Inclusion

Usability, Acceptability, Feasibility, and Effectiveness of the Systematic Supports Planning Process: A Pilot Evaluation

--Manuscript Draft--

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Keywords: intellectual and developmental disabilities, inclusion, supports planning,

support needs, collaboration

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Process: A Pilot Evaluation

Although educational placement data over the past decade reveal an increasing trend in the number of students receiving special education services who spend a majority of their school day in general education settings (United States [U.S.] Department of Education, 2013, 2023), this trend does not hold for students with intellectual and developmental disabilities (IDD). Students with IDD remain less likely to access inclusive placements and, as a group, have not experienced change in their educational placements over time despite ongoing calls to advance inclusive education (Agran et al., 2020; Morningstar et al., 2017) and the well-documented benefits of participation in general education settings for students with IDD (e.g., academic progress, improved communication, increased engagement, increased self-determination skills; Gee et al., 2020; Mansouri et al., 2022). According to the most recent federal data (U.S. Department of Education, 2023), a smaller percentage of K-12 students receiving special education services under the eligibility categories of intellectual disability (17.9%), autism (40.8%), and multiple disabilities (15.0%) are served in general education settings for most of the school day compared to the overall 66.1% of students with disabilities.

As the field has grappled with the numerous barriers to advancing inclusive education for students with IDD, researchers have examined effective strategies to not only promote greater access to but also meaningful participation within general education settings when there is access. These strategies have ranged from addressing systemic issues (Burnette et al., 2023; Sailor et al., 2018) to focusing on person-centered supports planning for individual students (Schwartz et al., 2000). Others have explored the effectiveness of specific practices applied within the context of the general education classroom (Saunders et al., 2020). Recent work also

has focused on supporting educators to effectively identify and arrange supports aligned to students' support needs in general education classrooms, consistent with a social-ecological conceptualization of disability (Schalock et al., 2010; World Health Organization, 2001).

Proponents of a social ecological conceptualization of disability recognize disability as resulting from mismatch between an individual's abilities and the demands of the environments in which they live, learn, work, and play that creates a need for supports (Thompson et al., 2009). Understanding an individual's support needs (as opposed to their deficits, which has been a focus in previous models of diagnosing IDD) may be useful in identifying and arranging supports to address the mismatch and enhance valued outcomes in inclusive contexts (Walker et al., 2014).

Various support needs assessments are available to assist teams in this process (Thompson & DeSpain, 2016) and have guided decision-making of teams focused on building individualized support plans (ISPs) and budget planning for adults with IDD who receive Medicaid-funded services to live in their communities (Thompson et al., 2009; Thompson et al., 2018). The Supports Intensity Scale–Children's Version (SIS-C; Thompson et al., 2016) is the only standardized support needs assessment applicable to school-aged children (Walker et al., 2024). The SIS-C is a norm-referenced scale that measures three dimensions of support needs (frequency, type, daily support time) across 61 items grouped into the following domains: home life, community and neighborhood, school participation, school learning, health and safety, social, and advocacy; exceptional behavioral and medical support needs also are assessed. SIS-C scores and profiles of support needs in each of these domains can be a first step in identifying areas of support needs (Walker et al., 2014).

Expanding upon supports planning efforts for adults with IDD guided by support needs assessment, Thompson et al. (2018) and Thompson et al. (2022) proposed a structured process

that uses support needs assessment for students with IDD in schools (the Systematic Supports

Planning Process [SSPP]). The SSPP guides educators to consider a student's support needs as

measured by the SIS-C along with other critical information (e.g., student preferences, general

education classroom curricular expectations) to plan supports for the general education

classroom. They hypothesized that, by first understanding a student's support needs, educators

are better equipped to plan supports that are effective and contextually appropriate for the

general education classroom and improve student engagement, goal attainment, access to the

general education curriculum, and participation in instructional activities alongside peers. The

SSPP concurrently addresses environmental barriers to inclusive education for students with

IDD, specifically, the lack of time for collaborative teaming and planning for supports.

Researchers have established that collaborative and purposeful planning time is a key

factor in increasing meaningful inclusive experiences for students with IDD (Matzen et al., 2010;

Thompson et al., 2020; Velasco, 2023). For example, Thompson and colleagues (2020)

conducted focus groups with 33 educators to explore supports planning approaches and barriers

to inclusive education for students with IDD. Participants identified barriers including the lack of

a systematic or formal process for planning supports and limited time, personnel, and resources.

When participants were shown a draft of the SSPP, they were optimistic about the potential

usefulness of the process, particularly if comprehensive information about the student and

general education setting were incorporated. In a more recent example, Velasco (2023)

interviewed general and special education teachers at an elementary school about their

experiences including students with IDD. They also identified dedicated meeting time as

important to ensuring students are adequately supported.

