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The Effects of Professional Development on High School Teachers'
Implementation of the Problem-Solving Process

Brandon Y. Jackson

A thesis submitted to the faculty of
Brigham Young University
in partial fulfillment of the requirements for the degree of
Master of Science

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ABSTRACT

The Effects of Professional Development on High School Teachers' Implementation of the Problem-Solving Process

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Master of Science

The majority of schools use punitive and reactive strategies to deal with maladaptive behaviors. This descriptive study was a replication of Wilmott (2012) and occurred in a multi-tiered system of supports (MTSS) high school. Professional development was provided to 22 teachers from a high school located in the western United States. This included 61% males and 39% females. Measures included the frequency of praise notes and ODRs, the quality of praise notes based on a praise note rubric, and a social validity questionnaire. The ODR and praise note frequencies were compared using the Spearman correlational coefficient that resulted in a weak correlation ($r(2) = -.385, p > .05$). Results were not significant in the ODR baseline to treatment ($t(3) = -1.849, p > .05$). The baseline praise note frequency compared to praise note frequency during treatment was significant ($t(3) = -4.115, p < .05$). Implications for educators suggested that the problem-solving process is feasible and essential when implementing evidenced based practices (EBPs), such as praise notes. The study concluded that ongoing professional development is integral to maintaining MTSS and EBPs. Limitations of this study include the lack of precise definitions in ODR reporting and minimal baseline data.

Keywords: praise notes, high school, MTSS, professional development, problem-solving model, schoolwide interventions

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Also, my sincere thanks goes to my committee: Michael Richardson and Darlene Anderson. Their feedback and constant support broadened the dynamics of how this research took place and was presented.

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DESCRIPTION OF THESIS STRUCTURE

This thesis, *The Effects of Professional Development on High School Teachers' Implementation of the Problem-Solving Process*, is written in a hybrid format. The hybrid format is used to satisfy traditional thesis requirements with journal publication formats.

The initial pages of the thesis reflect requirements for submission to the university. The thesis report is presented as a journal article, and meets the length and style requirements for submitting research reports to education journals.

The literature review is included in Appendix A. The consent for research form is included in Appendix B. Appendix C includes the weekly problem solving checklist that used in professional development. Appendix D includes the praise note rating rubric. Appendix E was the entire participant professional development checklist. Appendix F includes the school team professional development checklist. The social validity questionnaire is included in Appendix G.

This thesis format comprises two reference lists. The first reference list includes references from the journal-ready article. The second list includes all citations used in the Appendix entitled "Review of the Literature."

Background

One of the most significant obstacles to learning in public schools is student problem behavior (Rosenberg & Jackman, 2003). Disruptive and maladaptive behavior in schools is an ever-increasing concern for educators across the nation (Irvin et al., 2006; Irvin, Tobin, Sprague, Sugai, & Vincent, 2004; Mendler, Curwin, & Mendler, 2008; Oswald, Safran, & Johanson, 2005). Every day, teachers face a myriad of problem behaviors, both major and minor. As a result, many teachers get burned out and leave the profession (Weiner, 2003; Wolk, 2003). Maladaptive behavior is also very costly and takes needed time and money away from academics (Scott & Barrett, 2004).

In response to problem behaviors, educators commonly resort to punitive disciplinary practices as a means to discourage and eliminate problem behaviors (Matjasko, 2011). Research indicates that punitive practices create animosity between the students and educators and are more likely to increase problem behaviors (Matjasko, 2011; Way, 2011). Time and money are often spent towards managing these punitive practices that could otherwise be directed toward proactive solutions, such as multi-tiered system of supports (MTSS) (e.g., Response to Intervention (RtI) and Schoolwide Positive Behavior Support (SWPBS) and other evidenced-based practices (EBPs)).

Based on current research, there is a clear need for more proactive, evidenced-based methods to influence the development of appropriate behavior in children and youth (Anderson, Hamilton, & Hattie, 2004; Bradshaw, Reinke, Brown, Bevans, & Leaf, 2008). Researchers across the nation report that when an SWPBS system (the behavior side of MTSS) is in place, disruptive behaviors decrease substantially (Barrett, Bradshaw, & Lewis-Palmer, 2008; Reinke, Lewis-Palmer, & Merrell, 2008; Scott & Barrett, 2004). Noted and research driven proactive

schoolwide EBPs are effectively implemented by establishing an SWPBS model (Irvin et al, 2006). It has been documented that using a proactive approach, such as SWPBS, will minimize unwanted behavior of most students on a schoolwide level in elementary schools and middle schools while promoting appropriate behaviors (Luiselli, Putnam, Handler, & Feinberg, 2005; Nelson, Young, Young, & Cox, 2009; Sugai & Horner, 2002; Sugai & Horner, 2009).

The SWPBS model evolved from the need to implement EBPs as a result of the realignment of IDEA 2004 to the “No Child Left Behind Act of 2001” (NCLB), (Sugai & Horner, 2002; Sugai & Horner, 2009). The evolution of SWPBS began in elementary schools and has now become more prominent in middle schools (Spaulding et al., 2010). It is ever increasing at the secondary school level, as program definitions are still being fine-tuned to meet the list of diverse needs at the secondary level, specifically in high schools (Flannery & Sugai, 2009).

Evidenced-based practices that have been used successfully in elementary and middle schools to improve behavior and academics include verbal and written behavior-specific praise (praise notes) (Luiselli et al., 2005; Sugai et al., 2000; Sugai & Horner, 2002). The successful use and effectiveness of praise notes in elementary and middle schools has paved the way for further utilization in secondary settings (Nelson et al., 2009; Wheatley et al., 2009). Also, research implications in elementary and middle schools indicate the need for continuous and sustained professional development to maintain full fidelity of interventions such as praise notes in an SWPBS system (Eber, Lewis-Palmer, Pacciano, & University of Southern Florida Tampa Research and Training Center for Children's Mental Health, 2002; Sugai & Horner, 2009).

Researchers are still exploring how to best implement SWPBS in high school settings and determining which EBPs, such as praise notes, are the most effective in these contexts (Flannery & Sugai, 2009). Due to the varying contextual factors across high schools such as school culture, instructional organization, roles of faculty and staff, graduation requirements, and so forth (National High School Center (NHSC), National Center on Response to Intervention, and Center on Instruction, 2010), the implementation of an SWPBS system will look different as compared to elementary and middle schools (Flannery & Sugai, 2009; NHSC et al., 2010). Currently, there is limited information that substantiates the mechanisms involved in an effective praise note program within the SWPBS approach (Duffy, 2007; Flannery & Sugai, 2009).

A forum held in 2009 concluded that “SWPBS is doable [in high schools]... however, implementation features may need to be adjusted to accommodate the high school context (e.g., organizational differences, variations in purpose, development considerations, competing initiatives and priorities)” (Flannery & Sugai, 2009, p. 18). The forum recommended that successful SWPBS systems should incorporate the following: (a) strong faculty and staff support, (b) data-based decision making, and (c) a selective continuum of EBPs based on contextual and demographic factors. Additionally, they suggested a focus on post high school outcomes (Flannery & Sugai, 2009). Finally, they noted the need for more research regarding the effects of EBPs, such as praise notes, at the high school level on behavior and academics (NHSC et al., 2010). Data-based decisions should drive the implementation of praise note implementation and be used in conjunction with behavior outcomes (Irvin et al, 2004). Recent models of SWPBS now include academic and behavioral supports in one model now referred to as multi-tiered system of supports (MTSS) (Duffy, 2007). The use of a MTSS also incorporates

the use of data-based decision making through the use of the problem-solving process (Florida Problem-Solving/Response to Intervention, 2011; Kansas Multi-Tiered System of Supports (KTMSS), 2010).

The most substantiated sources of data documenting behavior outcomes within the SWPBS model are office disciplinary referrals (ODRs) (Chalk & Bizo, 2004; Irvin et al., 2006; Irvin et al., 2004; Sugai et al., 2000). Recognizing that ODRs are the principle source for behavioral data within a SWPBS model, it is important to acknowledge that there is not much being done to track positive student behavior based on current literature (Pfleger, Wiley, & University of Colorado at Boulder National Education Policy Center, 2012). It seems logical that educators should also track positive strategies and EBPs, such as praise notes (Brophy, 1981; Nelson et al., 2009). One such possible source is the rate of behavior-specific praise (BSP) either verbal or written.

Praise notes have been found to be an effective, proactive approach to influencing classroom behavior, particularly when the praise is contingent and specific. The use of praise notes is more common among elementary and middle schools (Irvin et al., 2004; Lewis & Sugai, 1999; Nelson et al., 2009); whereas, there is limited research on praise in high schools, particularly in respect to praise notes (Flannery & Sugai, 2009; Nelson et al., 2009).

Researchers have shown that praise notes are a major contributing factor for increasing on-task behavior by 90% in middle schools (Chalk & Bizo, 2004; Swinson & Harrop, 2005; Swinson & Knight, 2007). As mentioned above, the impact of using behavior-specific praise, including praise notes, has not been thoroughly explored in high school settings. However, there are strong implications that using praise notes in high school has the potential of producing

positive outcomes with respect to student academics and behaviors (Duchaine, Jolivete, & Fredrick, 2011).

One of the key tenets of successful implementation of SWPBS is establishing agreement from at least 85 percent of the faculty. Also, there are only a small percentage of schools committed to implementing SWPBS with fidelity (Duffy, 2007; Flannery & Sugai, 2009). Concerns exist about the most feasible and effective way to implement praise notes in schools especially in high schools (Osher, Bear, Sprague, & Doyle, 2010). Thus, researchers continue to explore the best medium for establishing commitment and informing best practice amongst educators (Guskey & Yoon, 2009).

Researchers suggest that focused and effective professional development of proactive, evidenced-based behavior strategies can positively influence student behavior (Chalk & Bizo, 2004; Jenkins & Yoshimura, 2010). Professional development and pedagogical training are foundational in training teachers how to be successful in implementing praise notes so they meet student needs (Nelson et al., 2009). Teachers report being more confident in implementing EBPs, such as praise notes, when they participate in *ongoing* professional development. This approach provides them with a continual support mechanism (Chalk & Bizo, 2004; Guskey & Yoon, 2009; Jenkins & Yoshimura, 2010).

Typically, a professional development (PD) consists of one-time teacher workshops and conferences (Guskey & Yoon, 2009). This approach to professional development leaves teachers with little, if any, follow-up. Effective PD methods are those that consist of ongoing support and follow-up training. One way to accomplish this in schools is for faculty to participate in regular meetings where they share information, discuss problems, and generate

solutions. This process is known as the problem-solving process (Guskey & Yoon, 2009; Jenkins & Yoshimura, 2010; KMTSS, 2010).

The problem-solving process is an important aspect of maintaining SWPBS/MTSS and schoolwide interventions (KMTSS, 2010; Sugai et al., 2000). Educators use the problem-solving process to a) define the problem, b) develop a plan based on data analysis, c) implement the plan, and d) evaluate the plan through data analysis (Florida Problem-Solving/Response to Intervention Project, 2011). During the problem-solving process, data such as ODRs and praise notes, are used to discuss students' academic and/or behavior progress through team discussions. This process is essential to selecting and monitoring the effectiveness of interventions such as praise notes (Irvin et al., 2004, Nelson et al., 2009). There are different types of ODR data that can be used to predict behavior outcomes that help teams choose appropriate interventions to modify behavior (McIntosh, Frank, & Spaulding, 2010). The problem-solving process should be continually used to maintain the fidelity of interventions within an MTSS school (Irvin et al., 2006; Newton, Horner, Algozzine, Todd, & Algozzine, 2009; McIntosh, Reinke, & Herman, 2009.)

