraging member sharing or dialog. Rather than promoting exchange and building social capital among members, this top-down approach serves to reserve power and social capital for the group facilitator. Facilitation skills that acknowledge the exchange of ideas and information that lead to the development of social capital may promote greater participation.

Following Bacon’s (2009) representations of social capital we can view activities like “favoriting” another person’s resource, recommending resources, commenting, and sharing resources in the BoE community as examples of social capital. Interestingly, trust is considered an essential component for social capital to exist but was not found to have significant impact on community group participation in this study. This may be due to the fact that BoE is an official, state-authorized community platform.

As suggested by Bandura’s (1997) social learning theory, social models are a valuable way for individuals to learn. BoE provides opportunities for educators to share
best practices and models to inform the practice of one another. This is particularly important as it was found that higher age range, greater length of time in education, and longer length of membership in the community were found in this study to predict greater participation. This implies that the veteran educators may be best positioned to contribute their knowledge and ideas which will serve as a model for learning for the new generations of teachers joining the community.

**Implications of Findings**

The proliferation of online communication technologies has increased dramatically over the past decade. Today 83% of people between the ages of 18-29 use social networking sites (Lenhart & Madden, 2007), 93% of teenagers age 12-17 have a computer and access to the Internet at home, and 74% of teens have access to the internet on a cell phone or other mobile device (Madden, Lenhart & Duggan, 2013). Educational leaders and policy makers have begun to explore greater use of communication technologies to support efforts to improve education and support teachers. The U.S. Department of Education’s (2010) National Education Technology Plan calls for an investment in online communities to support educators across the nation. At the state level, sites like Brokers of Expertise have emerged to provide common platforms to support teacher networking, collaboration, and professional development. As interest and demand grows, the ability to understanding how to effectively develop and facilitate online communities becomes increasingly (Kohl, Kim, Butler, & Bock, 2007).
Data-driven Decision Making

As we explore ways to utilize communication technologies to support efforts to improve education and support teachers we must rely on sources of data to guide decision-making. Gaining an understanding about who teachers connect with, the activities they engage in, and their interests will provide essential information about how to provide better teacher support, increase retention, and reform education practices (Baker-Doyle, 2011). This study uses data about educator demographic and community use to uncover trends that may guide decision making for future BoE community activity, resources, and outreach efforts. Specifically, this study found drivers and barriers to community group participation, which can be addressed by community leaders in efforts to increase participation. Subjects/topics and grade levels where higher than average participation were identified which may lead community leaders to focus efforts to continue to provide resources of interest and need in these areas to maintain participation and also find ways to stimulate participation in less active subjects/topics and grade levels.

An analysis of data also uncovered specific characteristics of participants that predict greater levels of participation including length of membership in community, age range, length of time in education, and perceived technology efficacy. This data suggests that community leaders may find success in focusing on recruiting more experienced teachers to the community who, as research suggests, tend to adopt a mentoring or nurturing role in communities. More expertise may lead to greater value of exchanges for all community members.
**Leadership Implications**

Linda Darling-Hammond (2003) suggests that teachers seek out environments where they can learn from one another. “Great school leaders create nurturing school environments in which accomplished teaching can flourish and grow” (p. 13). The use of online communities to provide infrastructure and increased opportunities for networking, collaboration, and support is a perfect example of transformational leadership. In a time where our education system faces diminishing resources, competing demands, and greater public scrutiny, transformational leadership approaches are necessary to break free from the status quo and develop new systems to support the progress. Research shows that strong social networks increase the likelihood that educators remain in the profession and lead to a greater sense of confidence and willingness to engage in dialog around issues of teaching and learning (Daly, 2010). Several of the participant characteristics that this study found to predict greater participation were tied to longevity within the community and the field of education. Members who have spent more time in education, longer in the community, and higher age ranges were found to have greater participation. Educational leaders should recognize that these experienced educators have a stronger tendency to participate and find ways to encourage them to continue to share their knowledge and expertise with their younger counterparts. Through online communities and social networking sites like BoE, educational leaders can provide tools to create new and more effective professional development and resources sharing pathways without barriers of time and location (U.S. Department of Education, 2011; Howard, 2010).
At the national level, the U.S. Department of education (2010) has outlined a vision for “connected teaching” and the use of technology to help facilitate the development of strong, supportive teacher networks and professional communities (p. 48). States like California have answered the call through the development of statewide online networks like Brokers of Expertise. However educational leaders must be engaged at all levels for these efforts to be successful. Three significant barriers to community participation uncovered as a result of this survey were lack of awareness, lack of training, and lack of leadership. In order to realize the potential of sites like BoE, educational leaders must support and promote efforts within their own networks.