Building on this work, we conducted this study to examine the usability, acceptability,

feasibility, and effectiveness of the SSPP from the perspectives of educator teams. Our research questions were as follows: (a) How do educators perceive the usability, acceptability, and feasibility of the SSPP? and (b) Does the SSPP show potential efficacy in increasing access, engagement, learning, and support in general education classrooms for students with IDD? Our exploratory research hypothesis was that students with IDD would experience improvements in these outcomes at the end of 6 weeks of SSPP intervention relative to baseline.

Method

Participants and Settings

Participants included 15 educator teams (one general educator and one special educator) that each used the SSPP to plan and implement supports in a general education classroom for a student with IDD. Educators were eligible if they already supported (or were interested in supporting) a student with IDD in an elementary or middle school general education classroom, though previous collaboration between the general and special educators was not required. Prior to recruitment, we obtained Institutional Review Board approval at our respective institutions. We used a convenience sampling approach to recruit and select educator teams from diverse school districts across different geographic regions in the U.S. as follows: South ($n = 7$), West ($n = 6$), and Midwest ($n = 2$).

Student participant demographic information is available in Table 1. Educators reported a majority of students were male ($n = 12$) and, on average, were 8.9 years of age (range = 5–13 years). Students' support needs varied across the SIS-C School Participation and School Learning domains, and five students had exceptional behavioral support needs. The subject areas that were the focus of the SSPP included reading and language arts ($n = 7$), math ($n = 3$), social studies/science ($n = 4$), and multiple subject areas ($n = 1$). Educator demographic information is

available in Supplemental Table 1. A majority identified as White ($n = 11$) and female ($n = 16$).

On average, educators reported working as educators for 10.3 years (range = 0.5–28 years) and

5.5 years (range = 0–27 years) in their specific role. Educators reported their highest degree

earned as follows: master's degree ($n = 17$), bachelor's degree ($n = 12$), and doctoral degree ($n = 1$).

Research Design

We used a multiple-methods approach (Leko et al., 2022) to qualitatively and

quantitatively examine the usability, acceptability, and feasibility of the SSPP and quantitatively

examine its potential efficacy. In examining the potential efficacy of the SSPP, we implemented

a pilot randomized controlled trial (RCT) utilizing a stepped-wedge design (Hemming, et al,

2015). The stepped-wedge design facilitated the collection of intensive longitudinal data (defined

as a sequentially ordered set of data points densely collected over a short timeframe) to identify

variations in trends among outcomes resulting from the SSPP. Specifically, we assessed student

access, engagement, learning, and support in general education classrooms daily during the

school week using the Daily Quick Pulse Survey (described subsequently). In the stepped-wedge

design, we used a simple randomization procedure to evenly allocate each educator team ($n = 15$)

to one of three groups, each with a different baseline duration: 2 weeks, 3 weeks, or 4 weeks.

That is, five teams had a baseline duration of 2 weeks, five had a baseline duration of 3 weeks,

and five had a baseline duration of 4 weeks. This allowed all teams to receive the intervention,

but over different time periods to create the opportunity for up to three demonstrations of the

experimental effect of introducing the SSPP. We conducted randomization after recruitment but

before baseline data collection began, minimizing the potential for selection bias.

Importantly, educator teams did not have access to the intervention components of the

SSPP online platform until after their assigned baseline period ended and they entered the intervention phase. The online platform featured checklists detailing each procedural element required for engagement in the SSPP. These checklists were integrated into the online platform to ensure high fidelity in adherence to the SSPP protocol. Access to specific sections of the online platform necessary for SSPP implementation was facilitated through assigned logins for educator teams, enabling research team members to manage SSPP online platform access across randomly assigned groups. Additionally, the online platform provided researchers with a log of intervention dosage during the intervention phase, documenting the teams' utilization of online platform features.

Procedures

The SSPP included four phases: (1) pre-planning, (2) supports planning, (3) ISP implementation and ongoing evaluation, and (4) post-implementation. All project activities were housed in the SSPP online platform created in Basecamp to ensure participants had access to all materials and resources (e.g., universal design for learning resources, learning activity resources, explainer videos for SSPP activities). Teams completed activities in the prescribed order following the timeline according to their assigned baseline condition. Across the four phases, educator teams worked together during weekly 30-min meetings with a project facilitator who was a member of the research team and helped guide teams through the SSPP phases and activities on the online platform aligned with the specified timeline. Although teams completed most activities during meetings, they also could communicate with the facilitator and/or other team members through a chat feature on the online platform outside of meetings. The chat feature often was used to discuss schedule changes or student absences.