Statement of Problem

Research clearly indicates that maladaptive behavior is an increasing problem across all ages, especially among adolescents (Forbes & Dahl, 2010; Irvin et al., 2004; Mendler et al., 2008; Oswald et al., 2005). Educators continue to use punitive and reactive strategies to discipline students (Matjasko, 2011). These strategies typically produce more negative outcomes and increase students' maladaptive behavior instead of developing appropriate behavior (Way, 2011). Proactive and preventative strategies are needed to encourage appropriate schoolwide behavior (Sugai & Horner, 2009). Faculty agreement and effective professional development is

needed to ensure that evidence-based behavioral practices such as praise notes are adopted and implemented with fidelity, particularly with high school students.

Since the inception of the No Child Left Behind Act (NCLB, 2001) there has been a call for more EBPs (Hezel Associates, 2007). There is an array of EBPs from which educators can choose. What is lacking is adequate training to help teachers identify EBPs that will produce desired outcomes (Reinke et al., 2008; Sugai & Horner, 2009). General findings of professional development indicate that the problem-solving process within an MTSS school supports educators in selecting and effectively implementing appropriate EBPs (Kalis, Vannest, & Parker, 2007; Oswald et al., 2005). Also, there is limited research regarding how to effectively maintain fidelity of the problem-solving process schoolwide (Newton, Horner, Todd, Algozzine, & Algozzine, 2012).

Statement of Purpose

This research is a systematic replication of a master's thesis conducted by Wilmott (2012). Table 1 indicates differences. The intent of the present study is to add to the findings of Wilmott by instructing some of the key components needed to establish multi-tiered system of support (MTSS) within a high school setting. Specifically, high school educators were guided in how to: (a) use behavior-specific written praise to reinforce appropriate behavior, (b) analyze data from ODRs and written praise rates, and (c) use the problem-solving process to inform effective use of evidenced-based practices (Florida Problem-Solving/Response to Intervention, 2011; Guskey & Yoon, 2009; KMTSS, 2010). Even though previous research has found a relationship between behavior-specific praise and ODRs, it has not comprehensively covered behavior-specific written praise (praise notes), especially in high school settings (Lewis & Sugai, 1999; Nelson et al., 2009; Wilmott). The present study examined the effects of professional

development, including the problem-solving process, on the number of praise notes written, the quality of praise notes written, and the number of ODRs. A group design was used to measure the effects of professional development on teachers' use of the problem-solving process in implementing praise notes and its effects on student behavior.

Table 1

Comparison of Wilmott (2012) and Current Research

	Wilmott (2012)	Jackson (2013)
Participants	Elementary School Teachers	High School Teachers
Setting	Elementary and district in western US, participation in ABC-UBI	High school and district in western US, participating in UMTSS (formerly ABC-UBI)
Dependent variables	Number of Praise Notes, Number of ODRs	Number of Praise Notes, Quality of Praise Notes, & Number of ODRs
Independent variables	Professional Development training teachers as a large group that consist of behavior-specific praise training, and data analysis training.	Professional Development training teachers as a large group that consists of behavior-specific written praise training, and data analysis training through a problem-solving process.
Research Design	Group Design	Group Design
Data Collection	ODR data collected monthly Praise note data collected monthly	ODR data collected weekly Praise note data collected weekly
Data Collection Forms	Professional Development Checklists Fidelity Checklists	Using similar checklists with changes in the wording questions asked Using same with some wording changes and some added items (excluded the administrator checklist)
Written Praise Criterion	Follows behavior-specific praise criterion found in Nelson et al., (2009)	Follows behavior-specific praise criterion found in Nelson et al., (2009)

Note. ABC-UBI = Utah's Academic Behavior Coaching Initiative; ODRs= Office Disciplinary Referral; Information for comparison is from "The impact of professional development on the delivery of written praise and office disciplinary referrals," by Shalon Wilmott (2012).

Research Questions

The following questions were addressed:

1. What are the effects of high school teacher written praise (praise notes) on the frequency of office disciplinary referrals (ODRs) in a high school setting?
2. What are the effects of professional development, including the use of the problem-solving process (i.e., training, collaboration, and data analyses), on high school teachers' delivery of praise notes, specifically the frequency and quality of the praise notes?
3. What are the effects of the problem-solving process and teachers' data analyses on praise notes of students with two or more ODRs?
4. What are high school teachers' perceptions of participating in professional development and using the problem-solving process in implementing praise notes?

Method

This research study occurred over a three-month period with data collected both prior to and post professional development (PD). This section will include the description of how the study was carried out in respect to the setting, participants, materials used, measures, data collection procedures, and study design. Approval was obtained through the university institutional review board. All 22 participants signed a consent form in order to participate in the study (see Appendix B).

Setting

This study was conducted in a rural high school located in the Western United States where multi-tiered system of supports (MTSS) had been instituted at the beginning of the current school year. The school was selected from the state's MTSS initiative. This was the first year the school received training from the university and state in the implementation of MTSS

schoolwide. The school serves about 488 7th-12th grade students in which 85% are Caucasian (white), 11.9% Hispanic, 2.3% Asian, and 1% other. Of the students enrolled, 41.8% of students are from low socioeconomic status, 20% are English Language Learners, and 11.7% are students with disabilities. The teacher to student ratio is approximately 21:1.

Participants

All 22 teachers at the selected high school were invited to participate in the study. There were 22 licensed teachers in the following content areas: English, Science, Mathematics, Career Technology Education (CTE), Social Studies, the Fine Arts, the Performing Arts, Physical Education/Athletics, and Special Education. Participant demographics include about 83% Caucasian (white), 13% Hispanic/Latino, and 4% other. Sixty-one percent of the participants were male and 39% were female.

Materials

Materials were used for the purpose of training participants and collecting data. Examples of praise notes were used to train the teachers on behavior-specific written praise (praise notes). Checklists were provided to help guide teachers in the problem-solving process (see Appendix C). These checklists included the steps for collaborating within content teams in praise note implementation. Other materials included: blank carbon copy praise notes, checklists, computers, internet, word-processing software, online data-based system to track results (SIS 2000+ & Google drive), pencils/pens, and paper.

Dependent Variables

The dependent variables for this study were the frequency of office disciplinary referrals (ODRs) as well as the quality and frequency of praise notes across eight weeks. Prior to the study, the teachers, administrators, and staff had tracked the number of ODRs; however, praise

frequency was not tracked. The school used a form of written praise involving the use of post cards. Teachers wrote positive comments on the post cards and sent them to the students; however, the comments, as reported by participants, were inconsistent with the definition of behavior-specific praise used in this study and were not recorded. Some teachers reported using the post cards, whereas others did not. In other words, the post cards were used inconsistently and were quite generic.

The following sections will describe what constituted an ODR, the formatting of the praise note program, and the data collected in connection with the ODRs and praise notes.

Office disciplinary referrals. A student received an ODR when they violated a school rule severe enough to be referred to administration. This is the first year the school had been tracking ODRs as part of participating in the states MTSS initiative. Students were referred for behaviors including but not limited to: disrespect to authority, disorderly conduct, and cheating. These infractions were recorded by the principal on an internet-based program called the Student Information System 2000+ (SIS). This Internet-based program was designed to keep track of educational data (e.g., attendance, demographics, discipline, schedules, and grades).

Praise notes. The praise note program is a proactive EBP designed to reward students' behavior for meeting schoolwide expectations. The praise note program is a major component of the state's universal multi-tiered system of supports. Praise notes were provided on a three by four inch piece of carbon copy paper that contained the student's name, date, a check box next to the printed school expectation being followed, teacher signature, and optional comment (e.g., Suzie was caught being respectful in class!) (Nelson et al., 2009). Praise note data were coded and included the specific praise given, the frequency, the quality, and comments (see Figure 1).

The quality was determined by using a praise note rating scale based on the criterion of Nelson et al. (2009).

I want to recognize _____ for:		
<input type="checkbox"/> Following Instructions	<input type="checkbox"/> Work Completion	
<input type="checkbox"/> Showing Respect for others	<input type="checkbox"/> Using Appropriate Language	
<input type="checkbox"/> Other _____		
Comments: _____		

Teacher Signature: _____		Date _____
<i>White Copy (Student)</i>	<i>Yellow Copy (Drawing)</i>	<i>Pink (Records Copy)</i>

Figure 1. Praise note example.

Independent Variable

The independent variable included both the delivery and implementation of professional development activities. The professional development was designed to assist teachers to collectively select or modify current positive intervention(s) that would be likely to increase student achievement and positive behavior (KMTSS, 2010, Utah Personnel Development Center (UPDC), 2012). Specifically, the professional development consisted of three components involving the use of (a) the problem-solving process in defining a problem and discussing interventions (Florida Problem-Solving/Response to Intervention, 2011), (b) behavior-specific praise via praise notes, and (c) procedures to analyze current ODR data and praise notes via the problem-solving process. The problem-solving model is part of the state's multi-tiered system of supports model (KMTSS, 2010; UPDC, 2012.)

Historically, schools involved in the state's multi-tiered system of supports initiative have not had a systematic approach for analyzing data at a universal level. Thus, this study marks a unique effort to systematize such an effort, especially in regards to behavior outcomes (i.e., praise notes and ODRs) (UPDC, 2012). The following sections will describe the aspects the professional development which includes: the entire participant PD, praise note training, implementation of praise notes, and school team PD.

Professional development was conducted during a regular faculty meeting held across two sessions to introduce the problem-solving model and the praise note program to the participating school (Florida Problem-Solving/Response to Intervention, 2011). The first visit to the school included professional development (PD) for all participants. The second visit was with the school team to provide ongoing support in the use of the problem-solving process and praise note implementation. Participants included the faculty (teachers), the school team (composed of the principal and the content department heads), and the building facilitator (school principal).

Entire participant PD. As was mentioned above, the first professional development session was provided to all 23 participants, which included 22 teachers and the building facilitator. First, the participants were introduced to the components of the problem-solving process that include (a) defining the problem, (b) discussing possible interventions to address the problem, (c) implementing the plan, and (d) making data-based decision in implementation (Florida Problem-Solving/Response to Intervention, 2011). Next, the researcher led a discussion using the problem-solving process as part of the PD. This discussion included selecting which EBP would be the most appropriate for the school. The EBP the majority of faculty chose was

the use of praise notes. Additional details about the independent variable, including the trainings, are discussed below.

Participants were asked what problems their school dealt with that negatively affected student achievement. After a thorough discussion, participants offered a number of problem behaviors, specifically, poor attendance, lack of student compliance, poor work completion, and lack of respect (e.g., inappropriate language, general respect to others). They also reported that student compliance in the classroom continued to be a significant problem among students who were frequently referred to the office for discipline problems (two or more ODRs). They felt that the current school interventions were not working effectively as desired. With that said, the faculty wanted to consider more effective ways to reward students for following schoolwide expectations.