At the community group level, leaders must take steps to design and facilitate effective online community group spaces in order for opportunities for dialog and resources sharing to thrive. Specific strategies for designing and facilitating online communities were uncovered by this study. An “if you build it, they will come” approach to leading online communities does not work. Participants call for active and engaged leadership, clear and frequent communication, valuable and relevant content, and easy access to online community groups. Leaders work to create online communities spaces where participation thrives, educators will benefit from greater access to resources, shared knowledge, and professional development.

Policy Implications

The BoE project originated out of the California Department of Education’s (2008) P-16 Council’s recommendations for closing the achievement gap. Recognizing that students of color, students from low socioeconomic backgrounds, English learners,
and students with disabilities continued perform lower than their white counterparts, O’Connell directed the P-16 council to “develop, implement, and sustain a specific, ambitious plan that holds the State of California accountable for creating the conditions necessary for closing the achievement gap” (p. 1). Among the recommendations, the P-16 council declared, “California must develop a system in which sound educational solutions to common issues can be shared by educators in a collaborative format” (p. 9).

Muijs, Ainscow, Chapman, and West (2011) argue that networking and collaboration have also become increasingly popular mechanisms for the delivery of public policy over the past two decades. This is evident in the use of BoE by the California Department of Education as a platform for the Education Technology, STEM, and Creative Arts Task Forces to communicate, collaborate, and engage the public for input (California Department of Education, 2012a, b, c). The CDE’s use of the BoE platform helped ensure that the voices of educators around the state were heard, and the needs of all stakeholders were addressed in the final policy. Engaging a greater constituency—including private sector partners—in the creation of policy provides input from multiple perspectives and has an added, positive impact on buy-in (Muijs, Ainscow, Chapman, & West, 2011).

Online social networking and online communities also have the potential to support the implementation of policy at the local, state, and national level. The BoE community includes communities and groups focused on specific topics such as the implementation of Common Core State Standards in California (California Department of Education, 2012d), supporting English learners, improving curriculum and instruction,
and strengthening educational leadership (Brokers of Expertise, 2012b). Providing just-in-time resources, information, and professional development through the community has the potential to increase access to current and relevant information that teachers need to meet the needs of students. However, we must also recognize that education has long been driven by mandated curriculum that provides little autonomy in the classroom. The introduction of the Common Core State Standards and new curriculum models provides an opportunity for teachers to gain the freedom to explore and integrate new resources in the classrooms and an incentive to seek out new professional development opportunities within the BoE community.

**Recommendations**

Based on the findings of this study the researcher recommends the following:

1) Encourage more active involvement from state and local educational leaders in the promotion and use of BoE.

2) Facilitate and support a greater awareness of BoE among the education community.

3) Implement and support activities that encourage greater understanding of how to use the BoE platform.

4) Develop mechanisms to recognize community member participation.

5) Provide additional resources that are of value to BoE community members.

1. Encourage more active involvement from state and local educational leaders in the promotion and use of BoE. This recommendation is based on the strong negative correlation between lack of leadership and participation in the BoE. Community.
Interview participants suggested that one of the primary motivators for their program or project to use BoE was that it was an official state-supported educational community. Strong and active leadership also emerged as a recommendation for increasing participation.

Suggestions for implementation include: developing marketing material with endorsements from California’s Superintendent of Public Instruction and other education leaders that promotes the use of the BoE community, seeking endorsement by educational associations throughout the state, and calling upon county and district superintendents to help support and promote the use of BoE by their teachers.

2. Facilitate and support a greater awareness of BoE among the education community. Lack of awareness of the BoE community was found to have a significant negative correlation to community participation. Participants shared comments including: “I didn’t know I was a member,” “I’m not aware of how it can be a resource for myself or others,” and “It’s just not habit, like Email. I forget it’s there.” Greater awareness may be partly accomplished through recommendation 1 to provide greater leadership but also requires active outreach efforts through marketing, training, and information sessions. As suggested by interview participants, communication about BoE is not enough, communication must be frequent and timely. BoE leaders can utilize the existing BoE newsletter and other information sources to communicate frequently with the greater community about resources that are specific to the time of year, upcoming events, policy, and resources that specifically their needs.
3. Implement and support activities that encourage greater understanding of how to use the BoE platform. The desire to share knowledge has a significant positive correlation with participation. However, lack of training was found to have significant negative impact on participation. BoE leaders must capitalize on interest to share by providing resources to help members understand how to effectively share with their community groups. Statements from participants such as “the ability to share with individuals and groups is a wonderful mechanism to spread quality resources out to the community” and “I do believe I have great knowledge in lesson planning and have a lot I can offer other program leaders” provide examples of the desire to share. However, statements like “I am not proficient at social networking” and “I like the idea of communities of practice and social networks just for educators, but it is not a natural thing for me” exemplify the lack of knowledge that exists. Suggestions for implication include: the development of more effective online training resources that can be accessed just-in-time to support participation, offering state-wide professional development training to demonstrate the use of BoE to existing and potential members.