Pre-planning

The purpose of the pre-planning stage was to gather information to understand (a) the student's support needs, (b) the general education classroom context, and (c) the student's preferences. To understand support needs, the team completed the School Learning and School Participation subscales of the SIS-C (Thompson et al., 2016) with the facilitator serving as the interviewer. This allowed both educators to understand the type, intensity, and frequency of support the student needed to participate in a variety of school learning and participation activities (see Table 1). To understand the general education classroom context, teams completed a general education inventory (available from first author) focused on the physical layout of the classroom; academic and behavioral expectations; and student interactions with peers, academic materials, and the general educator. To understand the student's preferences, educators conducted an interest inventory (available from first author) with the focus student.

During pre-planning, we also collected baseline data to gather information on student outcomes using the Daily Quick Pulse Surveys (described subsequently) completed by the general educator and focus student over 2, 3, or 4 weeks, depending on the assigned baseline condition. During this time, the focus student received instruction in the general education classroom for the subject area that was the focus of the SSPP. Educators also completed demographic forms about themselves, a demographic form about the focus student, and the Scales of Independent Behavior-Revised (SIB-R; Bruininks et al., 1995) for the student. The general educator also completed the Arranging Supports Survey (described subsequently).

Supports Planning

After pre-planning, educators engaged in supports planning to develop an ISP for the focus student during one or two of the weekly 30-min meetings. Teams planned three types of supports: curricular adaptations, instructional supports, and participation supports. If educators

required additional ideas or feedback about identified supports during supports planning, they

had the option to post a question in the Idea Exchange, a question-and-answer forum within the

SSPP online platform, where other participants could respond. All teams and researchers had

access to the Idea Exchange and could post and respond to questions at any time. Educators and

focus students did not complete the Daily Quick Pulse Survey during planning.

First, teams planned curricular adaptations, defined as adjustments to the general

education curriculum, including prioritizing the curricular objectives aligned to the state-adopted

general education standards and incorporating specific learning goals for the student (Thompson

et al., 2022). The general educator first identified the academic objectives for the next 6 weeks,

which often reflected one unit of instruction. Next, the team discussed whether the focus student

would be expected to meet the same objectives or if adapted expectations aligned to grade-level

standards would be needed. Additionally, teams discussed the need for additional alternative

learning goals that were important to address in the general education classroom but not

necessarily aligned to grade-level academic objectives. For most students, these were goals

related to social skills, communication, and behavior. Next, teams identified instructional

supports, defined as materials and/or teaching strategies that help students access the general

education curriculum to maximize learning (Thompson et al., 2022). First, the general educator

identified planned learning activities for the upcoming unit (e.g., word problems, note taking,

build a model, science experiments, paper and pencil assessment). For each learning activity, the

team discussed if and how it would need to be adapted to promote the focus student's full

participation. Finally, teams planned participation supports, defined as additional supports that

help promote engagement and belonging by ensuring the student fully participates in all aspects

of the general education classroom (Thompson et al., 2022). The team discussed any additional

supports the focus student might need to be a fully participating member of the classroom (e.g., visual schedules, peer supports).

Supports Implementation and Ongoing Evaluation

After the team developed the first version of the ISP, they implemented the plan for 2 to 6 weeks, depending on when teams entered the study and the school year ended. During implementation, the general educator and focus student completed the Daily Quick Pulse Survey and educators engaged in problem-solving process during the weekly 30-min meeting with the facilitator to discuss the effectiveness and appropriateness of the supports. During the meeting, the project facilitator took notes about which supports worked well, which supports were inadequate, and what (if any) changes were needed to the support plan, and the team updated the ISP if changes were needed.

Post-Implementation

After teams implemented the ISP over several weeks, the project facilitator met with the team one additional time. During this meeting, both educators independently completed the Arranging Supports Survey, Social Validity Survey, and the SSPP Online Platform Survey.

Measures

To examine the usability, acceptability, feasibility, and promise of the SSPP for impacting student outcomes, we gathered multiple sources of data from project participants through four researcher-developed instruments specific to this project, all of which had been piloted with other educator teams in previous project years. All instruments are available from the first author upon request.

Arranging Supports Survey

General educators completed the Arranging Supports Survey during both the pre-

planning and post-implementation phases. Educators rated the extent to which they felt competent in arranging curricular, instructional, and participation supports for the focus student on a 5-point Likert-type scale (1 = *to no extent*, 5 = *to a very great extent*; see Table 2). The survey included definitions for each type of support as described in the Procedures section.