Current interventions that were being used schoolwide prior to PD included post cards with positive comments mailed to the students and gift certificates for good attendance and exemplary academic performance (e.g., movie tickets, ski tickets, pizza parties). The majority of participants were supportive of using positive reinforcement praise, but felt their current practice of the postcards and gift certificates was ineffective. They were open to suggestions to make what they were doing more effective by following research-based practices.

The participants were then introduced to the praise note program as a possible EBP for rewarding students' behavior and achievement. As was mentioned previously, the post card system being used was a form of written praise; however, it didn't meet the requirements of praise notes outlined by Nelson et al. (2009), in that most comments were general and praise was not immediate. Specifically, the postcards were not collected for data purposes (i.e., collection or analysis), nor was there frequent or consistent use of the notes by teachers in regard to student

behavior. The researcher and participants discussed what could be done to modify the use of the postcards to be more effective.

Specifically, the participants were introduced to the principles of the researched-based effectiveness of behavior-specific praise (BSP), the underlying principles of praise (behavior-specific, immediate, frequent, and contingent), and forms of BSP (verbal and written) (Brophy, 1981; Nelson et al., 2009; Sugai & Horner, 1999). This led to a discussion of what effective written praise looks like and they were introduced to sample praise notes. After introducing the praise notes as a possible intervention, the majority of the participants were in agreement to implement praise notes. Subsequently, they were trained in how to implement an effective praise note program.

Praise note training. Prior to the PD, the school had a list of 10 general schoolwide behavior expectations. The building facilitator (principal) worked with the researcher to narrow down school expectations to four that were specific, observable, and measurable (Sugai & Horner, 1999). The praise notes were designed to include the four expectations so participants were more likely to focus on reinforcing students as part of their schoolwide behavior support efforts. The expectations included: (1) following instructions, (2) using appropriate language, (3) completing work, (4) showing respect for others, and (5) other (an option for teachers to praise students for classroom expectations). Participants were trained to implement the praise note system by: (a) identifying effective and non-effective praise note examples, (b) writing effective praise notes, (c) conducting a mock praise note drawing, and e) analyzing the data (i.e., praise notes and ODRs).

First, participants were introduced to the key parts of a praise note through examples that included the student's name, the date, a check in the box of the specific behavior being praise,

the teacher's signature, and an optional comment. These examples were then compared against the praise note rubric (see Appendix D) in which praise notes were rated from 1 to 4 (4 being an effective praise note and 1 being an ineffective praise note). This rating scale was translated into a rubric that was distributed to the participants. Participants used the rubric to ensure consistency and quality as they wrote the praise notes. Non-examples were also shared with the participants. A non-example of a quality praise note consisted of the student's name, a general statement (e.g., good job, excellent work), and the teacher's name.

After the teachers were shown the difference between an effective and a non-effective example of a praise note, they were asked to differentiate between effective examples (a rating of 3 to 4) and ineffective examples (a rating of 1 to 2) through a group quiz. Then participants were invited to write praise notes to someone sitting next to them. They rated each other's praise notes using the praise note scale. Ninety-five percent of participants praise notes rated a four on the praise note scale.

Following writing praise notes to each other, the researcher demonstrated the weekly drawing. Participants gave the white praise note copy to the person they praised and handed in the other two copies (yellow and pink) for the prize drawing, which simulated the weekly praise note drawing. The researcher then put all the yellow copies into a container and selected seven praise notes at random. The participants whose names were drawn received a prize.

Following the "rehearsal" drawing, participants were asked to share current situations of students they were concerned about in respect to achievement and behavior. Drawing from these situations, the researcher and participants discussed the value of using data, such as ODR and frequency of praise notes to make decisions as to how to approach these situations. During this discussion, the faculty mentioned that students with ODRs were not necessarily being praised for

their efforts. The faculty decided that in their teams, they would discuss individual students with two or more ODRs to see if they were being praised adequately.

The teams were given a team meeting checklist to guide their data analysis during weekly meetings (see Appendix C). The participants were instructed to take data on who was being praised, difficulties they encountered in the implementation efforts, and any other information pertaining to praise note implementation (i.e., successes and difficulties). These data would be used in weekly team meeting discussions regarding praise note implementation and necessary modifications. During the school team training, which was held midway through the study, the researcher demonstrated the use of the problem-solving process using current data to help the school team make data-based decisions regarding the praise note program. The school team then trained the rest of the participants during weekly team meetings.

Praise note implementation. Participants implemented the praise note program for the duration of the study. After the first week of praise note implementation they began the weekly drawings for students. The rewards distributed at the drawing included gift certificates, candy bars, school memorabilia, and electronic device accessories. Praise note implementation was discussed during weekly team meetings. Specifically, participants reported that during weekly team meetings they discussed which students were being praised, students who needed more praise notes, and various successes and difficulties. The team leaders compiled weekly team data and anecdotal notes to discuss during the bi-weekly school team meeting.

School team PD. The school team was composed of the content team leaders and the principal. They are in charge of overseeing the implementation of MTSS at the school (UPDC, 2012). Their responsibility is to discuss both the successes and challenges associated with the

implementation of MTSS. These team members are also in charge of overseeing schoolwide interventions such as praise notes.

Midway through the study, the researcher met with the school team to discuss the praise note program. Praise notes had been implemented for at least four weeks prior to this meeting. The researcher also reviewed with them the weekly team meeting checklist and asked if there were any questions or concerns. The school team reported that participants liked the praise note program and that classroom problem behaviors were perceived to be decreasing. They also reported that students liked receiving praise notes and wanted to know how to get more.

Study Design

This was a descriptive study that compared the ODR and praise note data collected both pre and post professional development. Student data were collected across the duration of the study on a weekly basis. Specifically, the baseline consisted of the frequency of student ODRs and praise notes collected for four weeks prior to the beginning of the professional development.

Data Collection

Praise note and ODR data were collected by the researcher on a weekly basis. The building facilitator mailed praise note copies and sent ODR information electronically to the researcher. Praise notes were coded into a spreadsheet by two raters. Additionally, the building facilitator emailed the reason for the referral and the number of referrals to the researcher. The ODR frequency included all reasons that students were referred to the principal.

Inter-rater Procedures

Each week, the data were rated and coded electronically into a spreadsheet by two trained independent raters. The electronic spreadsheet was password protected and encrypted to ensure that student information and data were kept confidential. The two raters were undergraduate

students in an education major. Both were Caucasian, female, and from ages 18 to 22. Raters were given a confidentiality agreement to sign, which was retained by the researcher. Their primary responsibilities included coding praise notes into an electronic data sheet and securing praise notes in a locked filing cabinet. Raters labeled each praise note with a number that corresponded with the spreadsheet row (i.e., week) in which they were entered. The number, date, specific praise given, rating, and comments given by the teacher were coded into the spreadsheet.

The independent raters were trained by practicing on praise note samples. Each rater was given 10 praise notes. Raters independently gave the praise notes a score from 1 to 4 based on a praise note rating scale (see Appendix D). Three praise notes were previously identified as a 4, three praise notes were a 3, two praise notes were a 2, and two praise notes were a 1. Inter-raters needed to reach 90% agreement. Agreement was defined as the raters giving the same praise note the same rating. Raters reached 100% agreement and maintained 90% agreement or above throughout the study.

Treatment Fidelity

In order to ensure fidelity of professional development implementation throughout the study, the researcher provided specific training as was described in the entire participant PD. The researcher completed a checklist (see Appendix E) during the initial teacher training and a checklist (see Appendix F) during the initial school team training to ensure all major points were discussed during professional development.

Social Validity

Following the completion of the study, participants were asked to complete an online questionnaire that evaluated teachers' perceptions of the professional development, problem-

solving model, and praise note program (see Table 3 & Appendix G). This questionnaire was completed anonymously. The information from this questionnaire was used to validate the use of the problem-solving model and written praise in high schools. It also provided data regarding the effectiveness, feasibility, and sustainability of (a) using the problem-solving model in defining problems and selecting interventions (Florida Problem-Solving/Response to Intervention, 2011), (b) the use of behavior-specific praise via praise notes, and (c) analyzing current data such as ODRs and praise notes.

Results

The frequency and quality of praise note data, as well as ODRs, were collected on weekly basis over the course of eight weeks (see Table 2). Data were examined descriptively through correlational and visual analyses comparing both the praise note quality and frequency with the ODRs (see Figure 2). Additionally, 100 of the praise notes were randomly selected to compare the specific praise (boxes checked) to comments. The possible categories were (a) following instructions, (b) work completion, (c) showing respect for others (d) using appropriate language, and (d) other (see Figure 1). The data analyses were used to help the researcher examine increases or decreases in the written praise note, the increases or decreases in written praise note quality, changes in monthly variance across the study, and to provide recommendations for MTSS and professional development within a high school settings.

Table 2

Praise Note and ODR Frequency

Week	Praise Notes Frequency	Praise Note Average Rating	ODR Frequency
1	105	3.72	7
2	81	3.58	0
3	33	3.85	6
4	48	3.67	7
5	62	3.73	7
6	38	3.82	4
7	102	3.83	1
8	38	3.45	4

Note. Praise note and ODR frequency were measured weekly along with an average praise note quality rated on a scale of 1 to 4 with 4 being the highest quality (Nelson et al., 2009).

Effects of Praise on ODRs

The ODR and praise note frequencies were compared using the Spearman correlational coefficient. A weak correlation was found that was not significant ($r(2) = -.385, p > .05$). The ODR baseline was compared to the ODR frequency during treatment using a paired-samples *t* test. The mean on the ODR baseline frequency was 2.0 (SD = .82), and the mean for the weekly ODR frequency post-treatment was 5.0, (SD= 3.87). Results were not significant in the ODR baseline to treatment ($t(3)=-1.849, p > .05$). The data suggests that ODRs actually increased slightly; however, there are other factors that may have contributed to the ODR increase, which are discussed in the discussion section.

Effects of Professional Development on Teacher Praise

During baseline, participants did not use a form praise note that met all EBP requirements (Nelson et al., 2009). Once the praise notes were revised as part of the professional development

participants' praise increased to an average of about 67 praise notes per week with an average of 253.5 praise notes per month (see Figure 2). The weekly praise note frequency in baseline was compared to the weekly praise note frequency during treatment using a paired-samples *t* test. The mean for the baseline praise note frequency rate was 0.0, (SD= 0). The mean for the revised praise notes was 66.75, (SD=32.4). A significant increase from baseline praise note frequency to praise note frequency post-treatment was found given a two-tailed test ($t(3)=-4.115, p<.05$).

Visual analysis (see Figure 3) shows praise note and ODR increases and decreases during treatment. After the first PD, the praise note frequency started out around 100 and then steadily decreased until week 7 or the 3rd week of treatment. During week 10, the second PD was held with the school team and the following week showed a dramatic increase from about 40 praise notes to 100 plus (see Figure 2, week 11).

Each praise note was rated to verify fidelity in how praise notes were being used (see Table 2 above). Two inter-raters rated each praise note on a scale from 1 to 4, using a praise note quality rubric, with 4 being the highest. The quality of praise notes were analyzed to determine if the praise notes were specific and contained the student's name, date, and teacher signature. The praise note quality stayed at or above 3.4 for the duration of the study.