While it did not emerge as a significant impact on participation, technology issues may play a role in lack of understanding of how to participate in the site. Participants shared comments including “the site rarely works for me,” “I have not found the structure of the BoE website easy to use,” and “the site itself functions very poorly.” Improvements to the usability of the site may also be needed for additional training and support to be successful.
4. Develop mechanisms to recognize community member participation. The desire for recognition had significant positive correlations with community group participation. As evident through the lens of social capital theory and social networking theory, recognition is a desirable outcome of community group participation and a form of social capital for community members. Creating a community tool or feature that provides visual “badges” or similar indicators on member profiles to recognize their contributions may serve to encourage participation. Other approaches to recognizing community member contributions include featuring educator profiles on the community home page or group pages or including profiles of active members in BoE community newsletters. Such approaches may also serve to accomplish goal 2 to increase awareness of the community.

5. Provide additional resources that are of value to BoE community members. This study uncovered specific segments of the BoE community that have greater than average participation levels. Members from the community college, undergraduate, and graduate levels have greater average participation rates than all other grade levels. Similarly, members from the subjects technology, foreign language, teacher education, career technical education, mathematics, English-Language Arts, and professional development. Community leaders may focus efforts to continue to provide resources of interest and need in these areas to maintain participation and also find ways to provide resources that stimulate participation greater participation in less active subjects/topics and grade levels.
Suggestions for Future Research

More research is needed to explore the potential of online communities and social networking in education in order to determine best practices for designing and facilitating environments that encourage participation. This study should be replicated on a larger scale gathering more survey responses from participants across multiple educational communities. A larger sample size would increase the reliability of findings and allow for the study of other implications including: location, participant role, and type of contributions.

Further research is also needed to uncover additional data to better understand the drivers and barriers to participation as they are influenced by the individual needs of community group members. Additional qualitative inquiry, through interviews or focus groups, can be used to further explore the drivers and barriers to community group participation and shed light on differences in needs of members of the network.
APPENDICES
Appendix A

Interview Protocol and Questions
You are invited to participate in a research study, entitled **Effective Strategies for Developing and Sustaining a Participatory Culture in Professional Online Communities in Education.**

This study is conducted through a one-on-one interview session with 7-10 participants who have served in the role of group facilitator for one or more online community groups in Brokers of Expertise. The interview will take no more than 30 minutes and will take place at the time and location that is convenient for you. Your participation in this study is voluntary. You may decline to participate. If you decide to participate, you may withdraw from the study at any time without penalty.

**Purpose & Confidentiality**

The purpose of this study is to identify the drivers and barriers to participation in professional online communities in education. Subsequently, the results of this study will provide strategies to increase educator participation in online communities of practice.

Your name and other information about you will not be collected during the study; upon request interview transcripts will be provided to you for review prior to publication; and your responses will be confidential and anonymous.

**Consent Agreement**

Respondent Name (print): 

Respondent Title:

Indicate your agreement to the following conditions and your participation in the study:

- I agree to participate in the study.
- I agree to grant permission to have interviews audio taped (You have the right to preview tapes upon request. Tapes will not be shared with anyone outside this study at any time.).

Respondent Signature: Date:

Researcher: Signature: Date:
Qualitative Strand: Interview Questions

1) Describe the nature of the community group(s) that you lead on Brokers of Expertise.
   a. Did you create the group yourself?
   b. How long have you been the leader of this group?
   c. Why did you create the group(s)? What is their purpose?

2) Describe the participants of your online community group(s).
   a. Who are the members of your group(s)? [make-up of the group]
   b. How does one become a member of your group?
   c. What are the common interests, connections, or bonds between members?
   d. In your opinion, how does a participant benefit from belonging to your online community group(s)?

3) How would you describe the level of participation in your group?
   a. Do members post comments? If so, how often?
   b. Share resources? If so, how often?
   c. Or make other contributions? If so, what types of contributions? How often?