Daily Quick Pulse Survey

Both the general educator and focus student completed a Daily Quick Pulse Survey daily. Educators provided ratings on eight items, with two items in each of the domains (access, engagement, learning, supports). These items were based on our review of outcome measures in published intervention research focused on general curriculum access and inclusive education. For example, educators were asked if the student accessed the same general education curriculum as peers and participated in general education curriculum instructional activities (access), engaged and made comments in the general education classroom (engagement), made progress on general education curriculum goals and individualized learning goals (learning), and received the support they needed and if the intensity of the supports matched their support needs (support). All items were rated on a 5-point Likert-type scale (0 = *not at all* or *none to very little*, 4 = *almost always* or *to a very great extent)*.

Students responded to four items rated on a 5-point Likert-type scale: (a) Were you able to use the materials that the other students used in class today? (1 = *hardly at all,* 5 = *used everything that the other students used*) (b) Did you participate in class today? (1 = *hardly at all,* 5 = *participated the whole time*), (c) How much did you learn in class today? (1 = *hardly anything*, 5 = *learned everything that was taught to me*), and (d) Were you able to get the help you needed when you needed it in class today? (1 = *hardly ever,* 5 = *got all the help I needed*). These questions were aligned to the questions included in the educator survey but were adjusted

on a student-by-student basis to ensure the questions and response options were accessible (e.g.,

included simplified language, paired emojis with text in response options, increased print size).

Social Validity Survey

Educators completed a social validity survey once during the post-implementation phase.

Educators rated their agreement with social validity statements on a 4-point Likert-type scale (0

= *strongly disagree*, 3 = *strongly agree*). Social validity statements addressed the feasibility of

arranging curricular, instructional, and participation supports; educators' understanding of

supports outlined in the student's support plan; the likelihood of the SSPP resulting in better

supports in comparison to other supports planning efforts in place; the time and effort required

for using the SSPP; and value of the weekly problem-solving meetings (see Supplemental Table

2). They also had the opportunity to provide open-ended feedback about the SSPP.

SSPP Online Platform Survey

General and special educators also completed the SSPP Online Platform Survey once

during the post-implementation phase. Educators rated the extent to which features of the online

platform were useful on a 11-point slider scale (0 = *not at all useful*, 10 = *extremely useful*).

Specifically, educators rated the usefulness of the explainer videos, the resources about universal

design for learning, and the resources about learning activities types in the general education

classroom that were embedded within the online platform. They also had an opportunity to

provide open-ended feedback in relation to suggested features to include in the online platform

and existing features that enabled or hindered collaborative supports planning.

Data Analysis

We analyzed data from each of the four instruments in different ways. We calculated

basic descriptive statistics across responses to closed-ended items on the Arranging Supports

Survey, Social Validity Survey, and SSPP Online Platform Survey, while also extracting

illustrative quotes from responses to open-ended items to address Research Question 1. For

Research Question 2, the Daily Quick Pulse Survey provided the primary data for evaluating the

potential efficacy of the SSPP in our RCT, and we used Bayesian multilevel modeling (B-

MLM). Further details of the analysis plan and model specifications, including priors and

computation algorithms, can be found in supplemental materials posted on OSF

(https://tinyurl.com/mwt2utf7). We analyzed data relevant to each outcome domain (student

engagement, access to and progress in the general education curriculum and on individualized

learning goals, and improved supports for the learning and participation of students with IDD in

the general education classroom). Initially, we visually presented intensive longitudinal data

using time series graphs, delineating trends during both the baseline and intervention phases.

Subsequently, after fitting the B-MLMs to data, we examined projected differences in the log-

odds of achieving higher outcomes for students at 6 weeks of SSPP intervention, in contrast to 6

weeks of baseline conditions (see figure posted on OSF). While concerns regarding statistical

power and the precision of effect size estimates inherently accompany pilot evaluations due to

limited sample sizes, it remains possible to evaluate the statistical significance of effects at the

5% level by determining whether a 95% confidence interval excludes zero. Bayesian analysis

offers an additional advantage in pilot evaluations by allowing assessment of whether the actual

effect size is likely to surpass the threshold of a small effect in the hypothesized direction, even

when rejecting the null hypothesis is not feasible due to low statistical power. Furthermore, the

utilization of a cumulative logistic link function enabled the conversion of model-projected

differences in a student's log-odds of achieving higher outcomes when exposed to the SSPP

compared to baseline into odds ratios, thereby gauging practical significance. Traditionally, odds

ratio values of 1.67, 3.47, and 6.71 correspond to small, medium, and large effect sizes.

Results

Usability, Acceptability, and Feasibility of the SSPP

Descriptive quantitative data from survey items and qualitative data from open-ended responses on the Arranging Supports Survey, Social Validity Survey, and the SSPP Online Platform Survey provided data relevant to Research Question 1.