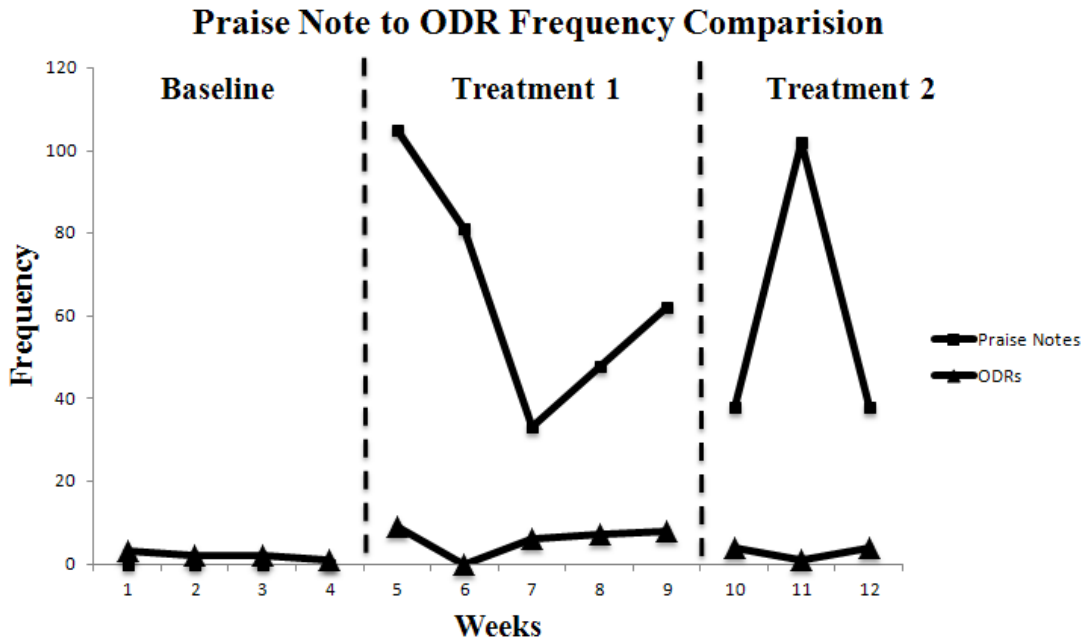


Figure 2. Weekly praise note and ODR frequency. This compares praise note and ODR baseline data to post-treatment 1 and 2. Treatment 1 = entire participant initial PD. Treatment 2 = School team PD five weeks following the initial PD.

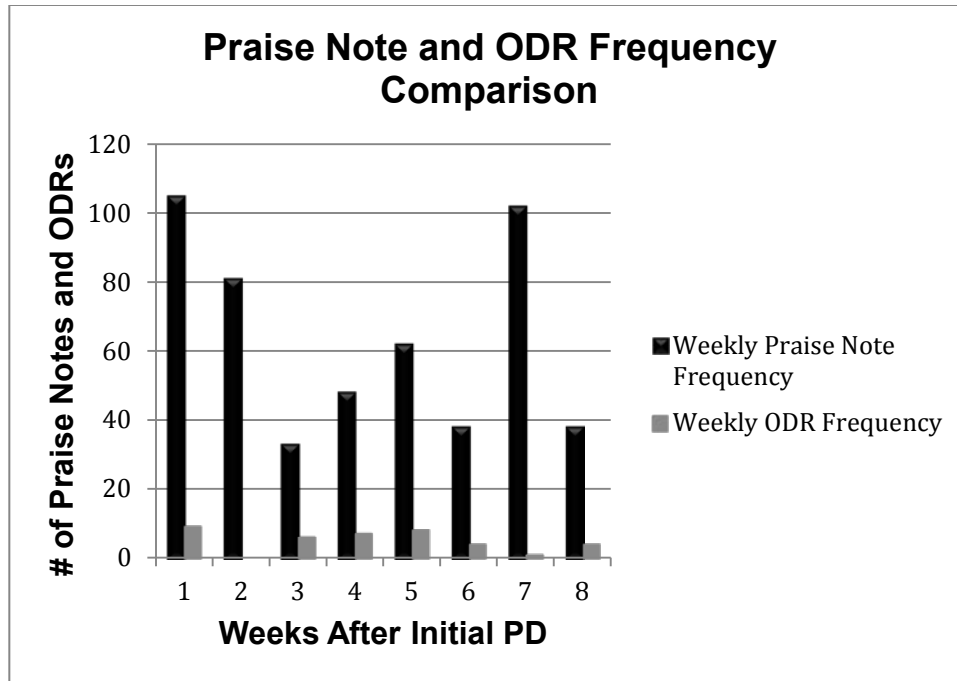


Figure 3. Praise note frequency and ODR comparison after PD. Generally when praise note frequency was the highest, the ODR rate was lower.

Behavior-Specific Praise

Each praise note contained five categories that could be marked by the teacher. Category 1= followed instructions, 2= work completion, 3= showing respect, 4 = using appropriate language, and 5 = other. Each praise note had a space provided for comments. A random sample of 100 praise notes were taken to compare the category checked to the comment given. Of the 100 notes sampled, only 8% of comments did not contain behavior-specific praise and 6% had no comment.

Eighty-six percent of the praise notes sampled had a specific comment that corresponded to the box checked on the praise note. Also, 55% had only one box, whereas 39% selected one or more category. Of those 39% that selected more than one category, only 20% of comments matched all categories. For example, if work completed, appropriate language, and follow

instructions were marked, the comment only included behavior-specific praise for following instructions and work completed, not appropriate language. Taking into account that sometimes multiple categories were marked per praise note, the sample of praise notes also showed which behaviors were being praised more frequently. Following instructions was praised 48% of the time, work completion 51%, respect for others 26%, using appropriate language was praised 12%, and other 35%.

As part of the professional development, participants were given a checklist to evaluate schoolwide implementation in content teams. This was provided as a guide in using the problem-solving process in making data-based decisions regarding praise note implementation. This will be discussed further in the next section.

Data-Based Decision Making

Participants were given a checklist to guide discussion of data during weekly team meetings. The checklist was designed to help participants make data-based decisions using the problem-solving process in implementing praise notes schoolwide. Participants were given professional development on problem-solving and data analysis during the first PD session. They met with their content teams for weekly team meetings.

One member from each content team was on a smaller team, called the school team, which included the building facilitator. The school team met twice a month during which the school team members reported discussions held regarding praise note implementation and use of the problem-solving process. The school team discussed current data on praise notes and ODRs. Specifically, they discussed that students who had not been previously praised (those with two or more ODRs) also seemed to have increased positive behavior in the classroom. The school team reported that students likely to receive ODRs were being praised. They also indicated that there

was a perceived need to provide more consistent praise to students who exhibit positive behaviors and do not have ODRs. This information was consistent with the weekly team meeting reports. The school team also reported that praise notes seemed to be given mainly in the classroom.

Using the checklist, the school team was trained by using the data for praise note decision-making. For example: the ODR frequency did not seem to be decreasing overall. It was discussed that students receiving two or more ODRs were being praised and this seemed to lower recurrent ODR frequencies, however because they were not praising all students equally, new students were also receiving ODRs so that the overall ODR frequency did not decrease. This led to the conclusion that all students needed to be praised consistently.

Social Validity

A survey was given at the end of the study to participants to assess their perceptions of the PD (see Table 3). They were specifically invited to evaluate the problem-solving process as part of their teaching practice as well as the use of praise notes. Each participant was given the opportunity to respond to eight questions based on a Likert Scale from 1 to 5, with 1 being strongly disagree, 3 being neutral, and 5 being strongly agree. Of the 24 participants, about 63% of participants responded to the survey.

When asked about the usefulness of the problem-solving process, 36% of participants agreed that they would continue using it during weekly team meetings and agreed that they used the problem-solving process weekly during team meetings. Participants were also asked to rate the usefulness of professional development in regards to their teaching practice, 36% agreed, whereas 64% were neutral, and no one disagreed. Participants were also surveyed regarding the praise note intervention. First, they were asked if they thought praise notes were responsible for

changing student behavior, 57% agreed, 36% were neutral, and 7% disagreed. Also, 36% of participants considered praise notes a feasible intervention that they would continue to use.

Participants were also asked on average how many times they gave praise notes. Twenty-one percent reported writing 3 to 4 praise notes daily, 43% wrote 1 to 2 times daily, and 36% wrote 0 to 1 times daily.

Participants were also given a place to enter comments about using praise notes. Most participants reported that overall they liked the program and students enjoyed being rewarded. A few participants also reported that they did not like their praise rates and praise notes being tracked, even though they know the usefulness of praise notes.

Table 3

Social Validity Results

Survey Questions by Percentage	Strongly Agree				Strongly Disagree
	5%	4%	3%	2%	1%
The professional development given on praise notes and the use of the problem-solving process helped inform my teaching practice in my classroom.	14%	21%	64%	0%	0%
The PLC team uses the problem-solving process in implementing the praise note program.	7%	29%	43%	14%	7%
The student(s) I was most concerned about has changed his/her behavior as a result of my giving praise notes.	0%	29%	43%	29%	0%
Praise notes were effective at increasing desired classroom behavior.	0%	57%	36%	7%	0%
The number of praise notes given schoolwide is an important factor in changing student behavior.	0%	43%	43%	7%	0%
Reviewing the rate of praise notes and office referrals are important sources of data to consider when evaluating the effectiveness of the praise note program.	7%	43%	43%	7%	0%
The use of the problem-solving process is something my PLC team will continue to use (the PLC Checklist)	0%	36%	43%	14%	7%
The praise note program is a feasible intervention that I will continue to implement in my classroom.	0%	36%	57%	7%	0%

Summary of Findings

The results regarding the correlation of praise note frequency and ODR frequency were non-significant; however following the intervention, praise note frequency increased compared to baseline praise note frequency. The majority of praise notes contained behavior-specific praise and overall the praise note quality rating stayed at 3.5 or higher. The praise note program was implemented with a high level of fidelity; however, ODR rates did not seem to be affected overall by the praise notes, which suggest that there may be other factors inhibiting ODR decrease.

More than half the team used the weekly team meeting checklist to guide their discussion of behavior data and the praise note program. Also, the majority of teachers reported to be in favor of using praise notes in the future. Overall the problem-solving-process and the praise note program were seen as feasible and participants reported they are likely to continue implementation in the future.

Discussion

This study was designed to measure the effectiveness of high school teachers' professional development on using the problem-solving process to implement schoolwide interventions such as praise notes. This study examined (a) the frequency of ODRs and praise notes before and after the professional development, (b) teachers perceptions of the problem-solving process and praise notes, and (c) the impact of professional development on schoolwide student behavior. This study expands the findings of Wilmott (2012), as well as research in MTSS high schools using schoolwide interventions such as praise notes. It also explored the feasibility and characteristics of implementing interventions effectively in high school through professional development (Flannery & Sugai, 2009, Guskey & Yoon, 2009).

Current Findings

Baseline data indicated that teachers did not deliver behavior-specific praise via praise notes before receiving the professional development. A form of praise note was used; however, it did not follow the guidelines for praise notes as supported by current research (Irvin et al., 2004; Lewis & Sugai, 1999; Nelson et al., 2009). Therefore the baseline for praise notes was '0' as it did not meet EBP requirements. The participants agreed that an intervention was needed to address maladaptive behavior schoolwide. The greatest concern was students' behavior in classrooms. They particularly wanted to know how to positively reinforce correct student behavior such as work completion and following instructions. This concern is consistent with the concern of educators nationwide as maladaptive behaviors are costly and divert time and resources from academic achievement (Rosenberg & Jackman, 2003; Scott & Barrett, 2004). Many of the behaviors identified were disruptive, in-class behaviors such as disrespect, side talking, and lack of participation.

