

BUILDING PROFESSIONAL LEARNING COMMUNITIES IN SPECIAL EDUCATION THROUGH SOCIAL NETWORKING: DIRECTIONS FOR FUTURE RESEARCH

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ABSTRACT

This paper examines the challenges inherent in building professional learning communities (PLCs) in special education and describes how two Web 2.0 tools were used to build a community that engages general and special education teachers, school administrators, and teacher educators in implementing research based inclusive practices that are known to have a positive impact on student learning. A wiki and ning were selected to provide the network's infrastructure because these applications have the capacity to support collaboration and networking when community members are separated by geographical location and time. The first year of the project was focused on developing web pages for community consumption and building membership. The membership grew from 50 at the end of the first year to 150 during the second year but data collected on member use showed that the membership contributed very little to community development and relied almost entirely on the network administrator to direct and manage all facets of community work. The success of any PLC is ultimately dependent upon members' level of engagement in community work. Thus, continued research should explore the processes that support community development and teacher engagement in community work, and most importantly, the degree to which participation in community work impacts student achievement.

Key words: Special Education, Professional Learning Communities, Student Achievement, Technology.

INTRODUCTION

The practice of special education is defined by the principle of inclusion, a principle that is satisfied when general and special educators engage in a shared practice that has a positive impact on the achievement of every student in the general education classroom (Friend & Bursuck, 2012). Special education teachers are not required to have grade or content area expertise but are instead charged with the responsibility to be active and resourceful as they seek out how language, culture, and familial backgrounds interact with exceptional conditions to impact students' academic and social abilities, attitudes, values, interests, and career options at every grade level and in all classrooms that include students with disabilities who may exhibit a wide range of educational abilities and instructional needs (National Council for the Accreditation of Teacher Education, [NCATE], 2008). Thus mastering an inclusive practice begins with mastering the art of collaboration (Blanton, Sindelar, & Correa, 2006;

Brownell, Rosenberg, Sindelar, & Smith, 2004) and requires active membership in at least two professional learning communities (PLCs), one with school-based general education colleagues and another with discipline-based special education colleagues (Kozleski, Mainzer, & Deshler, 2000). Yet research on teacher attrition in special education suggests that this may rarely be the case in that large numbers of novice and veteran special educators leave their classrooms annually feeling isolated and ill prepared to meet the demands of practice (Boe & Cook, 2006).

Teacher attrition in special education produces a significant the number of teaching vacancies annually, enough to far exceed the number of newly qualified graduates certified to occupy those positions (Brownell, Sindelar, Bishop, Langley, & Seo, 2002; Kozleski et al., 2000). Moreover, those novice special educators who occupy the vacated positions are among those most likely to leave after only a few years of teaching. The probability of their staying increases significantly, however, if they are provided

with opportunities to participate in carefully designed professional development activities nested in a supportive working environment (Billingsley, 2004; Boyer; Brownell et al., 2004; Brownell, et al., 2002; Carr & Evans, 2006; Little & King, 2008). Thus the development of expertise in special education begins with liberal access to formal and informal networks of support (Boe & Cook, 2006; Smith & Ingersoll, 2004) and quality professional development that is tightly focused on mastering research based inclusive practices known to bring about the most significant and meaningful changes in student learning.

Expertise in inclusive practices evolves over time as teachers engage in quality professional development and exercise opportunities to exchange ideas with their colleagues about what they have learned and are learning from inside the practice (Billingsley, 2004; Brownell et al., 2002; Kozleski et al., 2000). This paper examines the challenges specific to the delivery of quality professional development and the building professional networks in special education; describes how two Web 2.0 applications were used to build a PLC that engages general and special education teachers, school administrators, and teacher educators in implementing research based inclusive practices in general education classrooms; and presents the results of the project followed by a discussion of the implications for continued research.