Arranging Supports

Overall, educators perceived their competence in arranging supports in the general education classroom as having increased after the SSPP (see Table 2), suggesting the usability of the SSPP process. During the pre-implementation phase, over half of the educators reported their competence as small or moderate in arranging curricular adaptions (60.0%), instructional supports (53.3%), and participation supports (60.0%). During the post-implementation phase, competence increased with well over half of the educators reporting their competence as great and very great in arranging curricular adaptions (71.4%), instructional supports (92.9%), and participation supports (64.3%).

Social Validity

Overall, educators found the SSPP to be feasible, effective, and valuable (see Supplemental Table 2). All but one educator agreed or strongly agreed that arranging curricular adaptions, instructional supports, and participation supports was feasible. Likewise, all educators agreed or strongly agreed the ISP was understood by other educators, the SSPP was more effective than other approaches used for supports planning, and the effort and time required of the SSPP and the weekly problem-solving meetings were valuable and worthwhile. These findings were further supported by responses to open-ended items. One educator stated, "This was a

useful activity to help coordinate the collaboration between the special education teacher and the

general education teacher. It was beneficial because I usually don't have that much time to

collaborate." Another noted, "It was greatly appreciated to be given the space, time, and structure

to meet and plan for what our focus student needed most at the time."

SSPP Online Platform

Educators rated the usefulness of the SSPP online platform using a 11-point slider scale (0

= *not at all useful*; 10 = *extremely useful*). Although responses varied, overall ratings indicated

educators found the online platform to be useful and acceptable in the following ways: (a) the

explainer videos were useful in regard to completing the steps of the SSPP (*M* = 7.8, *SD* = 2.4,

range = 3–10); (b) the resources about universal design for learning, including how to make a

classroom and school more universally designed, were useful (*M* = 7.7, *SD* = 2.3, range = 3–10);

and (c) the resources about learning activities are used in general education classrooms and how

to promote the participation of students receiving special education services in these activities

were useful (*M* = 8.3, *SD* = 2.2, range = 3–10). Several educators provided recommendations for

improving the online platform. Although educators appreciated the Idea Exchange where

participants could share ideas and resources during the supports planning process, several noted

that value of including more resources within the online platform itself. Others recommended

providing examples of various aspects of the SSPP, including a model of a completed ISP.

Potential Efficacy of SSPP on Student Outcomes

A summary of the B-MLM analysis outcomes is provided in Supplemental Tables 3 and

4. Despite encountering substantial levels of estimation uncertainty in this pilot evaluation, we

were able to gauge the potential efficacy of the SSPP intervention in improving student

outcomes. This assessment was based on the probabilities that the real effect, given the available

data, surpassed the threshold of a small effect. Notably, our findings were diverse, contingent

upon the specific outcome domain from the Daily Quick Pulse Survey. The findings also differ

across student and educator reports of outcomes on the Daily Quick Pulse Survey. Findings

across all outcome domains are provided on OSF (https://tinyurl.com/mwt2utf7), and below we

summarize the findings for outcome domains where there was the most certainty in the analyses.

Student-reported Outcomes

Student Engagement. Student-reported data on student engagement outcomes came

from the following indicator: Did you participate in class today? Results of B-MLM analysis

indicates that 6 weeks of the SSPP instead of more baseline increases the log-odds of higher

student engagement outcomes, Δ_1^E=2.237, 95% CI (0.082, 4.432). This translates into a large

effect, signifying that the odds of higher student engagement outcomes increases by almost

ninefold, OR=9.362. While this effect technically exhibits statistical significance at the 5%

threshold, given that the 95% CI excludes zero, a cautious approach is warranted when

interpreting these results. Specifically, scrutiny of the interval's lower boundary reveals it almost

touches zero. Thus, even though the interval excludes zero, it still encompasses many effect

values that practically approximate zero ($<|.18|$). Consequently, these data are consistent with

effect sizes tantamount to zero, even if zero itself is rejected. As such, a more insightful

perspective to take in a pilot evaluation might revolve around assessing the probability that the

actual effect size reaches at least 1.67 based on these data, expressed as $P(\Delta_1^E > 1.68)$. In this

case, the model assigns a 70.01% probability, given these data, that the size of the real effect

exceeds the threshold for a small effect. Despite estimation uncertainty, this probability is a

promising finding and warrants future research.

Student Support in General Education. Student-reported data on improved support in

general education came from the following indicator: Were you able to get the help you needed

when you needed it in class today? Results of B-MLM analysis shows that 6 weeks of the SSPP

instead of baseline increases the log-odds of increase supports by Δ_1^S=2.282, 95% CI (-0.1976,

4.667). This augmentation translates into a small effect size, signifying almost a tenfold increase

in the odds of higher outcomes, OR=3.754. However, given the 95% CI contains zero, these

results are not considered statistically significant. However, a follow-up Bayesian analysis found

a 70.00% probability, given these pilot data, that the size of the real effect exceeds the threshold

for a small effect. This probability is a promising finding suggesting that the SPSS might be a

potential way to increase support in general education classrooms.