Participants agreed that a schoolwide intervention was needed and that positive reinforcement was something needed at the schoolwide level at their school. Provided with different options, the participants agreed to use praise notes as the intervention to increase positive student behavior. They also agreed that their current method of praise was minimally effective and that they needed to consider using evidence-based practices such as praise notes (Anderson et al., 2004; Bradshaw et al., 2008).

After the majority of participants agreed to use praise notes as an intervention to increase positive student behaviors, behavior-specific praise notes frequency increased significantly. The increase in praise note frequency is consistent with current findings on the effects of professional development in increasing teacher behavior-specific praise (Nelson et al., 2009; Thompson,

2012; Wheatley et al., 2009). Praise note frequency decreased significantly 5 to 6 weeks after the entire participant PD and increased significantly after the second professional development with the school team towards the end of the school year. This is also consistent with findings regarding professional development. It needs to be consistent and ongoing to maintain fidelity when implementing EBPs schoolwide (Guskey & Yoon, 2009; Luiselli et al., 2005).

Using the problem-solving process during professional development and team meetings increased participants' willingness to maintain fidelity when implementing praise notes. This was indicated through participants' perceptions, praise note frequency and quality, and overall feedback from participants. For example, participants' reported that students liked receiving praise notes and wanted to receive more. Another indicator that implementing praise notes schoolwide is a feasible intervention was the high quality of praise notes given throughout the study. This was measured by the praise note quality rating scale.

Furthermore, to support feasibility, the majority of data indicated that the behavior being praised (as marked on the praise note) matched the comment in meeting effective praise note criterion. The feasibility of implementing an EBP, such as praise notes, has been found largely effective when implemented through an MTSS (Nelson et al., 2009). Findings in this study suggest that implementing praise notes schoolwide is feasible. Results suggest that the PD was successful in teaching participants how to implement praise notes with fidelity. This was largely due to the use of the problem-solving process in selecting a schoolwide EBP to implement. The participants used the problem-solving process throughout the study to maintain praise note fidelity and make modifications to praise note delivery. This confirms the need for high schools to follow a data-based driven model like the problem-solving process when implementing

schoolwide interventions as contextual factors vary across high school settings (Flannery & Sugai, 2009).

Professional development provided was minimal and only included two sessions that included one entire participant PD session and a follow up PD session with school team members. Social validity measures indicate that overall teachers found the PD helpful to their teaching practice. It also indicates that most participants would like to continue using the problem-solving process to make decisions regarding schoolwide interventions such as praise notes.

Limitations and Future Research

The purpose of this study was to examine the effectiveness of providing professional development on the problem-solving process and on the impact of student maladaptive behavior. Schoolwide behavior was measured by ODRs, which is thoroughly supported in research to be an indication of the frequency of maladaptive behaviors (Chalk & Bizo, 2004; Irvin et al., 2006; Irvin et al., 2004; Sugai et al., 2000).

A limitation of this study is that it occurred during the school's baseline year for ODRs being recorded. Also, only four weeks of ODR data were collected during the baseline year. Furthermore, all data were collected during the three months before the school year ended. Office disciplinary referrals commonly increase at the end of the school year as more one-time offenders received ODRs (McIntosh et al., 2010). Also, when a new data collection system is mandated, ODR counts are more carefully recorded than previously (Irvin et al., 2006). This can artificially inflate the ODR frequency as it was not recorded the same throughout the baseline when compared to after the delivery of the PD.

Another factor that may have impacted the school's ODR count is that schoolwide behavior expectations resulted in inconsistencies in expectations about which behaviors warranted a referral (Irvin et al., 2006; Newton et al., 2009). These inconsistencies in ODR data collection may have led to the non-significant correlation found between ODR baseline to post-PD ODR data. This is a common problem in accurately recording ODRs as noted in current research (Irvin et al., 2006; Pas, Bradshaw, & Mitchell, 2011).

The implications of using praise notes in high school are promising when implemented through the problem-solving process. Even though results between ODRs and praise note frequency was not significant in this study, future studies could compare a full year of ODR tracking where the school has clear schoolwide behavior expectations and clear procedures for giving and reporting ODRs (Irvin et al., 2004). Also, the school should have a prior year of experience in tracking ODRs with the same tracking method from baseline to post-treatment (Clonan, McDougal, Clark, & Davidson, 2007). Future studies should also consider delivering professional development earlier in the school year to avoid year-end teacher burn out. It is recommended that positive reinforcement for student behavior should start from the beginning of the school year (Weiner, 2003; Wolk, 2003). Implementing schoolwide interventions early on during the school year sets the school culture for the entire year. Future studies might also track positive behaviors through observation, rather than relying solely on ODR as an outcome measure. Also, single-subjects designs tracking ODRs on individual students might be helpful to support teacher claims that praise did reduce ODRs for specific students. Specifically, a single subject design using a multiple baseline design across groups of content areas could show replication to strength findings.

The social validity questionnaire indicated that most of participants agreed with the effectiveness of the professional development. Specifically, the majority of participants' responses suggested that the PD was effective and feasible in respect to using the problem-solving model and implementing praise notes schoolwide. A limitation of the social validity questionnaire is that most of the questions prompted a Likert scale response that was by way of self-report data. Future studies should carefully consider how to develop the questionnaires so that they include more short answer and open-ended questions in order to thoroughly assess teachers' perceptions.

Implications for Practice

The problem-solving process is integral to communicating clear and concise definitions when recording data such as ODRs. It is also helpful when making data driven decisions schoolwide. Once clear, concise, and measureable definitions are established through use of the problem-solving process, educators will be more likely to implement interventions with fidelity and make changes where necessary to increase wanted student behavior and decrease teacher frustration and burnout. This study supports the research suggesting that praise notes should be explored further as a schoolwide intervention to increase positive student behavior in secondary settings (Duchaine et al., 2011). Also, other behavior indicators such as grades, attendance, and test scores could be measured to assess the effects of the problem-solving model in implementing proactive interventions on student maladaptive behavior.

Additionally, as this study suggests, schoolwide interventions are feasible to implement in high school settings when implemented through a schoolwide behavior support system or MTSS. Secondary settings should highly consider using schoolwide interventions such as praise notes along with becoming a school that uses MTSS in implementing schoolwide interventions.

In facilitating rigor of MTSS in secondary schools and when using schoolwide interventions, ongoing professional development is needed to maintain the long-term effectiveness of such programs. Furthermore, professional development on using the problem-solving process is integral to discussing factors that may require different solutions over time to the same problems. This will support different growth and demographic factors.

Lastly, when using the problem-solving process to discuss the effectiveness of interventions, educators should consider tracking those with two or more ODRs. These data could be compared to the frequency of praise notes and the specific praise given to the ODR offense. When a student is receiving two or more ODRs for a particular offense, educators should praise the proper behavior. For example, if a student is referred for multiple offenses of classroom disruptiveness, the question could be asked if the student is being praised enough for good classroom behavior. Also, educators could discuss other options that would positively reinforce the expected behavior.

Conclusion

This study shows that previously used interventions such as praise notes are feasible when implemented using the problem-solving process in high schools. Using the problem-solving process helps facilitate fidelity and effectiveness in increasing high school teachers' praise rate. Implementing EBPs in high schools requires a model like the problem-solving process in order to facilitate the varying demographics amongst high schools (Flannery & Sugai, 2009). It also supports current research that a well-defined and functioning ODR reporting system needs to be in place in order to truly measure the effects of EBPs such as praise notes (Irvin et al., 2004). Furthermore, ongoing professional development is needed to maintain fidelity of praise note implementation in (a) maintaining a high frequency of praise notes, (b)

working with teachers that are not consistent in giving them, and (c) addressing concerns that arise in weekly team and school team meetings. Using a tiered model of professional development (Thompson, 2012), in conjunction with the problem-solving process, could support schoolwide implementation of EBPs in high school settings.

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APPENDIX A: Review of Literature

One of the most significant obstacles to learning in public schools is students' problem behavior (Rosenberg & Jackman, 2003). Disruptive and maladaptive behavior in the classroom and schoolwide is an ever-increasing concern for educators across the nation (Irvin et al., 2006; Irvin, Tobin, Sprague, Sugai, & Vincent, 2004; Mendler, Curwin, & Mendler, 2008; Oswald, Safran, & Johanson, 2005). Maladaptive behavior can be broadly defined as "behavior[s] that [are] socially a problem, a source of concern, or as undesirable by the norms of conventional society and the institutions of adult authority, and its occurrence usually elicits some kind of social control response" (Jessor & Jessor, 1977, p. 33, cited in Najaka et al., 2002).

Recognizing that behavior problems are a predominant obstacle to learning and that measures should be taken to modify behavior, the majority of educators attempt to intervene using what is familiar--reactive and punitive strategies (Matjasko, 2011). These interventions require an alarming amount of time and money (Scott & Barrett, 2004).

Challenging Behaviors of Secondary Students

Every day, teachers face a myriad of problem behaviors, both major and minor. As a result, many teachers get burned out and leave the teaching career (Weiner, 2003; Wolk, 2003). Even though violence, anti-social, and passive behavior are of concern to educators, teachers across the nation report more concern for disruptive behavior in classroom settings (Obenchain & Taylor, 2005). Disruptive behavior puts an intolerable amount of stress on teachers. There are behavior concerns at every grade level in public schools; however, the rate of maladaptive behavior in secondary settings outweighs the rate in elementary schools, as measured by office disciplinary referrals (ODRs) (Forbes & Dahl, 2010). This may be an outgrowth of various

factors, including adolescent student dispositions and teacher response. The following paragraphs will describe the most salient factors that impact adolescent's behavior.

One factor is that there is a transition period from adolescence to adulthood during which many changes take place. Development in adolescence and social pressures significantly contribute to the majority of unwanted behavior in secondary schools (Forbes & Dahl, 2010). The most predominant impact on secondary students is that of emotional and hormonal changes (Balk, 1995; Josselson, 1994). Included are physical changes that are embarrassing and cumbersome at times: boys' bodies become more disproportionate, girls' clothes do not fit correctly with the latest trend, and both male and female adolescents undergo hormonal changes that produce new and unchecked emotions (Balk, 1995).

Another factor is socialization in the school setting (Josselson, 1994). The physical and emotional transformation from adolescents to adulthood is in full swing during middle to high school. This further compounds the issue of finding a suitable social network in order to feel valued. With all of these changes and transitions in the development period of adolescents, maladaptive behaviors are more susceptible to surface or be magnified in the secondary school settings (Forbes & Dahl, 2010).

Typical behaviors. Typical maladaptive behaviors in secondary schools include oppositional defiance, talking out, and disruptive classroom behavior (e.g., talk-outs, side talking, and non-compliance) (Spaulding et al., 2010). Along with these externalizing behaviors, there are passive behaviors that can be just as detrimental to a student's education (Murberg, 2010). A study by Murberg (2010) suggests that low self-esteem is significantly correlated with low student participation and higher passive behavior. The outcomes from this study indicate that students with passive behavior who receive social support are inclined to

demonstrate a positive correlation to more academic participation and higher self-esteem. It is suggested that positive behavior supports, such as social skills training, will help students with both externalizing and passive behaviors become more actively involved during classroom activities and produce better academic achievement and social outcomes (Najaka, 2002).