Building a Culture of Learning in Special Education

The practice of inclusion is highly individualized and student centered (Cook, Tankersley, & Harjusola-Webb, 2008). As a result, quality professional development in special education is that which flows from the ground up as teachers themselves identify their needs and design what they need to support the practice (Kozleski et al., 2000). Special education professional development content cannot be effectively delivered using the traditional hub-and-spoke model or constituted in a string of disconnected one-day workshops intended for general consumption but is constituted in an evolving, iterative process that unfolds as teachers critically reflect on the practice and seek out that which is most effective for their students. When work, collaboration, and professional growth are inextricably woven together in this manner, a PLC emerges quite

naturally from inside the practice (Billingsley, 2004; Darling-Hammond & McLaughlin, 1995; McLaughlin & Talbert, 2006; Schlager & Fusco, 2003).

PLCs are usually school-based and develop informally around joint work or a particular project of interest (McLaughlin & Talbert, 2006). Networking plays a vital role in their development because it breaks down isolation and provides an authentic process for posing problems, deliberating solutions, and constructing new knowledge that is grounded in classroom based inquiry, experimentation, and reflection (Smith & Ingersoll, 2004). The most effective learning communities are those that engage multiple perspectives from general and special educators at various levels of expertise, school and district level administrators, and teacher educators (NCATE, 2008). But the involvement of teacher educators is difficult at best since participation in community work requires that they step out of the safety of the university classrooms and clinics and into the realities of schooling (Bay & Parker-Katz, 2009; Jones, 2009; O'Shea & O'Shea, 1997) where the veracity of theory and research will be questioned and tested (Carnine, 1997; Landrum, Cook, Tankersley, & Fitzgerald, 2002). There is also a general lack of institutional resources available to support the development of university-school partnerships (Conderman et al., 2005), which further limits teacher educators' involvement in school based PLCs and may explain why many personnel preparation programs continue to be disconnected from the realities of schooling. Nevertheless, to establish the feasibility of research-based interventions in practical settings (Carnine, 1997; O'Shea, Hammitte, Mainzer, & Crutchfield, 2002) and to produce research on the effectiveness of field experiences, student teaching, and induction support on professional development (Billingsley, 2004; Boyer, 2005; Jones, 2009), teacher educators must become actively involved in professional development and informal and formal networks of support. To enable a formative practice that has the capacity to generate new knowledge and beliefs about content, pedagogy, and more importantly learners, the entire community must be actively engaged in community development and work (Hardman, 2011).

Meeting the Challenge with Web 2.0 Technology

It seems difficult to imagine how to establish and maintain PLCs in special education when special education teachers and programs are distributed over multiple school sites (Epanchin & Colucci, 2002; & Jenkins, Pateman, & Black, 2002), the field is generally lacking in veteran special educators to provide site based leadership (Boe & Cook, 2006; Kozleski, et al., 2000), and personnel preparation programs are either unwilling or unable to provide institutional support for the development of university-school partnerships (Conderman et al., 2005). Perhaps solutions to these unique problems lie in easy to use and readily available Web 2.0 technology. Web 2.0 refers to a category of Internet tools that are particularly well-suited for the purpose of networking and collaboratively producing and sharing professional development content via the Web (Hardman, 2011; Sindelar, Brownell, & Billingsley, 2010; Schlager & Fusco, 2003). Web 2.0 applications are distinct from the original concept of the Internet as one-way delivery of information in that they allow users to move beyond passively absorbing posted information and become contributors by customizing media and technology to suit community needs. With tools such as wikis, nings, blogs, and in browser chat, general and special educators at every level of practice might be able to share their thoughts and co-create inclusive evidenced-based practices in special education from inside the practice in spite of their separation by time, distance, and lack of resources (Hardman, 2011).

Schlager and Fusco (2003) identified eight essential characteristics of effective PLCs and described how each might supported using Web 2.0 applications.

