Learning to SURF: Teachers and Researchers Creating Partnerships for Success

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Abstract

Strong collaborative partnerships between teachers and researchers who are interested in enhancing the outcomes of students with disabilities have the potential to improve student outcomes, facilitating a wave of student success. Teachers and researchers share their unique expertise in this collaborative partnership in order to understand student needs, outline research-based/evidence-based practices to address those needs and implement strategies with fidelity in the classroom. Critical factors in these partnerships include tenets of implementation science (exploration, installation, initial implementation, full implementation), collaboration, effective planning, and practice-based professional development. This article proposes a conceptual framework and examples of how to build a collaborative practice through the SURF model. Responsibilities within these partnerships and a four-step process are proposed. Guidelines for future collaborations are discussed to ensure that quality intervention research in special education is achieved.

Keywords: collaboration, conducting intervention research, teacher-researcher relationship

Conducting research in the special education field is an intricate process due to the multidimensional aspects that are unique to this area of study (e.g., multiple disability categories and specific needs of students, various educational settings in which these students are taught, as well as the cultural and linguistic diversity within the special education population) (Odom et al., 2005). Nevertheless, research is consistently being conducted and published in the field. The research community has been working diligently to determine what defines an instructional practice as research-based or evidence-based, and which instructional practices are deemed acceptable (CEC, 2014; U.S. Department of Education, 2013). Efforts over the past decade have emphasized instructional practices that are evidence-based (What Works Clearinghouse) based on the assumption that informing teachers about effective, evidence-based practices was the key to improving student achievement. But informing teachers what they should be doing has not been sufficient to improve student learning (Nichols, Glass, & Berliner, 2012).

For years the research-to-practice gap has been documented as an issue in the field of education (Cowie et al., 2015; Cooper & Shewchuck, 2015; Greenwood & Abbot, 2001; Vanderlinde & van Braak, 2010). Researchers have suggested numerous ways to address this gap. Some have proposed revisiting the dissemination process and practitioners' accessibility to research (e.g., Carnine, 1997; Kretlow & Blatz, 2011; Vanderlinde & van Braak, 2010). Other researchers have suggested ensuring the practicality and relevance of the research for the teacher and students, and considering the sustainability of practices (Carnine, 1997; Gersten, Chard, & Baker, 2000; Greenwood & Abbot 2001). Others have suggested enhancing the communication between teachers and researchers, and encouraging teachers to be involved in the research process (Carnine, 1997; De Vries & Pieters, 2007; Greenwood & Abbot 2001). It seems this last proposal, teachers and researchers collaborating in the research process, has the most potential to

shed light on how practices will work in the classroom. This collaboration helps the field examine whether the practices being investigated are indeed effective in specific contexts (Odom et al., 2005), get feedback on how the practices work in real educational environments (Postholm, 2009), and identify necessary changes/modifications based on the findings. In essence, using tenets of implementation science can guide the collaboration between researchers and school divisions in order to narrow the research-to-practice gap.

Implementation science, the scientific investigation of ways to scale up evidence-based practices to the real world, originated in the health care field. Health care researchers examined practices that improved medical services and patient care. Once evidence-based practices were identified, dissemination of these evidence-based practices was not realized or sustained in the real world. Researchers determined that identification of an evidence-based practice was not enough. Researchers also needed to find ways to enhance implementation of these practices in the real world in order to truly improve medical services and patient care (Cook & Odom, 2013; Eccles & Mittman, 2006). Similarly, education researchers identified evidence-based practices that improved students' skills and outcomes. Once evidence-based practices were identified, scaling up these practices to the classroom proved difficult. Many teachers implemented practices without fidelity, and sometimes did not want to change their practices from long sustaining instructional strategies they had used for years and perceived as effective. Implementation science in education is in its infancy. Clear guidelines are necessary for scaling up of evidence-based practices to the real world to make an impact on student learning (Cook & Odom, 2013; Fixsen, Blase, Metz & Van Dyke, 2013).