Impact of maladaptive behaviors. Maladaptive behaviors, such as disruptive classroom behaviors and oppositional defiance, have been linked to anti-social behavior in school and maladjustment in non-school settings (Irvin et al., 2004). A study conducted by Anderson, Hamilton, and Hattie (2004) demonstrated the impact of the social environment on student motivation to participate. This study looked at the motivation of 12th grade students in the classroom and how it relates to the classroom environment (social environment). The Classroom Environment Scale (CES) was used to evaluate the type of classroom environment. The researchers found that the impact of the positive environment significantly impacted classroom on task behavior, which was defined as student participation, task completion, and student engagement (Anderson et al.). A positive environment influenced a decrease in unwanted student behavior, which in turn reduced the amount of time teachers spent disciplining students for maladaptive behavior.

Another study conducted by Scott and Barrett (2004) completed a time/cost analysis of maladaptive behavior in 1500 K-12 schools. Their data indicated that disruptive behavior in the classroom uses up an average of 20 minutes of instructional time per class. This translates into almost \$3000 to \$4000 per year of lost teacher time that could have otherwise been dedicated to instructional time. They also reported that ODRs associated with minor maladaptive behaviors take administrators an average of 10 minutes per incident to resolve. Behaviors of major significance that result in suspension require 45 minutes per office referral. The average cost

spent on office referrals is a disturbing \$6000 to \$7000 per year.

This is time and money could otherwise be spent on professional development and proactive solutions such response to intervention (RtI) and positive behavior support (PBIS) or the combined effort of RtI and PBIS called multi-tiered system of supports (MTSS).

Strategies and Procedures

As was mentioned previously, many schools and teachers use punitive disciplinary practices as a means to discourage future problem behaviors (Matjasko, 2011). Research indicates that punitive practices create animosity between the student and educators and are more likely to increase problem behaviors (Matjasko, 2011; Way, 2011). This may be due to the lack of skills school personnel have to instill appropriate behavioral expectations in students. Rather, educators employ disciplinary procedures that inform students what behaviors not to use versus what behaviors to use.

Reactive strategies. A study of students who were repeat offenders showed that maladaptive behaviors were correlated with to reactive disciplinary procedures such as detention and suspension (Matjasko, 2011). In fact, due to the instability in the students' lives, focusing on their maladaptive behavior through reactive discipline made things worse for them at school. This study also reported that punitive or reactive discipline procedures, such as in-school suspension or out of school suspension, are not effective disciplinary strategies because it does not change the behavior(s). They concluded that proactive strategies, such as social skills training and positive reinforcement provide more successful support and outcomes for students with maladaptive behaviors.

Positive strategies and procedures. Based on the current research, there is a clear need for more proactive approaches to influencing the development of appropriate behavior in

children and youth as researched by Bradshaw, Reinke, Brown, Bevans, & Leaf (2008). The participants of this study were students who were identified for exhibiting disruptive behavior. These students completed questionnaires where they were asked questions regarding learning in a disruptive, classroom environment. Findings from the questionnaires showed that students consider it harder to learn in a disruptive environment and that students prefer a more proactive and positive approach to classroom management. Additionally, teachers reported spending more time managing disruptive behaviors than expected. With that said, teachers across the nation report that when a schoolwide positive behavior support system is in place, disruptive behaviors decrease substantially (Bradshaw et al.; Reinke, Lewis-Palmer, Merrell, 2008; Scott & Barrett, 2004). The proceeding section will share insights about the background and effectiveness of a schoolwide positive behavior support system (SWPBS).

Schoolwide positive behavior support. The most noted and research driven proactive interventions are implemented through a SWPBS (Irvin et al, 2006). Schoolwide positive behavior support is “the application of positive [behavioral] interventions and systems to achieve socially important behaviour change” (Sugai, Sprague, Horner, & Walker, 2000, p. 133). There are 5 systems in the SWPBS model including schoolwide, non-classroom, classroom, individual, and family.

Schoolwide positive behavior support is a proactive approach in managing and developing behaviors at the schoolwide level that mirrors the response to intervention (RtI), a multi-tiered support model (Bradshaw et al., 2008; Sugai & Horner, 2009). Recent models of SWPBS now include academic and behavioral supports in one model now referred to as multi-tiered system of supports (MTSS) (Duffy, 2007). For the purpose of this paper, we will refer to SWPBS and MTSS interchangeably regarding implementation of behavior strategies in a multi-

tiered system of supports model (Kansas Multi-Tiered System of Supports (KMTSS), 2010). The use of a MTSS incorporates the use of data-based decision making through the use of a problem-solving model (Florida Problem-Solving/Response to Intervention, 2011; KMTSS, 2010). It has been documented that using a proactive approach, such as MTSS, will reduce discipline issues unwanted behavior of most students on a schoolwide level (Luiselli, Putnam, Handler, & Feinberg, 2005; Sugai & Horner, 2002; Sugai & Horner, 2009). There are four components that are essential in order to have a successful MTSS in place: a) clear outcomes b) researched based programs, c) decisions driven by data, and d) a high percentage of fidelity (Sugai & Horner, 2002). There are three tiers in the MTSS model in managing student behavior starting with tier 1 which encompasses interventions that target the general student body; tier 2, which provide more behavior support in small groups for 10-15% of students; and tier 3 or tertiary, which provides intensive behavior support one-on-one with 5% of the students (Duffy, 2007; Florida Problem-Solving/Response to Intervention, 2011; KMTSS, 2010).

The evolution of MTSS. The MTSS model evolved from the need to implement evidence-based practices (EBPs) as result of the realignment of IDEA 2004, to the “No Child Left Behind Act of 2001” (NCLB), (Sugai & Horner, 2002; Sugai & Horner, 2009). The evolution of MTSS began in elementary schools and has now become more prominent in middle schools (Spaulding et al., 2010). It is ever increasing at the high school level as program definitions are still being fine-tuned to meet the list of diverse needs at the secondary level (Flannery & Sugai, 2009). The difference between MTSS in elementary and middle schools verses high school will be explored in more depth throughout the remaining portion of this literature review.

MTSS in elementary schools. There have been tremendous strides in implementing

MTSS for maladaptive behavior in elementary schools (Luiselli et al., 2005). Schools with a history of discipline problems, low faculty morale, and low academic achievement have shown an increase in both positive behavior and overall academic achievement (Luiselli et al., 2005; Sugai et al., 2000; Sugai & Horner, 2002). Interventions that have been used successfully in elementary schools to improve behavior and academics within a MTSS include verbal behavior-specific praise. Another type of EBP used within a MTSS system is behavior-specific written praise (praise notes). The successful use and effectiveness of written praise in elementary schools is well researched and has paved the way for further utilization in secondary settings (Nelson, Young, Young & Cox, 2009; Wheatley et al., 2009).

MTSS in middle schools. Research has also recently confirmed the effectiveness of MTSS on middle school students' behavior. (Eber, Lewis-Palmer, Pacchiano, & University of South Florida Tampa Research and Training Center for Children's Mental Health, 2002; Lassen, Steele, & Sailor, 2006). Focusing on positive behavior at a schoolwide level in middle schools has helped teachers establish and implement proactive interventions such as verbal BSP and praise notes. These strategies have been documented to decrease disruptive behaviors such as talking out of turn, wandering the room, and other off-task behavior (Nelson et al., 2009; Wheatley et al., 2009). When teachers and administrators do not have to deal with student disruptive behaviors (e.g., talking, swearing, classroom disruptions) they are able to devote more quality time to higher at-risk populations (Eber et al., 2002). This suggests the need for continual efforts to implement MTSS strategies in secondary schools. Additionally, implications in middle school research indicate the need for continuous and sustained professional development to maintain interventions with fidelity in all settings (Eber et al., 2002; Sugai & Horner, 2009).

MTSS in high schools. Due to the varying contextual factors across high schools such as school culture, instructional organization, roles of faculty and staff, graduation requirements, and so forth (National High School Center (NHSC), National Center On Response to Intervention, and Center on Instruction, 2010), the implementation of MTSS at the high school level will look different as compared to elementary and middle schools (Flannery & Sugai, 2009; NHSC et al., 2010). Currently there is limited information that substantiates the mechanisms and interventions that are necessary to implement MTSS effectively in high schools (Duffy, 2007; Flannery & Sugai, 2009). In 2004 a forum was held by the Technical Assistance Center (TA Center) where 29 high schools from 10 states met to discuss the success and challenges regarding the implementation of behavior interventions in a MTSS (Bohanon-Edmonson, Flannery, Eber, & Sugai, 2004). This forum created the High School PBIS national committee (HT PBIS). The success of the 2004 forum lead to another forum conducted in 2009 (Flannery & Sugai, 2009).

The 2009 forum was designed to collect data from 13 pre-selected high schools across nine states to find commonalities among successful implementation of SWPBS. These schools were selected based on being nominated for implementing a successful SWPBS system. Specifically, the nominated schools demonstrated a decrease in ODRs and increase of favorable outcomes for students such as higher academics and graduation rates. Representatives from each of the high schools were invited to attend 2009 HS PBIS forum. They formed groups in a collaboration problem-solving type model to discuss what works and does not work in high schools through data analysis. The 2009 forums recommendations have been compiled as chapters to help guide high school educators in implementing a successful SWPBS system (Flannery & Sugai, 2009).

The general conclusion of this forum is that “SWPBS is doable [in high schools]... however, implementation features may need to be adjusted to accommodate the high school context (e.g., organizational differences, variations in purpose, development considerations, competing initiatives and priorities)” (Flannery & Sugai, 2009, p. 18). One point of consideration was that the guideline definitions for SWPBS for elementary and middle schools are not very effective at the high school level because high school is more focused on transitioning to post high school outcomes, dropouts, and earning credits toward a diploma. The forum recommended that a successful SWPBS system should incorporate the following: (a) strong faculty and staff support, (b) data-based decision making, and (c) a selective continuum of effective evidence-based interventions based on contextual and demographic factors. Additionally, they suggested a focus on post high school outcomes (Flannery & Sugai, 2009). Finally, they noted more research regarding EBPs, such as praise notes, at the high school level for behavior and academics (NHSC et al., 2010).

Measures/Data Collection of SWPBS

The most substantiated sources of data with the SWPBS model are office disciplinary referrals (ODRs) (Chalk & Bizo, 2004; Irvin et al., 2006; Irvin et al., 2004; Sugai et al., 2000). Research has demonstrated that ODRs are valid for making decisions concerning the use and implementation of interventions such as praise notes across several settings including schoolwide, classroom, and individual. The following paragraphs will provide information regarding ODRs as a source of behavioral data within the SWPBS model.

Office disciplinary referrals. ODRs are the most widely used source for measuring fidelity of PBIS and are the simplest data to record and to analyze (Clonan, McDougal, Clark, & Davison, 2007; Nelson et al., 2009). Irvin et al (2004) found that the following things need to be

in place in order for ODRs to show construct validity: both appropriate and inappropriate behaviors must be operationally defined at the schoolwide level, expectations for these behaviors are clear to students and educators, and disciplinary procedures are commonly and consistently implemented schoolwide. The data provided by an ODR recording system help inform administrators about the needs of his school, such as what professional development is needed and the effectiveness of interventions.