- *Learning Processes* - Learning is a social activity that occurs in the context of work and facilitates the induction of new and less skilled members into the profession through dialogue about practice with more experienced colleagues. Web 2.0 applications allows dialogue among distributed community members as they collaboratively tailor professional development content to meet the specific needs of the community at large.
- *History and Culture* - Communities of practice develop

and continually reproduce their own cultural artifacts, norms, and values over time. With Web 2.0 tools, new members may be inducted into established norms, values, and practices from within the community even when novices and seasoned veterans are separated by distance or time.

- *Membership Identity and Multiplicity* - Membership in a learning community spans a continuum of expertise. Web 2.0 technology enables distributed members at various levels of competence to build and manage their professional identities, to find and collaborate with one another according to their similar interests, and to function in multiple roles from beginner to accomplished practitioner.
- *Community Reproduction and Evolution* - Successful PLCs have the ability to grow, evolve, and reproduce membership. A Web-based infrastructure supports a collaborative model of professional development by giving voice to every community member in selecting and designing one's own learning experiences.
- *Social Networks* - Formal and informal networks provide the foundation upon which PLCs are built. Web 2.0 applications facilitate the formation, structure, and evolution of social networks across time and distance among community members who have similar interests and learning needs.
- *Leaders and Contributors* - Leadership is the central aspect of membership identity that promotes social networking and community reproduction. Web-based technologies support socially engaging environments and provide every community member with the technical capabilities necessary to take on leadership roles and contribute to meaningful community development.
- *Tools, Artifacts, and Places* - Communication, productivity, collaboration, and knowledge generation depend on the broad use of a common set of tools as well as the production, reuse, and refinement of community artifacts within and across projects over time. Web-based social networking facilitates the design of curriculum, assessments, rubrics, and teaching and learning samples for community consumption across multiple educational settings that may be distributed across a wide

geographical area.

- *The Practice* - The practice lies at the center of community work. Web-based technology supports the engagement of every community member in the practice as opposed to addressing the individual roles of each member in isolation.

Nevertheless, professional development and networking that occurs via participation in PLC is not likely to result in student achievement unless teachers know the content defined by the standard curriculum and understand how students learn that content (Bausmith & Barry, 2011). General educators typically bring content expertise to the practice but special educators are prepared to understand the individual learning needs of struggling learners in an academically diverse classroom. With Web-based PLCs special and general teacher educators, aspirant and novice teachers across relevant program areas (general educators, physical therapists, school psychologists, counselors, etc.), school administrators, and a variety of practitioners in the field can develop multidimensional, dynamic projects and build supportive relationships in any special education content area of interest (e.g., content literacy, assessment, classroom management, etc.) for the purpose of improving the educational outcomes for students with disabilities and at-risk peers.

Method

The Demon Strategic Instruction Network (SIN) was developed as a technology supported Web based community of practice conceived for the purpose of integrating professional development content on implementing the Strategic Instruction Model (SIM) into special education coursework at a moderately sized private university located in a large urban metropolitan area in the Midwest. SIM is widely regarded as an evidence-based model that supports the inclusion of students with disabilities and other struggling learners in the general education curriculum (Brownell, Sindelar, Kieley, & Danielson, 2010). Problems developed, however, when teacher candidates tried to secure practical sites to practice the model under the supervision of a cooperating teacher. Teachers were understandably reluctant to

supervise a fieldwork assignment they knew little or nothing about themselves. This prompted the teacher educator and several of her students to form Demon SIN as a PLC created for the purpose of pairing teacher candidates seeking field placements with cooperating teachers who had already begun their preparation in the model when they were graduate students in the same program. Anticipating the problems associated with delivering professional development at multiple sites simultaneously, the instructor solicited the advice of a technology consultant on designing the network as a Web-based PLC facilitated primarily by two Web 2.0 applications, a wiki and a ning.