Educator-reported Data on Student Outcomes

Student Learning. Educators reported on two indicators for student learning outcomes:

(a) Does the focus student make progress in their learning goals directly related to the general

education curriculum? (b) Does the focus student make progress in their individualized learning

goals not directly related to the general education curriculum? Regarding student learning goals

related to the general education curriculum, results of the B-MLM analysis show that providing

students with 6 weeks of the SSPP intervention instead of more baseline time hardly increases

the log-odds that the student will make progress in learning goals related to general education

curriculum, Δ_1^{L1}=0.337, 95% CI (-1.814, 2.356). Not only are these results not statistically

significant, but Bayesian analysis found there was only a 10% probability, given these pilot data,

that the actual effect exceeds the threshold for small effect sizes.

However, at the same time, on the indicator for individualized learning goals, educators

reported an increase based on the log-odds, Δ_1^{L2}=1.940, 95% CI (-0.040, 4.093). The BLM

suggests a large effect size, signifying almost a sevenfold increase in the odds of attaining other

types of learning goals (OR=6.955). However, great caution must be taken when interpreting this effect size as the inclusion of zero in the 95% CI shows that these results are not statistically significant. Additionally, a follow-up Bayesian analysis suggests a 60% probability, given these pilot data, that the actual effect exceeds the threshold for a small effect size.

Student Support in General Education. Educators reported on two indicators for student support: (a) Does the focus student receive the supports they need to successfully participate in the general education classroom? (b) Does the intensity of supports provided match their support needs? The results of the B-MLM analysis indicate that providing students with 6 weeks of SSPP instead of baseline does not substantially alter the log-odds of educator's perception of student's support in general education Δ_1^S=0.043, 95% CI (-2.192, 2.307). This augmentation essentially equates to a negligible effect size (OR=1.044). Again, it is crucial to reiterate that these results lack statistical significance, as the 95% confidence interval contains zero. Additionally, a follow-up Bayesian analysis reveals only a 12.25% probability, given these pilot data, that the actual effect size exceeds the threshold for a small effect.

Analysis of the second indicator shows that providing students with 6 weeks of SSPP instead of baseline may increase the log-odds of that the intensity of supports was a good match for support need, Δ_1^{S2}=2.341, 95% CI (0.042, 4.747). This translates into a large effect size, signifying almost a tenfold increase in the odds of achieving higher outcomes (OR=10.391). It is essential to exercise caution as the 95% confidence interval encompasses many values practically equivalent to zero. Follow-up Bayesian analysis suggests a 71.84% probability, given pilot data, that the actual effect size exceeds the threshold for a small effect.

Discussion

There is a pressing need for strategies to advance access to and supports for inclusive

education for students with IDD. As described in the introduction, despite compelling evidence

of the benefits of inclusive education (Agran et al. 2020; Mansouri et al., 2022), it remains a

persistent rarity for students with IDD (U.S. Department of Education, 2013, 2023). In response,

the SSPP was designed to provide a systematic process to support educators to build

collaborative teams and center supports planning around students' support needs. Its

development was informed by what is known about barriers faced by educators (Matzen et al.,

2010; Thompson et al., 2020; Velasco, 2023), as well as a social-ecological understanding of

disability, which recognizes that supports must be aligned with each student's individual support

needs given their knowledge and abilities and the demands of the environments in which they are

learning. All too often, generic supports are used without consideration of each student's needs.

Such generic supports can be misaligned with needs, lead to over- or under- supporting students,

and often are ineffective in advancing inclusive education and the goals of access, engagement,

and learning (Agran et al. 2020; Mansouri et al., 2022). The findings from this pilot study

suggest that the SSPP holds promise for enabling more effective supports planning as well as the

implementation of individualized supports aligned with support needs in inclusive, general

education classes. The 15 teams that participated in this study, which included a general and

special educator, were able to use the SSPP to support students with IDD in general education

classrooms and reported high usability, acceptability, and feasibility of the SSPP process.