A study by Spaulding et al. (2010) used the School-Wide Information System (SWIS), to gather ODR data from 1,500 schools ranging from Pre-k to high school. They compared the data demographics, number of ODRs and administrator reports as to why ODRs are given. They found that middle school students are typically referred for student-adult interactions that include arguing, classroom disruption, and fighting. High school students were typically referred due to attendance issues that included tardiness and skipping class. These ODRs were followed by administrative decisions that removed most students from instructional opportunities through the use of punitive methods such as school suspensions. The relationship between ODRs and administrative decisions provide valuable data when making decisions in order to choose more proactive disciplinary practices that allow students to be involved in instructional opportunities.

In a research endeavor, Irvin et al. (2004) used Messick's (1988) framework to explore the validity of using ODRs as an indicator of externalizing behavior and found it to be effective. The Messick method asks several questions pertaining to the validity of certain measures by asking four types of questions that include interpretations, relevance, values, and overall consequences. It encompasses "the appropriateness, meaningfulness, and usefulness" (p. 35) of using ODRs as a behavioral indicator on a schoolwide level (Irvin et al., 2004). Irvin et al.'s findings validate other researchers who have explored ODRs as a source for measuring the

effectiveness of SWPBS (Sugai & Horner, 2009). These researchers report that ODRs are considered the more valid and more preferred indicators in schoolwide behavior support systems. This is also true in across linguistically diverse populations in elementary and secondary schools (Irvin et al., 2006; Vincent, Swain-Bradway, Tobin, & May, 2011).

Pas, Bradshaw, & Mitchell (2011) found that using ODRs also has high socially validity among teachers and administrators. The following are the top four benefits of using ODR data to make instructional decisions: (a) teacher perceptions of student behavior revealed they considered the behavior to get better which also correlated with lower ODRs, (b) ODRs were highly correlated with higher rates of disorder schoolwide, and (c) increased ODRs are also correlated with high incidences of anti-social behavior and maladjustment in the community. ODRs also show accountability for the overall behavior management and social climate of the school (Irvin et al., 2006; Pas et al.). To date, the majority of studies that use ODRs as a measure have been conducted in elementary and middle schools (Nelson et al., 2009; Wheatley et al., 2009). Research regarding data-based decisions conducted at the high school level is limited and needs to be explored further (Spaulding et al., 2010).

Recording positives. Recognizing that ODRs are the principle source for behavioral data within a SWPBS model, it is important to acknowledge that there is not much being done to track positive student behavior based on current literature (Pfleger, Wiley, & University of Colorado at Boulder National Education Policy Center, 2012). It seems logical that educators should also track positive strategies and interventions (Brophy, 1981; Nelson et al., 2009). One such possible source is the rate of behavior-specific praise (BSP)--either verbal or written BSP. Behavior-specific praise interventions are more common among elementary and middle schools, including written praise (Irvin et al., 2004; Lewis & Sugai, 1999; Nelson et al., 2009); whereas,

there is limited research on praise in high schools, particularly in respect to written praise (Flannery & Sugai, 2009). Unfortunately over the last several decades, teachers have shown a steady trend in ignoring more wanted behaviors and giving more attention to unwanted behaviors (Swinson & Knight, 2007).

Behavior-specific praise. As is noted above, research indicates that positive interventions reduce the number of ODRs and suspensions (Luiselli et al., 2005; Nelson et al., 2009). One such positive intervention is behavior-specific praise. Praise is defined “as a comment to an individual to commend the worth of or to express approval or admiration” (Brophy, 1981, p. 5). Praise has been found to be an effective and efficient proactive approach to influencing classroom behavior, particularly when the praise is contingent and specific. Using praise to increase desired behavior has been documented since 1916 (Gilchrist, 1916). Gilchrist (1916) found that test performance increased significantly when paired with positive praise (Alber & Heward 2000; Brophy, 1981). Similarly, researchers have shown that behavior-specific praise increases on task behavior that in turn increases students’ academic achievement (Chalk & Bizo, 2004).

Swinson & Knight (2007) found that verbal praise is linked to higher rates of compliant behavior. In their study, the effect of verbal teacher feedback on students with difficult behavior, specifically off task behavior, was investigated. The outcomes indicated that the higher the quality of instruction the less the designated students showed unwanted behaviors. A strong, positive correlation between positive verbal praise and student on-task rates was also noted as well as the positive effect of individual praise versus praise directed toward the entire class. (Swinson & Knight). Other researchers reported that behavior-specific teacher praise was a contributing factor to increasing on-task behavior by 90% (Swinson & Harrop, 2005). Chalk and

Bizo (2004) demonstrated an increase of on-task behavior when students were given more descriptive praise.

Verbal praise. There are strong implications that using behavior-specific praise in high school will also increase positive behaviors as shown in a study by Duchaine, Jolivete, & Fredrick (2011). They explored the effects of coaching on behavior-specific praise rates (BSPR) of teachers and the rates on-task student behavior. This study was conducted in a 9th grade inclusion math class that contained general education and special education students. From baseline to intervention, the BSPR for teachers when from 0 to 2 BSPR's to an average 9.7 BSPR's per 15 minute interval. There was not a significant increase in student on-task behavior, which may be due to the fact that BSPR's where given to the whole class rather than individually. However, the social validity findings indicate that teachers reported less disruptive behavior during lessons and a more positive classroom atmosphere. The findings from this study offer a few important implications. First, coaching, as a form of professional development, may be influential at increasing teachers' BSPRs. Secondly, teacher perception suggests that global praise can positively influence classroom climate and student behavior; however, the findings from this study suggest that it would be wise to explore the effect of directing BSPRs to individual students verses the entire class. Finally, positive interventions, such as verbal and/or written behavior-specific praise, may have a positive impact on high school students' behavior.

Written praise. Providing verbal praise is when praise is delivered orally; whereas, written praise entails using behavior-specific praise in the form of what is becoming known as "praise notes" (Nelson et al., 2009). A recent study conducted in a middle school by Nelson et al. (2009) measured the effects of praise on ODRs through the use of praise notes. In this school a SWPBS model had been implemented for two years when the use of the praise notes were

implemented, in conjunction with a schoolwide social skills model. Students were explicitly taught school rules and social skills. In a two-day training, teachers were taught how to write behavior-specific praise notes which they were informed should be delivered to students who were found using the social skills and following the school rules.

During the two years, teachers wrote 14,527 praise notes and showed a significant negative correlation to ODRs ($r = -.551, p < .05$). Students who received ODRs were slightly less likely to receive a praise note; however, when compared to the general population of students, those who did not receive praise notes showed that they were still praised at similar rates ($z = .02, p > .05$). The trend for higher rates of praise for those who received ODRs was still significant ($r = .94, p < .001$). This study, as well as the Wheatley et al. (2009) study, suggests that the use of praise notes is an effective way of decreasing student's problem behavior in elementary and middle schools. Further research should explore the effects of written praise on adolescent behavior, especially at the high school level (Lewis & Sugai, 1999; Nelson et al., 2009; Sugai & Horner, 2009). This study suggests that focused and effective methods of professional development of proactive behavior strategies may positively influence student behavior. However, there are only a small percentage of schools that are committed to implementing MTSS/SWPBS with complete fidelity. Concerns have arisen about the most feasible and effective way to implement evidence-based interventions such as written praise (Osher, Bear, Sprague, & Doyle, 2010). This is where professional development and the use of the problem-solving process would be invaluable in implementing proactive models and interventions such as MTSS and praise notes.

Professional Development

Professional development and pedagogical training is the foundation of training teachers

how to be successful in implementing EBPs (Doppelt et al., 2009). Professional development is needed to ensure that teachers are implementing EBP's (EBP's) that meet student needs.

Teachers report being more confident in implementing EBPs as they participate in ongoing professional development as this provides them with a support system (Chalk & Bizo, 2004; Jenkins & Yoshimura, 2010). The remainder of this literature review will focus on how to ensure that professional development can be effective at ensuring that teachers implement EBPs, including praise.

Effective strategies. Although effective professional development is pivotal to supporting teachers in meeting student needs; implementing effective professional development is difficult at best (Guskey & Yoon, 2009). Guskey and Yoon (2009) analyzed over 1,300 studies in order to find common factors associated with effective professional development on student achievement. Of the 1,343 studies, only 9 of the studies, all elementary schools, met the standards of evidence for effective professional development as set by the What Works Clearinghouse. Guskey and Yoon found that there is not enough evidence to conclude which is the best model of professional development. The main finding in this meta-analysis was that the most successful professional development focused on the "how" not the "what." Effective teaching training includes a carefully planned and well, thought-out professional development that is both applicable and meaningful. These researchers' findings suggest that while workshops are the most typically used form of professional development; they are not always the most effective practice for training teachers. Effective professional development included trainings that are not just one-time meetings, but those that provide ongoing support and follow-up training. Essentially what Guskey and Yoon are recommending is that professional development consists of regular meetings to discuss problems and solutions—using what is

known as the problem-solving process.

The outcomes from Guskey and Yoon's meta-analysis (2009) are further supported by Sugai and Horner's discussion on the integration of RtI and PBIS (2009). They explain that current professional development is largely ineffective as it focuses on disseminating current EBPs rather than how to effectively choose and sustain them. They also state "professional development must be localized, continuous, embedded, and team driven (p. 8)." In an effort to promote a localized, continuous, embedded, and team driven approach within schools, Sugai and Horner recommend that schools implement interventions that are based on a multi-tiered system and adopt the problem-solving model, implementing three basic steps. First, data on behavior is collected and analyzed to find the target behaviors and possible evidence-based solutions are agreed upon. Next, the objectives and measures are formed to create benchmarks for analyzing and monitoring progress. Lastly, a collaborative effort is organized to meet regularly and analyze the data in order to make adjustments to interventions and programs. This method is essential to the ongoing training of teachers' effective and sustainable use of EBPs, including those that are behavioral focused (Reinke et al., 2008; Sugai & Horner).

SWPBS and the group problem-solving process. The problem-solving process supported by ongoing professional development through collaboration is supported research done by Engstrom and Danielson (2006). They found key elements of how adults, specifically teachers, prefer to engage in learning and refining their pedagogical skills. The participants were 30 teachers employed by public schools K-12 in a mid-western community in the United States. This was a qualitative study that relied on feedback from teacher regarding professional development through focused writing prompts, interviews, and unit plans created by those teachers. Eleven of these teachers, which were the focus of the study, were veteran staff at their

school and deemed the top teachers by their respective principals. The study showed how teachers function at three different levels in acquiring and implementing professional development strategies and the need for a collaborative approach to professional development. Eight participants functioned on an orientation level, which means that their implementation of the introduced teaching practice was stable and implemented with complete fidelity. The other three did not show stable use of EBP's even after the training. Over half of the participants reported that professional development played a key role in their ability to implement the training. They also reported a "sense of ownership" in their learning because they were involved in decision-making processes of what and how they learned. Teachers also expressed needs that should be met in order to learn and implement new training with fidelity. First, they need time to work and collaborate with each other in the professional learning community. Second, there needs to be ongoing professional development in a structured way to support continual professional growth such as a problem-solving model. Lastly, they desire further in depth training at the collegiate level in a partnership with the district. This study showed the importance of ongoing collaborative professional development and group problem-solving and the need of administration involvement to facilitate a continual growth model. This is where a problem-solving process and SWBPS is needed and has been proven as an effective model of implementing schoolwide EBPs (Oswald et al., 2005).