Network Design

The Demon SIN Wiki is a private website, accessible by invitation only, but is one that can be viewed and edited by any community member with Internet access. This means that everyone can be involved in the creative production and design of professional development content posted on the wiki regardless of their geographical location or Web page building expertise. The FrontPage of the Demon SIN Wiki is depicted in Figure 1. This page provides introductory information about the purpose of the network, basic information about SIM, and administrator contact information. The network administrator may rename or delete anything on the workspace, add users, change users' permission levels, or remove users from the workspace altogether if necessary. Any page or folder can be made publically available or locked down and accessible to selected users only and the administrator is the only user who has access to the workspace settings page where



Figure 1. Demon SIN Wiki

page and folder level security settings are assigned.

As users subscribe to the workspace, the network administrator assigns editor, writer, or reader privileges, and designates group membership. There are two tabs at the top of every wiki page, View and Edit. Readers have access to View mode which only allows users to comment on page content. Writers and editors have access to the Edit tab, which allows users to author or edit any page by uploading documents, images, slides shows, videos, et cetera. In effect, the Edit tab transforms every wiki page into a composition system that serves as a repository for asynchronous communication and the collaborative production of professional development content that may be shared community wide. As members create content to share, wiki software documents each revision with page histories that chronicle the changes made and allows any user to revert to earlier version of the page if they so desire. Thus, this versioning capability provides a database where the community's evolution and thought processes are efficiently recorded as users interact with the site, its contents, and each other.

There is a navigation bar on the right side of every wiki page that works somewhat like a table of contents and allows users to locate specific content of interest. The Demon SIN navigation bar displays folders for the Learning Strategies Curriculum, Content Enhancement Routines, Creating Wiki Content, Teacher Sandbox, and Student Sandbox. The sandbox folders provide a testing ground where users may experiment with wiki software and other applications to develop projects to share via the Web. Above the navigation bar on the top left side of the FrontPage, there are links that allow users to create pages and upload files and a Side Bar is located below the navigation bar with quick links to the wiki users' manual and the Demon SIN-Ning.

The Demon SIN-Ning is a social networking site that is private and accessible to invited members only. Similar to the wiki, the network administrator has a great deal of flexibility in designing the site's appearance and functionality. After completing a simple setup process, the administrator is prompted to choose a visual theme and customize the functionality of the network using a drag and drop tool to

select specific features such as chat, events, forums, discussion boards, and blogs. Users navigate the website using tabs located at the top of every page and these tabs vary according to the specific features the administrator selects at set up or as needed as the network develops and evolves. The network administrator has a Manage tab that is not visible to network users and allows access to the tools that control the site's appearance, functionality and other settings. During the setup process, the network administrator also determines what information users will provide when they join the network and members' responses to those questions are posted on My Page, where members may also share videos, pictures, blogs, and subscribe to updates from other parts of the social network using RSS feeds. Demon SIN users are advised against using the website to post private or sensitive information of any kind since the website is to be used for professional networking only. The Main Page of the Demon SIN-Ning is pictured in Figure 2.

Membership Recruitment

Membership in the Demon SIN PLC is entirely voluntary and every student enrolled in the network administrator's courses is issued an invitation to join the network. In the first year of the project, the membership included 34 of 53 graduate students, 7 novice general and special educators who had graduated the previous year, and 9 general and special education teachers located in four public and private schools. Three of the nine general educators were alumni who had been teaching for five or more years and wished to serve as cooperating teachers. By the end of the next year, the network grew to include



Figure 2. Demon SIN-Ning

about 150 members representing educators at all levels of practice, aspirant to expert, from several schools spread out over the large urban metropolitan area, many of whom were novice graduates of the personnel preparation program.

Data Collection and Analysis

Web-based PLCs place almost total control of community growth and development into the hands of users with easy to use software that encourages experimentation and innovation. This means that professional networks can be in a near-constant state of change, but it also means that Web 2.0 software efficiently records community growth and development as it documents the building of the discipline's collective knowledge base over time. Thus, each of the eight essential characteristics of PLCs are rendered directly observable as data are collected from discussion boards, forums, My Pages, blogs, video uploads and sharing, events posted, wiki pages, and file uploads.