When looking at educator responses on the Arranging Supports, SSPP Online Platform,

and Social Validity surveys, responses were overall very positive and educators emphasized how

having a systematic process was highly useful and different from other approaches that were not

structured leading to less impact on practice and outcomes. It also is promising that educators

rated their competencies in curricular adaptations, instructional supports, and participation

supports as increasing, as these are critical in understanding how to align supports with students'

support needs. Further, despite time demands being frequently identified as a major barrier to

collaboration and implementing best practices (Matzen et al., 2010; Thompson et al., 2020;

Velasco, 2023), educators in this study reported that the time spent using the SSPP was effective

and the structure supported effective collaboration. As would be expected, areas for ongoing

improvement in future development and implementation research were identified, particularly in

the online platform and in the organization of materials and supports for educators. This aligns

with other research on the importance of supports implementation for initiating and sustaining

new practices (Odom et al., 2020). It also highlights the importance of jointly planning for

student and educator support need identification and alignment with supports through the SSPP.

For example, there was not a coaching element in the SSPP process, as facilitators simply

supported implementation of the process. Future research could explore the additional benefits of

a coaching process (Brock & Carter, 2017; Kraft et al., 2018) when the SSPP is being adopted or

for implementation support when problems with SSPP implementation fidelity occur. For

example, coaches could contribute to problem-solving meetings beyond facilitation or support

additional assessment of support needs if there remain misalignments with supports

implemented.

Further, educators identified the importance of clear and usable guidelines for identifying

and arranging supports. Although providing models and examples is a potential enhancement to

the system, this also highlights the tension of balancing the need for support plans to be

individualized to student needs, which are highly unique and require individualized assessment

and approaches. Supporting educators to learn problem solving strategies to guide the alignment

of supports with individualized needs as well as resources that they can use to align supports to

support needs seems essential (Thompson et al., 2020). This has implications not only for the

SSPP but how educators are trained to support students with IDD and the degree to which

problem-solving skills are taught that empower educators to assess support needs and

individualizing supports to those needs while also balancing the demands of the general

education classroom and curriculum (Ruppar et al., 2023)

 While being mindful that the primary purpose of a pilot study is evaluating whether a

subsequent impact study is worth the investment of resources, we cautiously examined pilot data

to determine whether there are promising outcomes that warrant future examinations of the

SSPP's impact on students' access, engagement, learning, and supports in general education

classrooms. The use of the Daily Quick Pulse Survey and gathering repeated and ongoing

feedback about the impacts of the SSPP process should be further explored, as it was feasible in

this study and enabled us to gain a sense of the impact of the SSPP over time, as well as analyze

the repeated measure data when the SSPP was and was not in place. The Daily Quick Pulse

Survey is not only more time-efficient than observation systems, but its regular daily application

instead of only intermittent data collection at the beginning and end of the intervention cycle

helps compensate for variability in recall accuracy. Further, this allowed for student perspectives

to be captured, an important area in assessment research. Ongoing research should explore the

relationship between the Daily Quick Pulse Survey and other measures of assessment of access

to and progress in the general education classroom and curriculum, considering innovations in

both support needs assessment as well as outcome assessment (Karvonen et al., 2020).

 The findings from the analysis of the Daily Quick Pulse Survey are exploratory and must

be interpreted with caution. Using Bayesian MLM analysis, we were able to explore the potential

of the SSPP to inform ongoing research. Overall, across the four domains of access, engagement,

learning, and supports, the pilot data trended in the direction of the SSPP having positive impacts

from the student and educator perspective, which suggests the promise of the SSPP. Although

additional data is needed to estimate the impact of SSPP on outcomes, these pilot data show a

relatively high probability that potential impacts lie in the domains of engagement and supports

from students' perspectives and in the domains of achieving individualized learning goals and

aligning supports with support needs for educators. Given that students' perceptions of

engagement and educators' perceptions of goal attainment and alignment of supports are key

outcomes of the SSPP and predictors of access to and progress in the general education

curriculum (Agran et al., 2020), these are promising findings that warrant future investigation.

Interestingly, the pilot data cautiously suggest educators report positive impacts on their

students' attainment of individualized learning goals as opposed to general education curriculum

goals during the SSPP compared to baseline. Moreover, the pilot data tentatively suggest greater

impacts on aligning students' supports with their support needs than students receiving supports

to participate in the general education classroom. Thus, the most probable hypotheses coming

out of this pilot study point to the potential importance of continuing to build supports for teams,

as requested by teams in their feedback on the SSPP online platform, for how to problem solve to

support students to access the general education curriculum and achieve general education

curriculum goals. It is possible that the barriers of access to and progress in the general education

curriculum can be impacted by the SSPP, but that there may also need to be attention to the

broader systemic barriers and changes needed to make this a reality (Burnette et al, 2023). It also

is interesting that students were more likely to report than educators that the SSPP (compared to

baseline) impacted their engagement. Other research has found that student and educator

perspectives can diverge when reporting on outcomes (Shogren et al., 2021), and it is possible

that students are experiencing differences that are not yet observable to their educators but that

could continue to lead to changes in outcomes from both educator and student perspectives over

time. This could occur if students feel more supported in the classroom, an area teams identified

as having potential for being enhanced by the SSPP, and this might immediately impact students'

feelings of engagement. Overall, more research is needed to further explore the impacts of the

SSPP on student outcomes in general education classrooms, building on this pilot analysis.