Implementation science focuses on ensuring that researchers use effective methods to design and deliver evidence-based interventions into the hands of teachers (Fixsen et. al, 2005).

According to Fixsen et al. (2013), effective implementation science goes through four stages, (a) exploration, (b) installation, (c) initial implementation, and (d) full implementation. In the exploration stage, a common understanding of the needs of the organization (district or school) are determined in order to move forward in the cycle. During the installation stage, identifying the resources, personnel, and training required to conduct the research is of utmost importance. During the initial implementation stage, members of the team learn and implement new skills. Modifications and adjustments occur in an ongoing reflective process. Full implementation occurs when the practice is adopted and activities to sustain the innovation are established. In implementation science, short cycles of innovation can be used to refine the instructional practice into statewide programs (Fixsen et al., 2013).

This model also provides an overarching structure needed for effective teacher-researcher collaborations on a smaller scale. Partnering together, researchers and teachers collaborate to build stronger programs in schools while ensuring that research and evidence-based practices are implemented with fidelity. This will ultimately improve student outcomes (Cowie et al., 2015; Greenwood & Abbot, 2001).

The purpose of this article is to propose a new structure for improving the implementation process, a four-step conceptual framework, SURF (**S –** setting the stage, **U–** understanding methodology and professional development, **R** – research in action, **F**– follow-up and sustainability). This SURF framework supports the collaborative process needed to create partnerships between schools, teachers, and educational researchers in order to conduct quality intervention research in the special education classroom and ultimately improve student outcomes. Our intent is to provide an easy to follow framework, predicated on the tenets of

implementation science, that can be used by teacher/researcher teams to implement research and evidence-based interventions designed to enhance teachers' instructional practices. See Figure 1.

SURF Framework

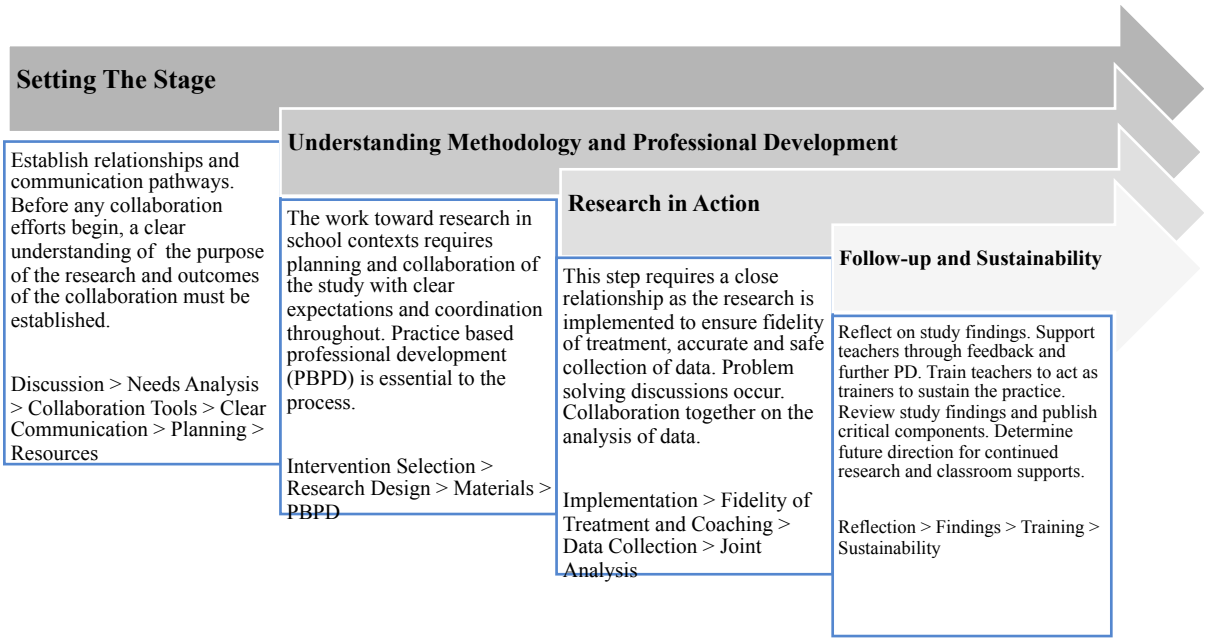

Figure 1. SURF four steps for collaborative projects in school based intervention research