Results

Demon SIN was intended to be community owned and operated from its inception. Members were expected to move beyond merely consuming professional development content, as is typically done at traditional site based professional development workshops or by matriculating in college or university coursework, and to become producers of knowledge who actively participate in professional networks and collaboratively engage in community work with colleagues at every level of practice. Yet data collected via wiki and ning software indicate that this objective was not realized in that first year in that members did not use the websites to engage in professional networking and collaboration and voluntarily produced very little professional development content to share with others. On the contrary, users relied almost entirely on the network administrator to direct and manage all facets of community work, from initiating discussions to developing Web pages for community consumption, similar to the way online learning systems are used that operate from a traditional top-down, one-way delivery of information. The membership seemed content to passively absorb posted information, participate in group discussions only as assigned, and complete group projects

and other assignments only as specified by the instructor. Although many did continue to maintain their membership in the PLC beyond graduation, they participated as passive bystanders only, rarely visiting either site.

Assuming that unfamiliarity with wikis, nings, and other hardware and software tools of the trade was the major contributor to the limited level of production during the first year, the network administrator created a course specific wiki and ning website to use as a training ground for participation in the Demon SIN community. She created brief tutorials on using wiki and ning software and introduced her students to a few of the many software applications available on both websites. She also issued flip video cameras and assigned group video projects that required students to make and edit short movies teaching a lesson. She invited guest speakers to class to conduct workshops on creating, editing, and publishing media and other products to share on the Web and posted short video tutorials about each of these topics in the Creating Wiki Content folder. She also assigned weekly reflections that were to be shared with classmates via blogs created on the course ning.

Unfortunately, these tutorials, workshops, and assignments were not greeted with enthusiasm. Students remained generally resistant to the idea of sharing their thoughts, products, and collaboratively produced teaching projects with their classmates via the Web, preferring instead to consume coursework in isolation in a more traditional one way fashion where the teacher teaches and the learner learns. As one teacher candidate boldly explained in class, "I expect my professor to come to class prepared to stand and deliver." It was this resistance to active engagement in community work that became the most challenging barrier to address but also impossible to ignore. Passive learning will not produce the level of pedagogical expertise required to adequately address the individualized instructional needs of students with disabilities in academically diverse educational settings across all subject areas, disability categories, and grade and ability levels day to day and week to week. Quality professional development begins with active learning, a style of learning that puts students at the center of the

learning process, allows teachers and students to become partners in the learning process, and maximizes the impact of professional development on student achievement (Doppelt et al, 2009).

Discussion

Although the instructional focus of PLCs can vary widely, the purpose remains the same. Good teaching maximizes student achievement. It is not location that gives PLCs meaning, but the work they do and how they accomplish it. PLCs evolve over time through a complex process that is not well researched or understood, perhaps because community development is realized in schools as a natural part of work when teachers meet problems or make discoveries about teaching and share them with colleagues through casual conversation in workrooms and lounges, on bus duty and in the cafeteria, or while supervising students in hallways and on playgrounds. A distinct advantage of Web-based PLCs is that Web 2.0 software has the capacity to record and document casual conversations, informal in-the-moment reflections, and the problems met and discoveries made as teachers go about their daily work.

It is generally assumed that the PLC approach to professional development is more effective than traditional approaches because it is more likely to have a positive impact on student achievement although there is little research documenting this hypothesis (Doppelt et al, 2009). In special education, researchers participate in teacher professional development by identifying and disseminating research based practices, but it is teachers themselves who ultimately decide which practices fit their students' needs and how and when to integrate specific practices into instruction. Teachers also ultimately determine the effectiveness of research based practices case by case as they monitor student progress and use those data to determine whether or not they will continued to use the practice and how (Cook, Tankersley, & Harjusola-Webb, 2008). This well-established process does not seem to be consistent with what we know about quality professional development and may indeed defeat the purpose of closing the research to practice gap because it does not engage researchers and teachers collaboratively

in the design, dissemination, and evaluation of evidence based practices. Web-based PLCs have that capacity.