Limitations

In interpreting the findings and planning for future research and practice, several

limitations must be considered. There was a small sample size of students and the teams that

supported them with representation across limited geographic regions. Because of the small

sample size, we did not stratify the sample based on support needs or other characteristics or

consider this in the analyses, but trusted randomization to balance these factors across groups.

More work is needed to understand the impact of these factors. Importantly, teams identified the

benefits of SSPP for all students and concerns were not raised about the potential for students

with varying levels of support needs, again suggesting the potential wide-ranging impacts of the

SSPP. We also acknowledge that, because we recruited educator participants based on their

interest in inclusive education, their unique dispositions, knowledge, and skills may have

influenced SSPP implementation. Future research should explore involvement of educators with

different perspectives and experiences related to including students with IDD in general

education classrooms

Additionally, our main outcome measure was the Daily Quick Pulse Survey, and,

although we argue there are benefits of capturing repeated perspectives of both students and

educators, supplementing this with observational and standardized assessment data is a direction

for future research. Further, we adopted an analytic approach focused on examining the probabilities of impacts of the SSPP compared to baseline with available pilot data. It would be premature to accept or reject hypotheses related to impacts before a full efficacy study is conducted. Future research with larger samples is needed to expand these findings. Finally, with the limited sample, there were missing data and large confidence intervals around all outcome measures, making it unfeasible to estimate effect sizes other than calculate the probability of an effect. In this case, our use of full information Bayesian estimation with regularization priors has effectively constrained parameter estimates within reasonable bounds and harnessed all available data from participants, even when incomplete, allowing us to examine probabilities to guide subsequent research.

Conclusions and Future Directions

Although preliminary, the findings suggest additional research with the SSPP is warranted, as the process addresses a critical need to build collaboration across general and special educators and advances individualized supports planning that is aligned with each student's identified support needs. Future research can address the limitations of and further explore the SSPP. Effective and systematic means to advance not only access to but progress in the general education curriculum with individualized supports based on needs is a critical area in inclusive education for students with IDD to change the trajectory of opportunities for inclusive education.

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Table 1

Table 1

Student Characteristics

Team	Gender	Age	Medical	Behavioral	SIS-C Scores School Participation Standard Score	School Participation Standardized Percentile Rank	School Learning Standard Score	School Learning Standardized Percentile Rank	SIB-R Scores	Focus of SSPP
1	Male	11	No	No	0	0	0	0	88	Math
2	Female	13	No	No	1	0.1	3	1.0	89	Math
3	Male	5	No	No	0	0	1	0.1	73	Reading & Language Arts
4	Male	10	No	No	0	0	1	0.1	76	Social Studies/Science
5	Male	5	No	Yes	11	63.1	10	50.0	28	Reading & Language Arts
6	Male	9	No	Yes	8	25.2	7	15.9	66	Other
7	Male	11	No	No	2	0.4	5	4.8	86	Social Studies/Science
8	Female	5	No	Yes	6	9.1	4	2.3	49	Reading & Language Arts
9	Male	7	No	Yes	9	36.9	9	36.9	67	Reading & Language Arts
10	Male	8	No	No	9	36.9	5	4.5	81	Reading & Language Arts
11	Male	12	No	No	5	4.8	4	2.3	79	Science
12	Male	13	No	Yes	4	2.3	7	15.9	77	Social Studies
13	Male	7	No	No	5	4.8	7	15.9	84	Reading & Language Arts
14	Male	9	No	No	6	9.1	8	25.2	86	Reading & Language Arts
15	Female	8	No	No	3	1.0	9	36.9	55	Math

Table 2

General Educator Competence in Arranging Supports

Support category	Pre						Post					
	No extent	Small extent	Moderate extent	Great extent	Very great extent	*M*	No extent	Small extent	Moderate extent	Great extent	Very great extent	*M*
Curricular adaptations	6.7%	0%	60.0%	26.7%	6.7%	2.3	0%	0%	28.6%	35.7%	35.7%	4.1
Instructional supports	0%	13.3%	40.0%	33.3%	13.3%	3.5	0%	7.1%	0%	50.0%	42.9%	4.3
Participation supports	0%	26.7%	33.3%	33.3%	6.7%	3.2	0%	7.1%	28.6%	21.4%	42.9%	4.0

Note. Likert-type scale = 1 (*to no extent*), 2 (*to a small extent*), 3 (*to a moderate extent*), 4 (*to a great extent*), 5 (*to a very great extent*)