Step 1. Setting the Stage

Just like the *exploration* stage in implementation science, before any collaborative efforts begin, it is crucial to have a clear understanding of the purpose of the research and the desired outcomes of the collaboration. Teachers and researchers are not at cross-purposes, both career fields strive to increase the knowledge and resource base to support students with disabilities. Many districts and schools have instructional priorities and initiatives which encourage teachers to collaborate and reflect on their current practices and find ways to improve these practices. This is a prime opportunity for researchers and school districts to establish partnerships to support district initiatives and improve teacher practices and student outcomes. When setting the

stage, communication and collaboration between teachers and researchers is key to a successful relationship. Research in schools happens in several ways. Teachers can reach out to researchers to discuss strategies to support classroom academic deficits. Researchers can approach schools and teachers to discuss new intervention ideas and gauge interest in conducting a research project to determine the effectiveness of an intervention. The first step teachers and researchers should engage in once a relationship is developed is to conduct a needs assessment. This assessment will help to determine student needs, appropriate research- or evidence-based interventions being implemented, and determine roles and responsibilities of both school personnel and the research team.

Collaboration is an indispensable skill in today's school environment and special education teachers must effectively collaborate with other disciplines to provide services successfully to students with disabilities (Brownell, Adams, Sindelar, Waldron, & Vanhover, 2006). When working in a collaborative relationship, stakeholders should have a clear understanding of the fundamentals of collaboration to be successful. Friend and Cook (2017) clearly define six fundamental precepts of effective collaboration: voluntarism, parity among participants, establishment of mutual goals, shared responsibility and decision making, shared resources, and shared accountability for results. These precepts are applicable when conducting intervention research in schools.

Researchers provide expertise in research design, data collection and analysis, and knowledge about specific research- or evidence-based strategies. Teachers directly work with students, understand their needs, and their school culture. Collaboratively, researchers and teachers are equal partners. In order to create a path for clear communication and trust, researchers and teachers need to address two primary questions: "Why should they participate in

intervention research studies?" and "How is the research/evidence-based practice going to support school initiatives, teachers, and the students in the classroom?" A compilation of possible questions to begin the conversation are included in Table 1.

Table 1

Sample teacher and researcher discussion topics

Questions teachers may ask	Questions researchers may ask
Is there research about this issue available?	Does the research strategy/practice match the school's instructional focus and learning/functional needs of students?
What were the results?	Does the administration support this research?
How long will the research take place and how does the research affect the instructional schedule?	Do all stakeholders understand the purpose of the research?
Which class and which students meet the criteria for participation?	What are the school district's Internal Review Board (IRB) policies?
How will I adjust my curriculum plan to accommodate the research?	Will this research become an instructional priority for teachers?
Will I be trained and how will I be supported by the research before, during and after the study?	Who are the persons assigned to help with time frames, logistics of the intervention and teacher training before, during and after the intervention?
What will happen with students who do not have permission to participate in the study?	What kind of professional development

How will results of the study be shared?	structure is available to train the teachers? How will the results be shared with staff after the intervention?