4) In your opinion, what motivates members of your group to participate in any of the ways just mentioned?

5) In your opinion, why do members of your group not participate?

6) As a group leader, what strategies do you use that can help increase participation?
   a. Any specific recommendations or strategies related to group design or organization of information and resources?
   b. Any specific recommendations or strategies about communication with group members?
   c. How do you know if these strategies work? What are the signs?
   d. Of the strategies you mentioned, which do you believe is most effective?

7) What changes to the technology would help increase participation?

8) Do you have any other feedback about leading online community groups in Brokers of Expertise that you might like to share?
Appendix B

Survey Instrument
GRADUATE RESEARCH CONDUCTED BY JON KNOLLE  
Doctorate in Educational Leadership Program, California State University, Sacramento

================ INFORMED CONSENT FORM ===============

You are invited to participate in a research study, entitled Effective Strategies for Developing and Sustaining a Participatory Culture in Professional Online Communities in Education.

This study is conducted through an online survey administered to members of the Brokers of Expertise online community. The survey consists of [17] questions designed to gather feedback about your participation in the Brokers of Expertise online community.

The procedure involves filling an online survey that will take approximately 15 minutes. Your responses will be confidential and we do not collect identifying information such as your name, email address or IP address.

Your participation in this study is voluntary. You may decline to participate. If you decide to participate, you may withdraw from the study at any time without penalty.

----------------------------
PURPOSE & CONFIDENTIALITY----------------------------

The purpose of this study is to identify the drivers and barriers to participation in professional online communities in education. Subsequently, the results of this study will provide strategies to increase educator participation in online communities.

Your name and other information about you will not be collected during the study. Your responses will be confidential and anonymous.

------------------------- CONTACT INFORMATION -------------------------

This research has been reviewed according to California State University, Sacramento Institutional Review Board (IRB) procedures for research involving human subjects.

If you have questions at any time about the study or the procedures, you may contact the researcher, Jon Knolle at 530-570-3392 or by email at jknolle@csus.edu or the Dissertation chair Dr. Lisa William White at 916-278-7778 or by email at lywwhite@csus.edu. 

- you voluntarily agree to participate
- you are at least 18 years of age
If you do not wish to participate in the research study, please decline participation by clicking on the "disagree" option.

1. Clicking on the "agree" option below indicates that:

- you have read the above information
- you voluntarily agree to participate
- you are at least 18 years of age

If you do not wish to participate in the research study, please decline participation by clicking on the "disagree" option.

Clicking on the "agree" option below indicates that: • you have read the above information • you voluntarily agree to participate • you are at least 18 years of age If you do not wish to participate in the research study, please decline participation by clicking on the "disagree" option.

- Agree
- Disagree
*1. Approximately how long have you been a member of the Brokers of Expertise community?
   - 0-6 months
   - 7-12 months
   - 13-18 months
   - 19-24 months
   - 25 months or more

*2. Select your county:

*3. Select your school size:
   - less than 100
   - 101-500
   - 501-1000
   - over 1000

*4. Select your school type:
   - Elementary school (K-6)
   - K-8 school
   - K-12 school
   - Preschool
   - District operated alternative school or program
   - County Office of Education operated alternative school or program
   - District operated special education program
   - County Office of Education operated special education program
   - Nonpublic, Nonsectarian school
   - Community College
   - 4-year College
   - County Office of Education
   - School District
   - State Department of Education
   - Middle school (6-8)
   - High school (9-12)

*5. Select your primary role:
   - Counselor
   - Curriculum Specialist
   - Para-professional / Instructional Aide
   - Program Director
   - Program Specialist or Coordinator
o Administrator
o School Librarian
o Teacher / Professor
o Credential candidate / student teacher
o Other (please specify)

*6. Select the subject(s) you currently teach or area(s) of focus for your work for the past year:

  o Career & Technical Ed
  o English Language Development
  o English-Language Arts
  o Foreign Languages
  o Health & Physical Education
  o History-Social Science
  o Library Sciences
  o Mathematics
  o Professional Development
  o School Administration / Leadership
  o Science
  o Special Education
  o Teacher Education
  o Technology
  o Visual Arts & Performing Arts

*7. Select the grade level(s) you currently teach or support through your work:

  o Pre-K
  o K
  o 1
  o 2
  o 3
  o 4
  o 5
  o 6
  o 7
  o 8
  o 9
  o 10
  o 11
  o 12
  o Adult
  o Community College
  o University
  o Graduate

*8. How long have you been in your current position?

  o Less than one year
  o 1-3 years
  o 4-9 years
  o 10-19 years
  o 20 years or more
9. How long have you been in education?
   - Less than one year
   - 1-3 years
   - 4-9 years
   - 10-19 years
   - 20 years or more

10. What is your age range?
   - 22-25
   - 26-30
   - 31-40
   - 41-50
   - 51-60
   - 60 or over

11. Please indicate your comfort level with the following technologies. Do you consider yourself to be a novice (know basics), competent (skilled), proficient (could teach others) or non-applicable.