Conclusion

Community building for the purpose of inclusion is no simple matter but well worth the effort if the benefits can be realized in improved academic outcomes for students with disabilities and at risk peers. Web 2.0 applications show promise with respect to building and maintaining PLCs in special education because they facilitate professional networking and collaboration among teachers, pre-service educators, and teacher educators/researchers who are separated by time and distance. Nevertheless, realizing that promise must begin during pre-service preparation by casting a deliberate focus on the development of pre-service educators who are active in their own learning. If smart phones, video, twitter, wikis, nings, and blogs can be effectively deployed to build worldwide support in the overthrow corrupt governments or to facilitate rescue efforts in the face of natural disasters, it seems possible that these same tools might also be useful in transforming passive pre-service educators into actively engaged contributors of knowledge who are committed to improving the learning outcomes for every student in the classroom community. In the final analysis, acquiring expertise in the practice of special education is a lifelong journey, regardless of the role each individual plays. It is a journey that cannot be traveled alone or sustained through the passive consumption of knowledge over time but becomes a lived reality in the context of supportive professional networks that engage everyone in the active creation and recreation of the practice from inside the classroom.

References

- [1]. Bausmith, J.M., & Barry, C. (2011). Revisiting professional learning communities to increase college readiness: the importance of pedagogical knowledge. *Educational Researcher*, 40(4), 175-178.
- [2]. Bay, M.B., & Parker-Katz, M. (2009). Perspectives on induction of beginning special educators. Research summary, key program features, and the state of state-level policies. *Teacher Education and Special Education*, 32(1), 17-32.