Prior to beginning research in a school one must obtain administrative support as well as approval from both the university and school district Institutional Review Boards (IRB). Administrative support is one of the most critical factors for successfully implementing research/evidence-based practices in real classroom settings, as administrators are the gatekeepers of a school. The collaborative process typically begins with a meeting where the stakeholders (e.g., the researcher, school administrator, and teachers) outline the needs, discuss appropriate interventions, develop a timeline, discuss confidentiality issues and consent procedures pursuant to IRB policies, and determine what resources will be needed from all parties. Teachers' buy-in is vital, so the content of the practice must be collaboratively designed to support the school's curricular goals and instructional priorities. This ensures students receive instruction that fulfills the school's learning objectives (Lee, Sachs, & Wheeler, 2014). Similarly, researchers need to understand the workings of the school environment. The timeframe and logistics of the intervention must take into consideration school-wide instructional needs and testing demands.

Step 2. Understanding Methodology and Professional Development

Teachers and researchers have unique roles and responsibilities when they collaborate in the research process. Similar to step two of implementation science, *installation*, when conducting intervention research in schools the resources, training, required tools, and access to materials need to be identified and put into place. Once the intervention is selected, the researcher needs to explain to the school administrators and the teachers the type of research

design that will be used in the classroom, and the guidelines that must be followed to ensure a quality study and confidentiality. For instance, if it is determined that a group experimental design is the best methodology to assess the effectiveness of two different intervention strategies (e.g., a reading comprehension strategy using graphic organizers versus a reading comprehension strategy using self-monitoring procedures), it is important for teachers to understand that the interventions must be taught precisely as designed, with the same amount of instructional time for both groups, and students must be assessed before, during, and after instruction to document their learning (Gersten et al., 2005). Another example might be a single-subject study, where individual or small groups of students will receive an intervention that is administered over a period of time (Horner et al., 2005). Meeting the exact demands of the research designs within a "real world" classroom setting can be accomplished with clear communication and a willingness on the part of all parties to accommodate school schedules, student activities, and teacher schedules.

The next step is for the researcher to train the teachers on the research/evidence based practice. Obtaining administrative support for teacher training and collaborative planning time is imperative. Research clearly shows that one time, sit-and-get training sessions are not sufficient to instruct teachers to implement a new instructional practice (Gulamhussein, 2013; Yoon, Duncan, Lee, Scarloss, & Shapley, 2007). Training must be flexible and iterative given the varied levels of teacher knowledge of evidence-based practices. Teachers should be provided ongoing professional development in order to implement new strategies with fidelity (McKeown et al., 2016; Walpole, McKenna, Uribe-Zarain, & Lamitina, 2010). The professional development must include modeling the new instructional approach and be specific to the subject and grade level that a teacher teaches (Gulamhussein, 2013). Training that has these

characteristics has been shown to change not only teachers' classroom practice, but also to improve students' learning (Yoon et al., 2007). Teachers need, on average, at least 14 hours of professional development, including follow-up, once they implement a new practice in the classroom to improve student learning (Yoon et al., 2007). Therefore, a practice-based professional development (PBPD) approach is recommended to help teachers develop understandings and skills to effectively apply an educational practice (Garet, Porter, Desimone, Birman, & Yoon, 2001; Grossman & McDonald, 2008; Harris et al., 2012). In a PBPD approach, time is devoted to building teachers' content and instructional knowledge about the research/evidence-based practice. Planning lessons, observation of an "exemplar" lesson, discussions about treatment fidelity, researcher observations of teachers' lessons, review of students' work, and planning how teachers will implement the strategy in their own classrooms with their own students should be part of the training. Joyce and Showers (2002) stated that training alone did not result in teachers actually changing their practice. Teachers need training along with coaching in order for a change of practice to occur (Joyce & Showers, 2002).