Using ODR data as part of the problem-solving process was studied in nearly 10,000 public elementary schools in the United States (McIntosh, Frank, & Spaulding, 2010). The study was designed to examine the different uses of ODR data when examined during the problem-solving process. It looked at different categories of ODRs to the number of ODRs per student to see if it was possible to predict the trajectories of students ODRs later on in the year. Students

that had two or more moderate offenses early on in the year, were more easily predicted to have similar offenses throughout the year. The more ODRs a student had for the same offense, usually two or more, was the best predictor of future ODR offenses. They found that a student with a single ODR was harder to predict for repeat offenses. They recommend that teams look at other indicators such as attendance and grades in conjunction with ODRs when using data to make decisions about schoolwide and individual interventions.

Limited studies have been conducted on educator problem-solving in schools (Newton, Horner, Todd, Algozzine, & Alogzzine, 2012). A recent study by Newton et al. (2012), showed the effects of a five hour professional development session on teachers' use of the problem-solving process. The researchers trained four PBIS school teams on their version of the problem-solving process called the Team-Initiated Problem-solving (TIPS). This model was used to study how to effectively train school teams in use the problem-solving process with fidelity. Failure to use a problem-solving process with fidelity decreases the likelihood of the problem getting solved. This study used an instrument called Decision Observation, Recording, and Analysis (DORA) for measuring the fidelity of data-based decisions. Part of the TIPS training included the use of a fidelity checklist to be used at each meeting. Teams were encouraged to meet at least 1 to 2 times per month. They found that schools that received multiple follow-up visits were more successful in implementing the problem-solving process as per each schools DORA score. Those schools with follow-up training, district coaching, and maintenance professional development had the highest fidelity in implementing TIPS.

General findings. As stated earlier, since the inception of the No Child Left Behind Act (NCLB, 2001), there has been a call professional development in EBPs (Hezel Associates, 2007). Kalis, Vannest, and Parker (2007) conducted a study with a first year emotional behavior

disorder (EBD) high school teacher who demonstrated low rates of praise. During baseline, the direct instruction lessons were timed, controlled, and scripted to ensure consistency in instructional time across phases. The lessons provided fixed opportunities for student responses. Data collected during the first four days of baseline included the frequency of both general and behavior-specific praise. Additionally, data were collected on the fidelity of the direct instruction (DI) script. The teacher received daily feedback concerning deviations from the script of more than 1 in 10 words.

After training, the participant began self-monitoring her rates of praise during a direct instruction lesson for each of seven sessions. Prior to each session, the participant received a reminder of the goal for how many verbal BSPs to give while teaching. The teacher kept track of her own praise statements using a hand-held counter. Praise data were collected during 10 minute time periods; the mean score (praise frequency) during baseline was 1.7 compared to a mean score of 21 during intervention. One strength of this intervention, is that the participant was able to implement and interpret the results independently. Before the intervention, the teacher wanted to quit her job. Following the intervention, she felt more empowered and successful in her teaching practice (Kalis et al., 2007). This study demonstrates the importance of professional development when implementing EBPs. Future research could build upon this study by evaluating both verbal and written praise.

Oswald et al., (2005) conducted a study that implemented professional development as a part of an effort to explore the effects of SWPBS on increasing the safety in middle schools' non-classroom settings, specifically to address disruptive behavior. Teachers participated in professional development workshops on how to start a SWPBS system in their school. They were trained on how to set schoolwide expectations after which teachers and administrators

developed schoolwide universal rules. Schoolwide expectations were identified based on faculty consensus. A SWPBS team was also selected that included teachers from each grade level, administrators, school psychologist, and the district behavior specialist. This team (a) oversaw any changes that needed to be made in the current rules and interventions for non-classroom activities, (b) identified the most troublesome settings and times that needed to be targeted (e.g., the lunchroom at lunch or transitions between classes in a certain hallway), (c) collected data by observing the frequency of violations against the set rules, and (d) compared baseline and intervention data. Essentially, this group used the problem-solving process to improve outcomes in their school.

The results of this five-week study produced a large effect size. These outcomes support the effectiveness of using a group problem-solving process to make behavioral and instructional decisions. Additional research needs to expand this and other studies by providing professional development on the use of the problem-solving process in analyzing school data, including ODRs and positive data sources, such as praise.

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APPENDIX B: Consent Form

Consent to be a Research Subject

Introduction.....

This research study is being conducted by Brandon Jackson at Brigham Young University under the guidance of Michelle Marchant to determine the effectiveness of professional development and the problem-solving model in modifying student behavior. You were invited to participate because you are a faculty member of a high school participating in UMTSS recommended by the Utah Personal Development Center to conduct research.

Procedures

If you agree to participate in this research study, the following will occur:

You will be invited to participate in professional-development to help increase desired results of student academics and behavior. By participating in this study, you will attend a 30-45 minute professional development during a normal faculty meeting. The study will last 3 months and will collect data following the professional development to determine its effectiveness. Data that will be collected are the praise notes that you write to the students and the number of office disciplinary referrals (ODRs), and weekly content meeting notes. Following the study, a questionnaire will be sent to you electronically from the researcher that will ask you questions regarding the professional development and interventions currently used at your high school. This survey is voluntary and will be submitted anonymously. If you are a member of the UMTSS school team, there will be a separate training on how to take notes during your weekly scheduling content meetings. The total estimated time commitment for faculty members is about 1 hour (the meeting during a regularly scheduled faculty meeting, and 15 minutes to fill out a survey after the study.) If you are a member of the UMTSS school team it will be about 2 hours total time commitment which includes: faculty meeting professional development (45 minutes), 20 minutes during a regularly scheduled UMTSS school meeting, and 5 minutes weekly to fill out a content meeting checklist.

Risks/Discomforts

There are minimal risks for participation in this study. The risks will not be any greater than you would incur in a normal day. You may choose to decline or excuse yourself from the study at any point and time.

Benefits

There are no direct benefits to you as a result of participating in this study. However, it is hoped that there will be indirect benefits to your classroom and your teaching profession. It is hoped that through your participation, researchers may learn about the effects of professional development on student behavior.

Confidentiality

The research data will be kept on a secure server and data files will be password protected. There will be no identifying information from the survey. Praise notes collected with teacher and student names will be locked in an office filing cabinet at Brigham Young University. This data will be recorded into a spreadsheet and password protected. Only the researcher and a few assistants at Brigham Young University will have access to the data. At the conclusion of the study, all praise note data will be coded into spreadsheets and will have no identifiable information from the student or the teacher. Data will be analyzed and published in journals in the form of graphs, charts and statistics. Again, this data will not be associated with any

identifiable information.

Compensation

A gift card with a small amount will be given to you pending completion of the research study. You will still receive this gift card even if you decide to withdraw at any point from the study.

Participation

Participation in this research study is voluntary. You have the right to withdraw at any time or you may refuse to participate entirely without affecting your employment or standing at the school.

Questions about the Research

If you have questions regarding this study, you may contact the researcher and/or the faculty advisor.

Brandon Jackson (Researcher)

801-318-9117

brandonj1979@gmail.com

Michelle Marchant (Faculty advisor)

801- 422-1238

michelle_marchant@byu.edu

Questions about Your Rights as Research Participants

If you have questions regarding your rights as a research participant contact IRB Administrator at (801) 422-1461; A-285 ASB, Brigham Young University, Provo, UT 84602; irb@byu.edu.

Statement of Consent

I have read, understood, and received a copy of the above consent and desire of my own free will to participate in this study.

Name Printed _____ Signature _____ Date: _____

APPENDIX C: Weekly Problem-Solving Checklist

Team:

Names of Team Members Present:

Date:

Teachers: During each team meeting please discuss each of the following questions. Mark yes when the team discussed the questions and no if they did not. Write notes in the comment section about specific observations you make regarding your discussion and analysis. Please consider trends, concerns, themes, ideas about students, settings, behaviors, and so forth.

Did the Team...	Yes	No	Comments:
Define any student problems in behaviors/academics?			
Brainstorm solutions to the problem(s)?			
Discuss possible and current interventions to address the problem?			
Follow up on current interventions? Look at data?			
Discuss the names of the students who did/did not receive a Pride notes during the month?			
Discuss if the notes written meet the praise note criterion?			
Compare data from previous weeks if applicable?			
Look for any themes in the data that might indicate problems?			

APPENDIX D: Praise Note Rubric

1	2	3	4
The praise note was given to the student but did not include the students name, a specific behavior or place the behavior took place.	The praise note included the student's name however it did not give the specific behavior exhibited or place that it occurred.	The praise note included: the students name, a specific behavior, however the behavior was not one of the 5 school expectations.	The praise note included: the students name, a specific behavior and place in accordance with schoolwide expectations.

APPENDIX E: Entire Participant Professional Development

Please answer each question yes or no if the skill was observed during the training. Please add any additional comments if needed.

Did the researcher...	Yes	No	Comments:
1. Explain the steps in the problem-solving model?			
2. Model how to use the problem-solving model?			
3. Guide teachers through the problem-solving in their own current situation?			
4. Explain when to use the problem-solving model? (During PLC's, team meetings)			

APPENDIX F: Checklist for School Team PD

Observer: Please answer each question yes or no if the skill was observed during the training. Please add any additional comments if needed.

Specific skill:	Yes	No	Comments:
1. Did the researcher discuss the professional development weekly checklist? When to use it? Examples?			
2. Did the researcher provide examples and non-examples of the correct way in analyzing the data and using the problem-solving model?			

APPENDIX G: Social Validity Participant Questionnaire

TEACHERS: Thank you for your willingness to take part in this study. Your feedback is valued. An online version will be developed.

Circle the number that matches the strength of your agreement or disagreement with each statement below.	Likert scale from 1 Really Disagree to 5 Really Agree				
The professional development given on use the problem-solving process helped inform my teaching practice in my classroom?	1	2	3	4	5
The PLC team used the problem-solving process weekly?	1	2	3	4	5
Using the group problem-solving process helped us progress monitor and find solutions to problems regarding student behavior?	1	2	3	4	5
Using the group problem-solving process helped us progress monitor and find solutions to problems regarding student academics?	1	2	3	4	5
The student(s) I was most concerned about has changed his/her behavior as a result of my increase in behavior-specific praise notes directed toward him/her.	1	2	3	4	5
Delivering written praise is an effective intervention to increase desired classroom academic and social behavior.	1	2	3	4	5
Discussing the use Pride Notes is an important source of data to consider when monitoring or developing solutions to student problems?	1	2	3	4	5
Discussing the frequency of ODRs is an important source of data to consider when developing solutions?	1	2	3	4	5
The use of the problem-solving process is something my PLC team will continue to use?	1	2	3	4	5
The use of Pride Notes is a feasible intervention that I will continue to implement in my classroom.	1	2	3	4	5

On average I delivered written praise:	4-5 times daily	3-4 times daily	3-3 times daily	1-2 times daily	0-1 times daily
I have taught for:	20+ years	15-19 years	10-14 years	5-9 years	1-4 years
I have taught at this school for:	20 + years	15-19 years	10-14 years	5-9 years	1-4 years

Additional comments