- [3]. Billingsley, B.S. (2004). Promoting teacher quality and retention in special education. *Journal of Learning Disabilities*, 37(5), 370-376.
- [4]. Blanton, L.P., Sindelar, P.T., & Correa, V.I. (2006). Models and measures of beginning teacher quality. *The Journal of Special Education*, 40(2), pp. 115-117.
- [5]. Boe, E.E., & Cook, L.H. (2006). The chronic and increasing shortage of fully certified teachers in special and general education. *Exceptional Children*, 72(4), 443-460.
- [6]. Boyer, L. (2005). Supporting the induction of special educators. Program descriptions of university-school district partnerships. *Teaching Exceptional Children*, 37 (3), pp.44-51.
- [7]. Brownell, M.T., Sindelar, P.T., Bishop, A.G., Langley, L.K., & Seo, S. (2002). Special education teacher supply and teacher quality: The problems, the solutions. *Focus on Exceptional Children*, 35(2), 1-16.
- [8]. Brownell, M.T., Rosenberg, M.S., Sindelar, P.T., & Smith, D. D. (2004). Teacher education: Toward a qualified teacher for every classroom. In A.M. Sorrels, H.J. Rieth, & P.T. Sindelar (Eds.), *Critical issues in special education* (pp. 243-257). Boston, MA: Pearson.
- [9]. Brownell, M.T., Sindelar, P.T., Kieley, M.T., & Danielson, L.C. (2010). Special education teacher quality and preparation: Exposing foundations, constructing a new model. *Exceptional Children*, 76(3), 357-377.
- [10]. Carr, S.C., & Evans, E.D. (2006). Helping beginning teachers remain in the profession: A successful induction program. *Teacher Education and Special Education*, 29 (2), 113-115.
- [11]. Carnine, D. (1997). Bridging the research-practice gap. *Exceptional Children*, 63 (4), 513-521.
- [12]. Conderman, G., Morin, J., & Stephens, J.T. (2005). Special education student teaching practices. *Preventing School Failure*, 49(3), 5-10.
- [13]. Cook, B.G., Tankersley, M., Cook, L., & Landrum, T.J. (2008) Evidence-based practices in special education: Some practical considerations. *Intervention in School and Clinic*, 44(2), 69-75.
- [14]. Cook, B.G., Tankersley, M., & Harjusola-Webb (2008) Evidence-based special education and professional wisdom: Putting it all together. *Intervention in School and Clinic*, 44(2), 105-111.
- [15]. Darling-Hammond, L., & McLaughlin, M. W. (1995). Policies that support professional development in an era of reform. *Phi Delta Kappan*, 76(8), 597-604.
- [16]. Doppelt, Y., Schunn, C.D., Silk, E.M., Mehalik, M.M., Reynolds, B., Ward, E. (2009). Evaluating the impact of a facilitated learning community approach to professional development on teacher practice and student achievement. *Research in Science & Technological Education*, 27(3), 339-354.
- [17]. Epanchin, B.C., & Colucci, K. (2002). The professional development school without walls: A partnership between a university and two school districts. *Remedial and Special Education*, 23, 349-358.
- [18]. Friend, M., & Bursuck, W.D. (2012). *Including students with special needs: A practical guide for classroom teachers (3rd ed.)*. Boston, MA: Allyn and Bacon.
- [19]. Hardman, E.L. (2011). Building a web-based community of practice. *Academic Exchange Quarterly*, 14(4), 128-132.
- [20]. Jenkins, A.A., Pateman, B. & Black, R. (2002). Partnerships for dual preparation in elementary, secondary, and special education programs. *Remedial & Special Education*, 21, 359-371.
- [21]. Jones, M.L. (2009). A study of novice special educators' views of evidence-based practices. *Teacher Education and Special Education*, 32, 101-120.
- [22]. Kozleski, E., Mainzer, R., & Deshler, D. (2000). *Bright futures for exceptional learners. An agenda to achieve quality conditions for teaching and learning*. Reston, VA: Council for Exceptional Children. (ERIC Document Reproduction Service No. ED 451668)
- [23]. Landrum, T.J., Cook, B.G., Tankersley, M., & Fitzgerald, S. (2002). Teacher perceptions of the trustworthiness, usability, and accessibility of information from different sources. *Remedial and Special Education* 23(1), 42-48.
- [24]. Little, M.E., & King, L.M. (2008). Using online modules to bridge research to practice in classrooms. *Teacher Education and Special Education*, 32, 208-223.
- [25]. McLaughlin, M.W., & Talbert, J.E. (2006). *Building*

school based teacher learning communities. Professional strategies to improve student achievement. NY: Teachers College Press.

[26]. National Council for the Accreditation of Teachers (2008). *Professional standards for the accreditation of teacher preparation institutions.* Washington, D.C.: NCATE.

[27]. Sindelar, P.T., Brownell, M.T., & Billingsley, B. (2010). Special education teacher research: Current status and future directions. *Teacher Education in Special Education*, 33(1), 8-24.

[28]. O'Shea, D.J., Hammitte, D., Mainzer, R., & Crutchfield, M.D. (2002). From teacher preparation to continuing professional development. *Teacher Education and Special Education*, 23(2), 71-77.

[29]. O'Shea, D.J., & O'Shea, L.J. (1997). Collaboration and school reform: A twenty-first century perspective. *Journal of*

Learning Disabilities, 30(4), 449-462.

[30]. Schlager, M.S., & Fusco, J. (2003). Teacher professional development, technology, and communities of practice: Are we putting the cart before the horse? *The Information Society*, 19, 203-220.

[31]. Sindelar, P.T., Brownell, M.T., & Billingsley, B. (2010). Special education teacher research: Current status and future directions. *Teacher Education in Special Education*, 33(1), 8-24.

[32]. Smith, T.M., & Ingersoll, R.M. (2004). What are the effects of induction and mentoring on beginning teacher turnover? *American Educational Research Journal*, 41(3), 681.

[33]. University of Kansas Center for Research on Learning (2009). *Strategic instruction model (SIM)*. Retrieved from <http://kucri.org/sim/>.

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