Fidelity of treatment is essential to maximize student outcomes and ensure a strategy is implemented as designed in order to accurately evaluate its effects. Given the importance of fidelity of treatment, it is crucial for teachers to have a clear understanding of how to implement a research/evidence-based practice with fidelity. Research shows that practices implemented with fidelity improve student outcomes (Greenwood, Delquadri, & Hall, 1989; Stein et al., 2008). In fact, when instructional practices are implemented with high fidelity the effectiveness of the strategy is two to three times stronger when compared to strategies that have been implemented with low-fidelity levels (Durlak & DuPre, 2008). Thus, researchers modeling the research/evidence-based practice with all the materials, and then having teachers practice before

implementation is important (McKeown et al., 2016). Ongoing coaching, observations, and support is an essential element of PBPD for the retention and application of new practices (McKeown et al., 2016; Walpole et al., 2010). Miss Chen's case study (Figure 2) provides a look at the PBPD model in action. Once the resources are allocated and established and trainings are completed, the next stage begins.

Miss Chen had been teaching students with emotional and behavioral disorders (EB/D) at her school for three years when her principal approached her about participating in a research study. A professor from a local university, Dr. Bell, was studying a new writing intervention for students with EB/D and was looking for a school in which to conduct her research. Miss Chen had been working hard on writing instruction, spending hours searching for materials to use with her students, only to end up creating things because she could not find materials that would work with her below grade level writers. Miss Chen jumped at the chance to work with an expert and learn more about effective writing instruction.

Before the study began, Miss Chen met with Dr. Bell several days after school. Dr. Bell gave Miss Chen some background information on the Self-Regulated Strategy Development (SRSD) writing strategy, which is considered an evidence-based practice for students with EB/D. Then, she showed Miss Chen videos of the lessons she would be expected to teach. Miss Chen followed along with the videos and ticked off each step of the lessons on a checklist as it occurred. After each video, Miss Chen used the scripted lesson plan and materials to practice teaching the lesson while Dr. Bell pretended to be the student. Periodically, Dr. Bell would pause to remind Miss Chen about a piece she had missed or to give her tips on how to explain a concept to students. By the time she started teaching the students, Miss Chen was confident that she knew what to do.

During the study, Dr. Bell checked in with Miss Chen each week to answer questions, give Miss Chen feedback on the lessons she had taught, and discuss any upcoming study logistics. After the study was over, Dr. Bell shared the students' results with Miss Chen and her principal. Now that she knew how to teach the writing strategy, Miss Chen encouraged her team teacher to try it with two other classes. Miss Chen co-taught with Ms. James, teaching her co-teacher the new strategy as she taught it to the students. At the end of the school year, Miss Chen was pleased to see that all students who had participated in the writing study passed the state writing exam and she was determined to continue using the strategy in the future.

Figure 2. Case study

Step 3. Research in Action

In implementation science, *the initial implementation stage* is when the innovation occurs for the first time (i.e., initial implementation of research in the classroom). The researcher can work with the teachers to manage the day-to-day logistics of the study. For example, teachers

know individual student schedules, which spaces in the school are available for small group work, or when a school-wide assembly might interfere with the teaching schedule. Teachers can help the researcher determine the best time to schedule sessions. Once implementation begins, ongoing observations and coaching with feedback to improve fidelity of treatment should occur (Stein et al., 2008).

Participating in a research study also requires detailed student assessment (Horner et al., 2005; Gersten et al., 2005). Student performance is typically measured before and after the intervention. Depending on the design of the study, students may be assessed throughout instruction as well. Assessments can include standardized measures as well as curriculum-based assessments. Data might also be collected through observation to record on-task and off-task student behavior. For all types of assessment, it is important that assessments be administered in the same way to all participating students so that their results can be compared (Gersten et al., 2005; Horner et al., 2005). Clarity in the design and planning of the research study with schools, teachers, and researchers allows for the building of strong teams and relationships prior to implementation. Further, it is important that researchers and teachers analyze data collaboratively and jointly discuss student performance.