<table>
<thead>
<tr>
<th>Technology</th>
<th>Novice</th>
<th>Competent</th>
<th>Proficient</th>
<th>NO EXPERIENCE</th>
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<tbody>
<tr>
<td>E-mail</td>
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<td>Finding Internet/Online Resources</td>
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<td>Word Processing</td>
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<td>Presentation Application (i.e. Powerpoint)</td>
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<td>Web page creation / publishing</td>
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<td>Interactive White Board / SmartBoard</td>
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<td>Social Media (i.e. Facebook, Pintrest, Twitter, Blogs)</td>
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<td>Creating audio, video, podcasting, or other media</td>
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<td>Participating in online communications: (Skype, WebEx, Video Conference)</td>
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*12. Which of the following reasons contributed to your initial decision to join the BoE Community?

- It was required by my agency or administrator
- I wanted to connect with a professional education community
- I wanted to connect with my colleagues
- I’m part of a program or project that required me to join
- I wanted to find classroom resources
- I wanted to learn more about the site
- I wanted to share my own resources

*13. How often do you participate in BoE community group activity? (i.e. Sharing resources, recommending lessons, posting comments, discussion topics, or other contributions).

- Never
- Rarely (I participate in community activities fewer than 2 times each month)
- Sometimes (I participate in community activities between 3 and 6 times each month)
- Often (I participate in community activities between 7 or more times each month)

*14. Which of the following factors prevent you from participating in community group activity on BoE? (select all that apply)

- Lack of leadership: I do not know what is expected for my participation in the community.
- Lack of community activity: I do not see others sharing resources on the site.
- Time: I do not have time to share my ideas or resources with others on the site.
- Fear of criticism: I do not want my ideas or resources to be criticized by others in the community.
- Lack of value: I do not see the value in sharing my ideas or resources with others on the site.
- Lack of trust: I do not know or trust other members of the community enough to share my ideas.
- Lack of awareness: I was not aware that I could share my own ideas or resources with my community group.
- Lack of training: I do not know how to share ideas or resources with the community.
- Technology issues: The site/technology is too difficult to use.
15. What other factors prevent you from participating in community group activity on BoE? (Optional)

*16. Which of the following factors encourage you to participate in community group activity on BoE? (select all that apply)

- Networking: I want to network and exchange ideas with other educators who have similar interests.
- Recognition: I want to be recognized by the community as someone who shares ideas and resources.
- Professional development: I am interested in learning by engaging in the subject matter, content, and activities of the group.
- Strong leadership: I am encouraged by leaders of the community to share my ideas and resources.
- Requirement: I was required to participate by my program or project.
- Knowledge Sharing: I want to help my colleagues by sharing my own ideas and resources.
- Interest in technology: I am interested in trying new technology and exploring new resources.

17. What other factors encourage you to participate in community group activity on BoE? (Optional)
Appendix C

Human Subjects Approval
FWA00003873
Committee for the Protection of Human Subjects

September 26, 2012

12-13-026 (Sept)

To: Jonathan Knolle
1020 16th Street
Sacramento CA 95814

From: Maria Dinis, Chair
Committee for the Protection of Human Subjects

RE: Effective Strategies for Developing and Sustaining Participatory Culture in Online Communities of Practice in Education

The Committee for the Protection of Human Subjects approved your application as “Exempt” at its September 24, 2012 meeting. The exemption is made pursuant to 45 CFR 46.101(b)(2). The approval applies to the conditions and procedures described in your protocol. Your approval expires on September 26, 2013.

Approval carries with it the understanding that you will inform the IRB promptly should any adverse event occur, and that you will make no modification to the plan as described in the protocol without the prior approval of the IRB.

Should you need further information about the protection of human subjects, please consult our website at http://www.csus.edu/research/humansubjects/ or contact me at 916-278-5674.
REFERENCES


Li, X. (2011). Factors influencing the willingness to contribute information to online communities. New Media & Society, 13(2), 279-296.