Step 4. Follow Up and Sustainability

After the study has been implemented for the first time, it is imperative to consider ongoing communication and support to ensure the practice continues to be implemented with fidelity. Additional support and follow-up can be accomplished by providing further professional development for other teachers in the school, assisting teachers who participated in the study to conduct the training, and peer coaching. Implementation science is an iterative process. Teachers and researchers work together to adapt and modify an intervention to make it more effective. It

often takes several test-modify-retest cycles to improve the intervention to enhance student learning. Fixsen, Blase, Naoom, and Wallace (2009) state that "training and coaching are the principal ways in which behavior change is brought about" (p. 534). Incorporating new instructional practices with fidelity in the classroom requires a change in behavior for teachers; therefore, it is important for researchers to be there to provide ongoing coaching. Joyce and Showers (2002) found that knowledge and teachers' ability to demonstrate new skills are significantly greater when coaching is added to the training. Teachers who initially participated in the implementation can become trainers in their schools and serve as peer coaches (Aguilar, 2011). Peer coaching and training provides opportunities for teachers to enhance their skills and support their development while also adding data for their school evaluation cycles. While full implementation and sustainability of the practice within the school does not require intensive researcher involvement, long-term follow-up and support should be considered and addressed by the team. Scheduled consultations and/or refresher training sessions with the research team and schools has potential to improve the sustainability of practice. The review or need for additional funding should also be discussed in alignment with district and school instructional priorities. This final step of our framework is congruent to the *full implementation stage* of implementation science, which states that sustainability is critical to ensure the delivery of effective instruction to all learners (Fixsen et al., 2013).

Discussion

The SURF conceptual framework, which is modeled after the stages of implementation science, serves as a guide for teachers and researchers working collaboratively to ensure effective implementation of research/evidence-based practices in real world classroom settings. According to Fixsen et al. (2013), effective implementation science goes through four stages, (a)

exploration, (b) installation, (c) initial implementation, and (d) full implementation. Cook and Odom (2013) discuss the critical need for structures to support the implementation process in special education. Simply developing effective interventions is not enough. Effective models of implementation rely heavily on teacher knowledge and expertise. Involving teachers in the research process from the beginning better ensures that the interventions researchers are designing and testing will, in fact, be effective in improving student outcomes in the classroom.

The proposed SURF four-step process allows for open communication and partnerships to support quality instruction. Through these partnerships, teachers not only learn to implement research/evidence-based practices in classrooms and improve students' skills and outcomes (Boardman, Arguelles, Vaughn, Hughes, & Klinger, 2005; McKeown et al., 2016; Postholm, 2009; Walpole et al., 2010), but also become an integral part of the development, design, implementation, modification, and sustainability process. Beyond the students who directly participate in the initial implementation of a practice, current and future students in the school will have access to those strategies, as their teachers are trained in such practices and become confident in implementing them independently. Prioritizing fidelity of implementation is important for any school collaborative learning team. Once effects of evidence-based practice on student learning are realized, they have the potential to become established classroom practices. Klinger, Boardman and McMaster (2013) stated that the next phase is developing partnerships between divisions and researchers to scale-up the use of evidence-based practices at the district level. The SURF model offers teachers and researchers a model for collaboration to scale-up research/evidence-based practices within schools and divisions.

Conclusion

Given district and school instructional priorities, university-district/school partnerships are effective ways to meet schools' needs and potentially improve student outcomes. Schools, administrators, and teachers should seek out opportunities to work with researchers in institutions of higher education. Likewise, teacher and administrator preparation programs should encourage the discussion of this framework when training pre-service teachers on research/evidence-based practices. Our experience in the field of special education over decades has shown that researchers working alone and teachers working alone cannot solve the research-to-practice gap. It is only by working together that we can hope to utilize our knowledge of evidence-based practices to truly improve outcomes for our students. Building these relationships to encourage collaboration with teachers and researchers will serve to build and expand the repertoire of high-leverage, evidence-based practices. The SURF model offers a framework to engage in collaborative work as a first step to help bridge the research-to-practice gap.

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